

SIEMENS

SINUMERIK 840D sl

System Variables

Parameter Manual

Valid for

Control

SINUMERIK 840D sl/ 840DE sl

Software

Version

NCU Systemsoftware für 840D sl/ 840DE sl 2.6 SP1

03/2010

6FC5397-6AP10-4BA0

List der System Variables 1

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.



DANGER

indicates that death or severe personal injury will result if proper precautions are not taken.



WARNING

indicates that death or severe personal injury may result if proper precautions are not taken.



CAUTION

with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.

CAUTION

without a safety alert symbol, indicates that property damage can result if proper precautions are not taken

NOTICE

indicates that an unintended result or situation can occur if the corresponding information is not taken into account.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation for the specific task, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems:

Proper use of Siemens products

Note the following:



WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be adhered to. The information in the relevant documentation must be observed.

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We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Preface

Structure of the documentation

The SINUMERIK documentation is available in three versions:

- General Documentation
- User Documentation
- Manufacturer/Service Documentation

Information on the following topics is available at <http://www.siemens.com/motioncontrol/docu>

- Ordering documentation
Here you can find an up-to-date overview of publications.
- Downloading documentation
Links to more information for downloading files from Service & Support.
- Researching documentation online
Information on DOConCD and direct access to the publications in DOConWEB.
- Compiling individual documentation on the basis of Siemens contents with the My Documentation Manager (MDM), refer to <http://www.siemens.com/mdm>. My Documentation Manager provides you with a range of features for generating your own machine documentation.
- Training and FAQs
Information on the range of training courses and FAQs (frequently asked questions) are available via the page navigation.

Target group

This documentation is intended for project engineers, commissioning engineers, machine operators, service and maintenance personnel.

Benefits

The Parameter Manual enables the intended target group to evaluate error and fault indications and to respond accordingly.

With the help of the Parameter Manual, the target group has an overview of the various diagnostic options and diagnostic tools.

Standard version

This Parameter Manual only describes the functionality of the standard version. Extensions or changes made by the machine tool manufacturer are documented by the machine tool manufacturer.

Other functions not described in this documentation might be executable in the control. This does not, however, represent an obligation to supply such functions with a new control or when servicing.

Further, for the sake of simplicity, this documentation does not contain all detailed information about all types of the product and cannot cover every conceivable case of installation, operation or maintenance.

Technical Support

If you have any questions, please contact the following hotline:

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	€0.14/min. from German landlines, max. 0.42 €/min for calls from a mobile phone.
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Note

National phone numbers for technical support are provided under the following Internet address: <http://www.automation.siemens.com/partner>

Questions about this documentation

If you have any queries (suggestions, corrections) in relation to this documentation, please send a fax or email to the following address

Fax	+49 9131 98 2176
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A fax form is available at the end of this document.

SINUMERIK Internet address

<http://www.siemens.com/sinumerik>

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List of System Variables

1.1 Properties of system variables

You will find the information below in the table entries of the system variables:

Data type, variable name, if necessary with index 1 ...n, short name (may not yet be defined), reference to literature

Detailed description of variables

Index description for index 1 ...n (optional)

Unit

Value range (minimum and maximum values) and initial value

Properties with regard to reading/writing in:

- PP: Part program
- SA: Synchronized action
- PP/SA protection level: Protection level with regard to part program/synchronized action
- OPI: Operator panel interface
- OPI protection level: Protection level with regard to operator panel interface
- OEM: OEM compile cycles

Read: Properties with regard to reading

- PP: X = Reading possible, no preprocessing stop
- PP: VL_STOP = Reading possible, preprocessing stop carried out

Write: Properties with regard to writing

- PP: X = Writing possible, no preprocessing stop
- PP: VL_Stop = Preprocessing stop is carried out during writing
- PP: HL_Sync = Writing is carried out synchronously with main run

Permissible names for axis-specific indices:

- GEO: Names of geometry axes
- CHAN: Names of channel axes
- MACH: Names of machine axes
- SPIN: Names of spindles

Properties of system variables

Properties with regard to valuation:

- Channel-specific: Value of variable in current channel
- Cross-channel: Value of axis-specific variable in the channel, where the axis is currently active

Properties with regard to block search

Properties with regard to NCU-Link

1.1.1 Arrangement of system variable information

Type	Identifier [Field limit 1,Field limit 2,]		Short name			Reference:	Reference to literature
description:							
Description lines ...							
index 1:		Description of field limit 1					
index 2:		Description of field limit 2					
index 3:		Description of field limit 3					
unit:		Unit					
min.:		Minimum value	max.:	Maximum value	std:	Default value	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stop	X	0-7	X	0-7	X	
write:		X	0-7	X	0-7	X	
axis identifier:					Valuation:	Cross-channel	
block search		Search run condition			link	Link condition	

1.1.2 R parameters

DOUBLE	R [n]		Arithmetic variable of type Real			Reference:	
description:							
Array variable Rn or R[n] is an arithmetic variable of type Real and is user-definable.							
Rn or R[n] is used to program the variable in the part program.							
\$Rn or \$R[n] is used to program the variable in a synchronized action.							
The arithmetic variables are stored in SRAM and can be read in and out using the data backup feature.							
index 1:		The maximum number of R variables is defined in \$MC_MM_NUM_R_PARAM.					
unit:							
min.:		-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	X	X	7	X	7	X	
axis identifier:					Valuation:	channel-specific	
block search		Program sensitive			link	No restrictions	

Channel-specific synchronized action variables

1.2 Channel-specific synchronized action variables

INT	\$AC_MARKER [n]						User array variable of type Integer	reference:	
description:									
Array variable \$AC_MARKER[n] is used to store application-related integer arithmetic results.									
The variable is stored in DRAM or in SRAM depending on \$MC_MM_BUFFERED_AC_MARKER. The array elements of the variable in volatile memory (DRAM) are set to 0 on a Reset.									
Index 1: The dimension is defined in MD \$MC_MM_NUM_AC_MARKER.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	runin stp	X	/	-	0	X			
axis identifier:									
Valuation: channel-specific									
block search Not classified link No restrictions									
INT	\$AC_SYSTEM_MARKER [n]						System array variable of type Integer	reference:	
description:									
Array variable \$AC_SYSTEM_MARKER[n] is used to store application-related integer arithmetic results. The variable is reserved for SIEMENS applications.									
The variable is stored in DRAM or in SRAM depending on \$MC_MM_BUFFERED_AC_MARKER. The array elements of the variable in volatile memory (DRAM) are set to 0 on a Reset.									
Index 1: The dimension is defined in MD \$MC_MM_NUM_AC_SYSTEM_MARKER.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	runin stp	X	/	-	0	X			
axis identifier:									
Valuation: channel-specific									
block search Not classified link No restrictions									
DOUBLE	\$AC_PARAM [n]						User array variable of type Real	reference:	
description:									
Array variable \$AC_PARAM[n] is used to store application-related Real arithmetic results.									
The variable is stored in DRAM or in SRAM depending on \$MC_MM_BUFFERED_AC_PARAM. The array elements of the variable in volatile memory (DRAM) are set to 0 on a Reset.									
Index 1: The dimension is defined in MD \$MC_MM_NUM_AC_PARAM.									
unit:									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	runin stp	X	/	-	0	X			
axis identifier:									
Valuation: channel-specific									
block search Not classified link No restrictions									

Channel-specific system variables

DOUBLE	\$AC_SYSTEM_PARAM [n]		System array variable of type Real			reference:	
description:							
Array variable \$AC_SYSTEM_PARAM[n] is used to store application-related Real arithmetic results. The variable is reserved for SIEMENS applications.							
The variable is stored in DRAM or in SRAM depending on \$MC_MM_BUFFERED_AC_PARAM. The array elements of the variable in volatile memory (DRAM) are set to 0 on a Reset.							
Index 1:		The dimension is defined in MD \$MC_MM_NUM_AC_SYSTEM_PARAM.					
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

1.3 Channel-specific system variables

FRAME	\$P_UBFR		1st basic frame in the data management system			reference:	
description:							
Variable \$P_UBFR is used to program the 1st basic frame in the data management system. G500, G54 .. G599 can be used to activate the corresponding data management frame. The data management frames are stored in SRAM and can be read in and out using the data backup feature. \$P_UBFR is equivalent to \$P_CHBFR[0].							
Application:							
\$P_UBFR = ctrans(x,10) : crot(z,45)							
\$P_UBFR[y,tr] = 5							
unit:							
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

Channel-specific system variables

FRAME	\$P_SETFRAME						Active system frame for preset actual value memory	reference:
description:								
Variable \$P_SETFRAME is used to program the active system frame for preset actual value memory and scratching.								
On a Reset, the activation of the system frame depends on the following machine data:								
Bit0 in \$MC_RESET_MODE_MASK								
Bit0 in \$MC_CHSFRAME_RESET_MASK								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	
FRAME	\$P_EXTFRAME						Active system frame for external frame	reference:
description:								
Variable \$P_EXTFRAME is used to program the active system frame for the external work offset.								
On a Reset, the activation of the system frame depends on the following machine data:								
Bit0 in \$MC_RESET_MODE_MASK								
Bit1 in \$MC_CHSFRAME_RESET_MASK								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	
FRAME	\$P_PARTFRAME						Active system frame for toolholder	reference:
description:								
Variable \$P_PARTFRAME determines the active system frame for TCARR and PAROT.								
On a Reset, the activation of the system frame depends on the following machine data:								
Bit0 in \$MC_RESET_MODE_MASK								
\$MC_GCODE_RESET_MODE[51]								
\$MC_GCODE_RESET_VALUES[51]								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	

Channel-specific system variables

FRAME	\$P_TOOLFRAME						Active system frame for TOROT	reference:	
description:									
Variable \$P_TOOLFRAME determines the active system frame for TOROT and TOFRAME.									
On a Reset, the activation of the system frame depends on the following machine data:									
Bit0 in \$MC_RESET_MODE_MASK									
\$MC_GCODE_RESET_MODE[52]									
\$MC_GCODE_RESET_VALUES[52]									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	X	-	7	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		No restrictions		
FRAME	\$P_WPFRAME						Active system frame for the workpiece	reference:	
description:									
Variable \$P_WPFRAME is used to program the active system frame for workpiece reference points.									
On a Reset, the activation of the system frame depends on the following machine data:									
Bit0 in \$MC_RESET_MODE_MASK									
Bit4 in \$MC_CHSFRAME_RESET_MASK									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	X	-	7	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		No restrictions		
FRAME	\$P_CYCFRAME						Active system frame for cycles	reference:	
description:									
Variable \$P_CYCFRAME is used to program the active system frame for cycles.									
On a Reset, the activation of the system frame depends on the following machine data:									
Bit0 in \$MC_RESET_MODE_MASK									
Bit5 in \$MC_CHSFRAME_RESET_MASK									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	X	-	7	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		No restrictions		

Channel-specific system variables

FRAME	\$P_TRAFRAME						Active system frame for transformations	reference:	
description:									
Variable \$P_TRAFRAME is used to program the active system frame for transformations. This system frame is configured as follows when a transformation is selected with TRANSMIT or TRACYL:									
\$MN_FRAME_GEOAX_CHANGE_MODE = 1 oder 2									
\$MC_TRANSMIT_ROT_AX_FRAME_1 = 2									
\$MC_TRANSMIT_ROT_AX_FRAME_2 = 2									
\$MC_TRACYL_ROT_AX_FRAME_1 = 2									
\$MC_TRACYL_ROT_AX_FRAME_2 = 2									
unit:									
min.:			max.:			std:			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	X	-	7	-	0	-			
axis identifier:						Valuation: channel-specific			
block search		Not classified				link		No restrictions	
FRAME	\$P_CHBFRAME [n]						Active basic frame in channel	reference:	
description:									
Array variable \$P_CHBFRAME[n] is used to program the nth active basic frame in the channel.									
On a Reset, the activation of the basic frame depends on the following machine data:									
Bit0 and Bit14 in \$MC_RESET_MODE_MASK									
\$MC_CHBFRAME_RESET_MASK									
index 1:			The dimension is defined in \$MC_MM_NUM_BASE_FRAMES.						
unit:									
min.:			max.:			std:			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	X	-	7	-	0	-			
axis identifier:						Valuation: channel-specific			
block search		Not classified				link		No restrictions	

Channel-specific system variables

FRAME	\$P_NCBFRAME [n]					Active global basic frame	reference:	
description:								
Array variable \$P_NCBFRAME[n] is used to program the nth active global basic frame.								
On a Reset, the activation of the basic frame depends on the following machine data:								
Bit0 and Bit14 in \$MC_RESET_MODE_MASK								
\$MN_NCBFRAME_RESET_MASK								
Index 1: The dimension is defined in \$MN_MM_NUM_GLOBAL_BASE_FRAMES.								
unit: -								
min.: - max.: - std: -								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation: channel-specific				
block search		Not classified			link		No restrictions	
FRAME	\$P_ACTBFRAME					Active overall basic frame	reference:	
description:								
Variable \$P_ACTBFRAME determines the active chained overall basic frame. This frame is produced by chaining together all valid (see \$P_NCBFRMASK) global basic frames and all valid (see \$P_CHBFRMASK) basic frames in the channel. The overall basic frame is always recalculated when a basic frame is activated.								
On a Reset, the activation of the basic frames depend on the following machine data:								
Bit0 and Bit14 in \$MC_RESET_MODE_MASK								
\$MN_NCBFRAME_RESET_MASK								
\$MC_CHBFRAME_RESET_MASK								
unit: -								
min.: - max.: - std: -								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search		Not classified			link		No restrictions	

Channel-specific system variables

FRAME	\$P_BFRAME						1. active basic frame in channel	reference:
description:								
Variable \$P_BFRAME is used to program the 1st active basic frame in the channel. The variable is equivalent to \$P_CHBFRAME[0].								
On a Reset, the activation of the basic frame depends on the following machine data:								
Bit0 and Bit14 in \$MC_RESET_MODE_MASK								
\$MC_CHBFRAME_RESET_MASK								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				channel-specific
block search				link				No restrictions
Not classified								
No restrictions								
FRAME	\$P_IFFRAME						Active settable frame	reference:
description:								
Variable \$P_IFFRAME is used to program the active settable frame. A settable data management frame \$P_UIFR[n] becomes the active settable frame on execution of G500, G54 to G599.								
On a Reset, the activation of the settable frame depends on the following machine data:								
Bit0 in \$MC_RESET_MODE_MASK								
\$MC_GCODE_RESET_MODE[7]								
\$MC_GCODE_RESET_VALUES[7]								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				channel-specific
block search				link				No restrictions
Not classified								
No restrictions								
FRAME	\$P_PFRAME						Programmable frame	reference:
description:								
Variable \$P_PFRAME is used to program the active programmable frame.								
The programmable frame is retained on a Reset when the following setting is configured:								
\$MC_PFRAME_RESET_MODE = 1								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				channel-specific
block search				link				No restrictions
Not classified								
No restrictions								

Channel-specific system variables

FRAME	\$P_ACTFRAME					Active overall frame	reference:	
description:								
The variable \$P_ACTFRAME determines the active chained total frame. The active total frame is calculated using the following formula:								
$\$P_ACTFRAME = \$P_PARTFRAME : \$P_SETFRAME : \$P_EXTFRAME : \$P_ISO1FRAME :$ $\$P_ISO2FRAME : \$P_ISO3FRAME : \$P_ACTBFRAME : \$P_IFRAME : \$P_TOOLFRAME : \$P_WPFRAME :$ $\$P_TRAFRAME : \$P_PFRAME : \$P_ISO4FRAME : \$P_CYCFRAME$								
The total frame is recalculated each time a frame belonging to the frame chain is activated and upon a reset.								
unit:								
min.:		max.:		std:				
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:			Valuation:			channel-specific		
block search		Not classified			link		No restrictions	
INT	\$P_UIFRNUM					Number of active settable frames	reference:	
description:								
Variable \$P_UIFRNUM is used to determine the number of the active settable frame. A settable data management frame \$P_UIFR[n] becomes the active settable frame on execution of G500, G54 to G599.								
G500: \$P_UIFRNUM = 0								
G54: \$P_UIFRNUM = 1								
G599: \$P_UIFRNUM = 99								
On a Reset, the activation of the settable frame depends on the following machine data:								
Bit0 in \$MC_RESET_MODE_MASK								
\$MC_GCODE_RESET_MODE[7]								
\$MC_GCODE_RESET_VALUES[7]								
unit:								
min.:		max.:		std:				
0		99		0				
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:			Valuation:			channel-specific		
block search		Not classified			link		No restrictions	

Channel-specific system variables

INT	\$P_NCBFRMASK		Global basic frame mask			reference:	
description:							
Variable \$P_NCBFRMASK is used to define the NCU-global basic frame included in the calculation of the overall basic frame \$P_ACTBFRAME. The variable is implemented in the form of a bit mask in which the global basic frames can be selected. On a Reset, the mask is initialized by \$MN_NCBFRAME_RESET_MASK.							
unit:							
min.: 0 max.: 0xFFFF std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$P_CHBFRMASK		Basic frame mask in the channel			reference:	
description:							
Variable \$P_CHBFRMASK is used to define the channel-specific basic frame included in the calculation of the overall basic frame \$P_ACTBFRAME. The variable is implemented in the form of a bit mask in which the basic frames can be selected. On a Reset, the mask is initialized by \$MC_CHBFRAME_RESET_MASK.							
unit:							
min.: 0 max.: 0xFFFF std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$P_CHSFRMASK		System frame mask			reference:	
description:							
Variable \$P_CHSFRMASK is used to define the channel-specific system frame included in the calculation of the overall frame \$P_ACTFRAME. The variable is implemented in the form of a bit mask in which the system frames can be selected. On a Reset, the mask is initialized by \$MC_CHSFRAME_RESET_MASK.							
unit:							
min.: 0 max.: 0X/FF std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Channel-specific system variables

DOUBLE	\$P_AD [34]			Active tool offsets	reference:	
description:						
\$P_AD[n]						
Active tool offsets						
n: Parameter numbers 1 - 34						
n = 1-25 \$TC_DP1 to \$TC_DP25						
n = 26 \$TC_DPCE						
n = 27 \$TC_DPH						
n = 28 \$TC_DPV						
n = 29 \$TC_DPV3						
n = 30 \$TC_DPV4						
n = 31 \$TC_DPV5						
n = 32 \$TC_DPVN3						
n = 33 \$TC_DPVN4						
n = 34 \$TC_DPVN5						
n = 35 \$TC_DPNT						
An alarm is issued if a compensation parameter belongs to a function that is not active.						
index 1:	numbers 1 - 31			n = 1-25 \$TC_DP1 to \$TC_DP25	n = 26 \$TC_DPCE	n = 27 \$TC_DPH
				n = 28 \$TC_DPV	n = 29 \$TC_DPV3	n = 30 \$TC_DPV4
				n = 31 \$TC_DPV5	n = 32 \$TC_DPVN3	n = 33 \$TC_DPVN4
				n = 34 \$TC_DPVN5	n = 35 \$TC_DPNT	
unit:						
min.:	-1,8E308		max.:	1,8E308		std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

Channel-specific system variables

DOUBLE	\$P_ADT [34]						Active tool offsets transformed	reference:	
description:									
\$P_AD[n]									
Active tool offsets transformed									
n: Parameter numbers 1 - 34									
n = 1-25 \$TC_DP1 to \$TC_DP25									
n = 26 \$TC_DPCE									
n = 27 \$TC_DPH									
n = 28 \$TC_DPV									
n = 29 \$TC_DPV3									
n = 30 \$TC_DPV4									
n = 31 \$TC_DPV5									
n = 32 \$TC_DPVN3									
n = 33 \$TC_DPVN4									
n = 34 \$TC_DPVN5									
An alarm is issued if a compensation parameter belongs to a function that is not active.									
Index 1:			n: Parameter numbers 1 - 31			n = 1-			
25 \$TC_DP1 to \$TC_DP25			n = 26 \$TC_DPCE			n = 27 \$TC_DPH			
\$TC_DPV			n = 28 \$TC_DPV3			n = 29 \$TC_DPV4			
			n = 30 \$TC_DPV5			n = 31 \$TC_DPV5			
unit:									
-									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:						Valuation:			
						channel-specific			
block search		Program sensitive				link		No restrictions	
INT	\$P_DLNO							reference:	
description:									
\$P_DLNO									
Active additive offset number DL=0 - DL='max.': 'max' = value of									
\$MN_MM_MAX_SUMCORR_PER_CUTTEDGE									
unit:									
-									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:			
						channel-specific			
block search		Not classified				link		No restrictions	

Channel-specific system variables

INT	\$P_TOOL						reference:	
description:								
\$P_TOOL								
Active tool cutting edge D0 - D'max.'; 'max'= value of \$MN_MM_MAX_CUTTING_EDGE_NO								
unit:								
min.:		2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified			link		No restrictions	
INT	\$P_TOOLNO						reference:	
description:								
\$P_TOOLNO								
Active tool number T0 - T32000; T can be an 8-digit number when 'flat D number' function is active								
This command should not generally be used when magazine management is active.								
When magazine management is active, GETEXET should be used instead.								
(T number programming always works reliably when \$MC_CUTTING_EDGE_DEFAULT=-1, or > 0.								
In cases where \$MC_CUTTING_EDGE_DEFAULT=0, or =-2, T number read errors can occur.								
The T number mechanism is also reliable if it is programmed after D > 0.								
Notice: Particularly with a setting of \$MC_CUTTING_EDGE_DEFAULT=-2, \$P_TOOLNO (the T no. of the active tool with which the currently								
active D offset has been calculated) and GETEXET (the changed tool) can return different T numbers.								
->see also \$P_MTHSDC and the documentation relating to the subject of multiple toolholders/spindles.								
unit:								
min.:		0		max.:		32000		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified			link		No restrictions	

Channel-specific system variables

INT	\$P_TOOLP						reference:	
description:								
\$P_TOOLP								
Last programmed tool number T0 - T32000 (in operation without magazine management).								
This command cannot be used when magazine management is active.								
When magazine management is active, GETSELT must be used instead.								
If the function 'T alarm delay after M06' is active, the								
result T number = -1 if the preceding T address has been programmed incorrectly.								
unit:								
-								
min.: 0 max.: 32000 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search				link		No restrictions		
Program sensitive								
DOUBLE	\$P_TOOLL [3]						reference:	
description:								
\$P_TOOLL[n]								
Active tool total length								
Index 1: n: Length 1 - 3								
unit: mm								
min.: -1,8E308 max.: 1,8E308 std: 0.0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search				link		No restrictions		
Not classified								
DOUBLE	\$P_TOOLO [3]						reference:	
description:								
\$P_TOOLO[n]								
Active tool orientation								
Index 1: n: Components 1 - 3								
unit: -								
min.: -1,8E308 max.: 1,8E308 std: 0.0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search				link		No restrictions		
Not classified								

Channel-specific system variables

DOUBLE	\$AC_TOOLO_ACT [3]		Active setpoint orientation			reference:	
description:							
\$AC_TOOLO_ACT[n]							
Active command orientation							
Index 1:		n: Components 1 - 3					
unit:							
min.:		-1.0		max.:		1.0	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
DOUBLE	\$AC_TOOLO_END [3]		Final orientation of the active block			reference:	
description:							
\$AC_TOOLO_END[n]							
End orientation of active block							
Index 1:		n: Components 1 - 3					
unit:							
min.:		-1.0		max.:		1.0	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
DOUBLE	\$AC_TOOLO_DIFF		Remaining angle to the orientation in the active block			reference:	
description:							
\$AC_TOOLO_DIFF							
Remaining angle of tool orientation in active block							
unit:		deg.					
min.:		0.0		max.:		360.0	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Channel-specific system variables

DOUBLE	\$VC_TOOLO [3]		Actual orientation			reference:	
description:							
\$VC_TOOLO[n]							
Actual orientation							
index 1:		n: Components 1 - 3					
unit:							
min.:		-1.0		max.:		1.0	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
DOUBLE	\$VC_TOOLO_DIFF		Angle between set and actual orientation			reference:	
description:							
\$VC_TOOLO_DIFF							
Angle between command and actual orientation							
unit:		deg.					
min.:		0.0		max.:		180.0	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$VC_TOOLO_STAT		Status of the calculation of the actual orientation			reference:	
description:							
\$VC_TOOLO_STAT							
Status of calculation of actual orientation							
unit:							
min.:		-1		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Channel-specific system variables

INT	\$P_TC		Active toolholder			reference:	
description:							
\$P_TC							
Active toolholder							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions
INT	\$AC_TC		Active tool carrier			reference:	
description:							
\$AC_TC							
Active toolholder							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions
INT	\$P_TCNUM		Number of tool carriers available in the channel			reference:	
description:							
\$P_TCNUM							
Number of available toolholders in the channel							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

Channel-specific system variables

DOUBLE	\$P_TCANG [2]		Active angle of a tool carrier axis			reference:	
description:							
\$P_TCANG[n]							
Active angle of a toolholder axis							
index 1:		n: Angle 1 - 2					
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				valuation:		channel-specific	
block search		Not classified			link		No restrictions
DOUBLE	\$P_TCDIFF [2]		Angle difference with Hirth teeth			reference:	
description:							
\$P_TCDIFF[n]							
Difference between calculated and used angle of a toolholder axis with angle incrementation (Hirth tooth system)							
index 1:		n: Angle 1 - 2					
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$P_TCSOL		Solution number for tool carrier			reference:	
description:							
\$P_TCSOL							
Number of solutions when the angle of the axis of rotation of an orientable tool carrier is defined from a frame In the case of 0 to 2 solutions, the relevant value is returned. The return value is 3 when the number of solutions is infinite. If the angles are specified (TCOABS), the number of solutions is always 1.							
unit:							
min.:		-2147483648	max.:		3	std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				valuation:		channel-specific	
block search		Not classified			link		No restrictions

Channel-specific system variables

INT	\$P_TCSTAT					Status of an orientable tool carrier.	reference:	
description:								
\$P_TCSTAT								
Specifies the status of an orientatable toolholder.								
The variable is bit-coded with the following bit meanings:								
0x1 The first axis of rotation exists								
0x2 The second axis of rotation exists								
0x4 The angles used in the calculation are acquired from an orientation in the frame direction								
0x8 The angles used in the calculation have been specified absolutely								
0x10 The polar axis angle is uncertain with the toolholder orientated in the frame direction								
0x1000 Only the tool is rotatable (kinematic type T)								
0x2000 Only the workpiece is rotatable (kinematic type P)								
0x4000 Tool and workpiece are rotatable (kinematic type M)								
The bits specified here are not currently assigned.								
unit:								
-								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$P_TOOLR					Active tool radius	reference:	
description:								
\$P_TOOLR								
Active tool radius (total)								
unit:								
mm								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
INT	\$P_TOOLND [32000]					Number of edges of tool t	reference:	
description:								
\$P_TOOLND[t]								
Number of tool edges of tool t								

Channel-specific system variables

Index 1:	t: T number 1 - 32000					
unit:						
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
BOOL	\$P_TOOLEXIST [32000]			Tool exists with T no. t		reference:
description:						
\$P_TOOLEXIST[t]						
Does the tool with T no. t exist						
Index 1:	t: T number 1 - 32000					
unit:						
min.:	FALSE	max.:	TRUE	std:	FALSE	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
INT	\$P_D			Programmed D number (ISO2.1 mode)		reference:
description:						
\$P_D						
Programmed D number in ISO_2.1 language mode						
The D number is the tool offset number in ISO mode 2.1 (milling). If no tool offset is active, the value 0 is output.						
The tool offset can be selected with D or H. However, this variable only ever contains the D value.						
unit:						
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

Channel-specific system variables

INT	\$P_H						Programmed H number (ISO2.1 milling)	reference:	
description:									
\$P_H									
Programmed H number in ISO_2.1 language mode									
The H number is the tool offset number in ISO mode 2.1 (milling). If no tool offset is active, the value 0 is output.									
The tool offset can be selected with D or H. However, this variable only ever contains the H value.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		channel-specific			
block search				Program sensitive		link		No restrictions	
INT	\$A_TOOLMN [32000]						-	reference:	
description:									
\$A_TOOLMN[t]									
Magazine number of tool t									
Index 1: t: T number 1 - 32000									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		channel-specific			
block search				Not classified		link		No restrictions	
INT	\$A_TOOLMLN [32000]						-	reference:	
description:									
\$A_TOOLMLN[t]									
Magazine location number of tool t									
Index 1: t: T number 1 - 32000									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		channel-specific			
block search				Not classified		link		No restrictions	

Channel-specific system variables

INT	\$A_MYMN [32000]						reference:
description:							
\$A_MYMN[t]							
Number of home magazine of tool with T no. t.							
(A magazine becomes the home magazine of the tool if the tool is being loaded onto a magazine location of kind 1 (\$TC_MPP1=1).)							
Resulting value = 0 = tool is not loaded (if \$A_TOOLMN > 0, then manual tool).							
Resulting value = -1 = tool management is not active							
Resulting value = -2 = tool with T no. t does not exist.							
Index 1: t: T number 1 - 32000							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search Not classified				link No restrictions			
INT	\$A_MYMLN [32000]						reference:
description:							
\$A_MYMLN[t]							
Number of the home magazine location of the tool with T no. t.							
(A magazine location becomes the home magazine location of a tool if the tool is being loaded onto a magazine location of							
kind 1 (\$TC_MPP1=1).)							
Resulting value = 0 = tool is not loaded (if \$A_TOOLMLN > 0, then manual tool).							
Resulting value = -1 = tool management is not active							
Resulting value = -2 = tool with T no. t does not exist.							
Index 1: t: T number 1 - 32000							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search Not classified				link No restrictions			

Channel-specific system variables

DOUBLE	\$A_MONIFACT						reference:	
description:								
\$A_MONIFACT								
Factor for tool life monitoring								
unit:								
min.: -1,8E308 max.: 1,8E308 std: 0.0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	7	X	7	X		
write:	runin stp	X	7	-	0	X		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	
INT	\$P_TOOLNG						reference:	
description:								
\$P_TOOLNG								
Number of defined tool groups assigned to the channel								
OPI block type= TM								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	
INT	\$P_TOOLNT						reference:	
description:								
\$P_TOOLNT								
Number of defined tools assigned to the channel								
OPI block type= TV								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	

Channel-specific system variables

INT	\$P_TOOLT [600]			Tool number	reference:	
description:						
\$P_TOOLT[i]						
with tool number T						
OPI block type= TV						
Index 1:	i = 1, ..., \$P_TOOLTNT					
unit:						
min.:	-2147483648		max.:	2147483647		std:
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$P_TOOLD [32000,12]			D no. of tool T	reference:	
description:						
\$P_TOOLD[t,i]						
with D no. of tool with T no. t; i=1,2...						
If t is the value of an undefined tool, -2 is returned						
If i is a value outside the permissible range, 0 is returned						
OPI block type= TO						
Index 1:	t = 1, ..., 32000					
Index 2:	i = 1, ..., \$P_TOOLDNT					
unit:						
min.:	-2147483648		max.:	2147483647		std:
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Channel-specific system variables

INT	\$P_USEKT			Tool selection screen		reference:	
description:							
\$P_USEKT (= USE Kind of Tool)							
Is a bit-coded value							
All tools whose parameter \$TC_TP11 has set one of the bits of \$P_USEKT are available for the following tool changes. The value 'zero' has the equivalent content of 'all bits are set'							
OPI block= C/S							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

INT	\$P_TOOLNDL [32000,32000]			Number of DL offsets		reference:	
description:							
\$P_TOOLNDL[t,d]							
Number of DL offsets of D offset specified by T no. t and D no. d							
>0 Number of DL offsets							
0No DL offset for this D offset							
-1Additive offset function not active							
-2t is the value of an undefined tool							
-3 d is the value of an undefined D offset							
OPI block type= TOS; TOE							
Index 1: t = 1, ..., 32000							
Index 2: d = 1,....., 32000							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Channel-specific system variables

INT	\$P_MAGN	Number of defined magazines					reference:
description:							
\$P_MAGN							
Number of defined magazines assigned to the channel.							
> 0 Successful read access							
0 No magazine defined							
-1 WZMG is not active							
OPI block= TM							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:			Valuation: channel-specific				
block search			Not classified		link No restrictions		
INT	\$P_MAG [32]	Magazine number					reference:
description:							
\$P_MAG [i]							
ith magazine number							
> 0 Successful read access							
0i is outside the permissible range							
-1 WZMG is not active							
OPI block= TM							
index 1: i= 1,..., \$P_MAGN							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:			Valuation: channel-specific				
block search			Not classified		link No restrictions		

Channel-specific system variables

INT	\$P_MAGNDIS [32000,32000]			Number of magazines connected to the internal magazine	reference:	
description:						
P_MAGNDIS[n, m]						
Number of magazines connected to location m of internal magazine n.						
> 0 Successful read access						
0 No magazine is connected to the buffer location						
-1 WZMG is not active						
-2 n is not the number of an internal magazine						
-3 m is not the number of an internal magazine location						
OPI block TPM						
Index 1:		n= must be the number of the buffer magazine or load magazine				
Index 2:		m= 1,..., max. number of a location in the specified internal magazine				
unit:		-				
min.:		2147483648	max.:		2147483647	std: 0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions
INT	\$P_MAGDISS [32000,32]			Number of the magazine connected to the buffer	reference:	
description:						
P_MAGDISS[l, i]						
Number of ith magazine connected to location l of the buffer magazine.						
> 0 Successful read access						
0 i is outside the permissible range						
-1 WZMG is not active						
-2 m is not the number of a buffer magazine location						
-3 no buffer magazine defined						
OPI block TPM						
Index 1:		l= 1,..., max. number of a location in the buffer magazine				
Index 2:		i= 1,..., \$P_MAGNDIS[no. of buffer magazine, refLoc]				
unit:		-				
min.:		2147483648	max.:		2147483647	std: 0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions

Channel-specific system variables

INT	\$P_MAGDISL [32000,32]			Number of the magazine connected to the loading magazine		reference:	
description:							
P_MAGDISL[i, i]							
Number of ith magazine connected to location I of the load magazine.							
> 0 Successful read access							
0i is outside the permissible range							
-1WZMG is not active							
-2m is not the number of a load magazine location							
-3 no load magazine defined							
OPI block TPM							
index 1:		I= 1,..., max. number of a location in the load magazine					
index 2:		I= 1,..., \$P_MAGNDIS[no. of load magazine, refLoc]					
unit:							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		No restrictions	
INT	\$P_MAGNS			Number of spindle locations / toolholder locations in the buffer		reference:	
description:							
\$P_MAGNS							
Number of spindle locations / toolholder locations in the buffer assigned to the channel.							
> 0 Successful read access							
0 No spindle locations defined							
-1WZMG is not active							
-3 No buffer magazine defined							
unit:							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		No restrictions	

Channel-specific system variables

INT	\$P_MAGS [20]		Number of the spindle / toolholder in the buffer		reference:	
description:						
\$P_MAGS[n]						
nth number of spindle / of toolholder in buffer						
> 0 Successful read access						
0 n is outside the permissible range						
-1 WZMG is not active						
-3 No buffer magazine defined						
index 1:		n= 1, ..., max. toolholder number				
unit:						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:			valuation: channel-specific			
block search		Not classified			link No restrictions	
INT	\$P_MAGNREL [20]		Number of buffers assigned		reference:	
description:						
\$P_MAGNREL[n]						
Number of buffers assigned to the spindle number / toolholder number n						
> 0 Successful read access						
0 No buffer location assigned to spindle location						
-1 WZMG is not active						
-2 n is not the number of a spindle location						
-3 No buffer magazine defined						
index 1:		n= 1, ..., max. toolholder number				
unit:						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:			valuation: channel-specific			
block search		Not classified			link No restrictions	

Channel-specific system variables

INT	\$P_MAGREL [20,600]			Buffer number	reference:	
description:						
P_MAGREL[n, m] mth buffer number of nth spindle number / toolholder number > 0 Successful read access 0m is outside the permissible range -1WZMG is not active -2n is not the number of a spindle location -3No buffer magazine defined						
Index 1:		n= 1,..., max. toolholder number				
Index 2:		m= 1,..., \$P_MAGNREL				
unit:		-				
min.:		-2147483648	max.:		2147483647	std:
						0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:					Valuation: channel-specific	
block search		Not classified			link No restrictions	
INT	\$P_MAGNH			Number of defined magazine location type hierarchies	reference:	
description:						
\$P_MAGNH Number of defined magazine location type hierarchies assigned to the channel. > 0 Successful read access 0No location type hierarchies are defined -1WZMG is not active OPI block= TT						
unit:		-				
min.:		-2147483648	max.:		2147483647	std:
						0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:					Valuation: channel-specific	
block search		Not classified			link No restrictions	

Channel-specific system variables

INT	\$P_MAGNHLT [32]			Number of defined location types	reference:	
description:						
\$P_MAGNHLT[n]						
Number of defined location types in the nth defined hierarchy						
> 0 Successful read access						
0n is outside the defined range						
-1 Function 'Location type hierarchy' or TMMG is not active						
OPI block= TT						
Index 1:		n= 1,..., \$P_MAGNH				
unit:						
min.:		-2147483648	max.:		2147483647	std:
		0				
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				valuation:		
				channel-specific		
block search		Not classified			link	
					No restrictions	
INT	\$P_MAGHLT [32,32]			Location type of the hierarchy	reference:	
description:						
\$P_MAGHLT[n, m]						
nth location type of hierarchy n; n= 1,..., \$P_MAGNH; m= 1,..., \$P_MAGNHLT						
> 0 Successful read access						
0m is outside the defined range						
-1 Function 'Location type hierarchy' or TMMG is not active						
-2 Hierarchy n has no defined location types						
OPI block= TT						
Index 1:		n= 1,..., \$P_MAGNH				
Index 2:		m= 1,..., \$P_MAGNHLT				
unit:						
min.:		-2147483648	max.:		2147483647	std:
		0				
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				valuation:		
				channel-specific		
block search		Not classified			link	
					No restrictions	

Channel-specific system variables

INT	\$P_MAGNA			Number of defined adapters		reference:	
description:							
\$P_MAGNA							
Number of defined adapters assigned to the channel.							
> 0 Successful read access							
0 No adapters defined							
-1 'Adapter' function or TMMG is not active							
OPI block= AD							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		No restrictions	

INT	\$P_MAGA [600]			Adapter number		reference:	
description:							
\$P_MAGA[i]							
ith adapter number							
> 0 Successful read access							
0i is outside the permissible range							
-1 'Adapter' function or TMMG is not active							
OPI block= AD							
index 1:							
i= 1,..., \$P_MAGNA							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		No restrictions	

Channel-specific system variables

INT	\$P_MTHSDC						Master spindle/toolholder for tool offset	reference:	
description:									
\$P_MTHSDC									
Master toolholder no. or master spindle no. with reference to which the active tool is determined for the next D offset selection.									
>0 Successful read access									
0 No master toolholder or master spindle available.									
The next D offset works with T0.									
-1 TMMG not available.									
If read as an OPI variable, this is valid for the status in the current main run block									
unit:									
-									
min.:			-1		max.:		20		
std:			0						
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link No restrictions			
DOUBLE	\$AC_MONMIN							reference:	
description:									
\$AC_MONMIN									
Relation between tool monitoring actual value and setpoint.									
Threshold for tool search strategy "Load only tools with an actual value higher than threshold"									
unit:									
-									
min.:			-1,8E308		max.:		1,8E308		
std:			0.0						
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	run in stp	X	/	-	0	X			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link No restrictions			
INT	\$P_VDITCP [3]							reference:	
description:									
\$P_VDITCP[n]									
Free parameters for tool management in VDI interface									
Index 1:			n: Index 1 - 3						
unit:									
-									
min.:			-2147483648		max.:		2147483647		
std:			0						
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link No restrictions			

Channel-specific system variables

DOUBLE	\$P_ATPG [9]		Current tool-related grinding data				reference:	
description:								
\$P_ATPG[n] Current tool-related grinding data								
Index 1: n: Parameter numbers 1 -9								
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
STRING	\$P_TOOLENV [1]		Name of a tool environment				reference:	
description:								
\$P_TOOLENV[i] Supplies the name of the tool environment stored under the (internal) index i. If i does not refer to a defined data block, a zero string is returned. If index i is invalid, i.e. less than 1 or greater than the maximum number of data blocks for tool environments (\$MN_MM_NUM_TOOLENV), an alarm is generated.								
Index 1: A maximum number of tool environments can be configured via MD \$MN_MM_NUM_TOOLENV.								
Index 3: max. string length								
unit:								
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
INT	\$P_TOOLENVN		Number of tool environments available				reference:	
description:								
\$P_TOOLENVN Specifies the number of defined data blocks for defining tool environments.								
unit:								
min.:		-2147483648	max.:		2147483647	std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Channel-specific system variables

DOUBLE	\$P_AP		Angle with polar coordinates			reference:	
description:							
\$P_AP Programmed angle with polar coordinates in degrees							
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search			Not classified		link	No restrictions	
AXIS	\$P_AXN1		Axis identifier for the abscissa			reference:	
description:							
Variable \$P_AXN1 supplies the current address of the geometry axis for the abscissa.							
unit:							
min.:				max.:			
				std:		GEOAXISNUM	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search			Not classified		link	Not classified	
AXIS	\$P_AXN2		Axis identifier for the ordinate			reference:	
description:							
Variable \$P_AXN2 supplies the current address of the geometry axis for the ordinate.							
unit:							
min.:				max.:			
				std:		GEOAXISNUM	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search			Not classified		link	Not classified	

Channel-specific system variables

AXIS	\$P_AXN3		Axis identifier for the applicate			reference:	
description:							
Variable \$P_AXN3 supplies the current address of the geometry axis for the applicate.							
unit:							
min.:		max.:		std:		GEOAXISNUM	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search			Not classified			link	
						Not classified	
AXIS	\$P_ACTGEOAX [3]		Current geometry axis identifier			reference:	
description:							
Variable \$P_ACTGEOAX[n] supplies the current geometry axis identifier depending on the plane.							
The geometry axis assignment corresponds to the programmed GEOAX(1,X,2,Y,3,Z) values. The assignment can also change on a Reset and on selection and deselection of transformations.							
Index 1:		Array index 1-3 for 1st - 3rd geometry axis					
unit:							
min.:		max.:		std:		GEOAXISNUM	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search			Not classified			link	
						Not classified	
INT	\$P_GG [61]		Active G function			reference:	
description:							
\$P_GG[n]							
Read active G function of G function group n The index of the G function is supplied as described in the Programming Guide Fundamentals, Section "List of G functions/preparatory functions".							
(This also matches the index output at the PLC interface when configured accordingly)							
Example:							
;Check for G55							
IF \$P_GG[8] == 3 GOTOF LABEL_G55							
Index 1:		n: Number of G function group					
unit:							
min.:		max.:		std:		0	
0		2147483647					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search			Not classified			link	
						Not classified	

Channel-specific system variables

INT	\$P_EXTGG [31]			Active G function with external language	reference:	
description:						
\$P_EXTGG[n]						
Read active G function of G function group n of external language. The index of the G function is supplied as described in the Function Description "ISO Dialects" Section "G commands".						
(This also matches the index output at the PLC interface when configured accordingly)						
Example:						
;Check for G55 in ISO Dialect T						
IF \$P_EXTGG[14] == 2 GOTOF LABEL_G55						
Index 1: n: Number of G function group						
unit: -						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified
INT	\$A_GG [61]			Active G function in synchronized action	reference:	
description:						
\$A_GG[n]						
Read active G function of G function group n in synchronized action The index of the G function is supplied as described in the Programming Guide Fundamentals, Section "List of G functions/preparatory functions".						
(This also matches the index output at the PLC interface when configured accordingly)						
Example:						
;Check for G55 in synchronized action						
WHEN \$A_GG[8] == 3 DO ...						
Index 1: n: Number of G function group						
unit: -						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified

Channel-specific system variables

BOOL	\$P_SEARCH						Search run active	reference:	
description:									
\$P_SEARCH									
Returns TRUE (1) if block search is active									
unit:									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search			Not classified		link		Not classified		
BOOL	\$P_SEARCH1						Search with calculation active	reference:	
description:									
\$P_SEARCH1									
Returns TRUE (1) if block search with calculation is active.									
unit:									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search			Not classified		link		Not classified		
BOOL	\$P_SEARCH2						Block search without calculation was active	reference:	
description:									
\$P_SEARCH2									
Returns TRUE (1) if last selected search type was "block search without calculation".									
unit:									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search			Not classified		link		Not classified		

Channel-specific system variables

INT	\$P_SEARCHL	Last active search type					reference:	
description:								
\$P_SEARCHL								
supplies the last selected search type:								
(coding analogous to PI service _N_FINDBL)								
0 : No search								
1 : Search without calculation								
2 : Search with calculation on contour								
3 : Reserved								
4 : Search with calculation at end of block								
5 : Search in extended program test								
unit:								
-								
min.:		0		max.:		5		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		Not classified	
BOOL	\$P_SUBPAR [n]	Parameter programmed					reference:	
description:								
\$P_SUBPAR[n]								
Interrogate whether parameter n was actually programmed (TRUE) on subroutine call with parameter transfer, or whether the system has applied a default parameter (FALSE).								
index 1:		n: Parameter numbers 1 to n according to definition in PROC instruction						
unit:								
-								
min.:		FALSE		max.:		TRUE		
				std:		FALSE		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		Not classified	
BOOL	\$P_CTABDEF	Curve table is defined					reference:	
description:								
Variable \$P_CTABDEF determines whether a curve table definition is active.								
unit:								
-								
min.:		FALSE		max.:		TRUE		
				std:		FALSE		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		Not classified	

Channel-specific system variables

BOOL	\$P_IPTRLOCK						reference:	
description:								
\$P_IPTRLOCK								
Status of disable for updating the interruption pointer (OPI block InterruptionSearch)								
due to part program command IPTRLOCK/IPTRUNLOCK or machine data \$MC_AUTO_IPTR_LOCK:								
FALSE (0) -> interruption pointer is updated when interruption occurs								
TRUE (1) -> the halt block is stored in the interruption pointer								
unit:								
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		Not classified		
BOOL	\$P_DELAYFST						reference:	
description:								
\$P_DELAYFST								
Interrogation whether delay stop area is active or not depending on part program command DELAYFSTON/DELAYFSTOF.								
Note:								
Delay stop areas defined by G331/G332 can be interrogated only by a synchronized action								
due to the restriction to motion blocks and dwell times								
(see \$AC_DELAYFST).								
FALSE (0) -> Delay stop area is not active								
TRUE (1) -> Delay stop area is active								
unit:								
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		Not classified		

Channel-specific system variables

BOOL	\$AC_DELAYFST						reference:	
description: \$AC_DELAYFST Interrogation in synchronized actions whether delay stop area is active or not due to part program command DELAYFSTON/DELAYFSTOF or G331/G332. Note: If \$AC_DELAYFST is used outside synchronized actions in the part program, then, analogous to \$P_DELAYFST, the delay stop areas defined with G331/G332 cannot be interrogated owing to the restriction to motion blocks and dwell times (see \$P_DELAYFST). FALSE (0) -> Delay stop area is not active TRUE (1) -> Delay stop area is active								
unit:								
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:			channel-specific	
block search		Not classified			link		Not classified	
INT	\$P_MC						reference:	
description: \$P_MC Status of modal subroutine call FALSE (0) -> no modal subroutine call TRUE (1) -> modal subroutine call active								
unit:								
min.:		FALSE		max.:		TRUE		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:			channel-specific	
block search		Not classified			link		Not classified	

Channel-specific system variables

INT	\$P_REPINF			Repositioning possible			reference:	
description:								
\$P_REPINF								
Status info for repositioning with REPOS command								
FALSE (0) -> Axis cannot be repositioned with REPOS command for following reasons								
- Call is not issued in an Asub								
- Call is issued by an Asub that has been started in the Reset state								
- Call is issued by an Asub that has been started in JOG mode								
TRUE (1) -> Axis can be repositioned with REPOS								
unit:								
min.: FALSE max.: TRUE std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:			Valuation:			channel-specific		
block search			Not classified			link		Not classified
BOOL	\$P_SIM			HMI simulation active			reference:	
description:								
\$P_SIM								
Returns TRUE (1) if HMI simulation is running								
unit:								
min.: FALSE max.: TRUE std: FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:			Valuation:			channel-specific		
block search			Not classified			link		Not classified
BOOL	\$P_DRYRUN			Dry run feed selected			reference:	
description:								
\$P_DRYRUN								
Returns TRUE (1) if dry run feed is selected, or else FALSE (0).								
unit:								
min.: FALSE max.: TRUE std: FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:			Valuation:			channel-specific		
block search			Not classified			link		Not classified

Channel-specific system variables

DOUBLE	\$P_OFFN			Programmed contour offset			reference:	
description:								
\$P_OFFN Programmed contour offset								
unit:								
min.: -1,8E308 max.: 1,8E308 std: 0.0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:						Valuation: channel-specific		
block search			Not classified			link Not classified		
DOUBLE	\$PI			Circle constant			reference:	
description:								
Variable \$PI determines the circle constant PI = 3.1415927.								
unit:								
min.: 3.1415927 max.: 3.1415927 std: 0.0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:						Valuation: channel-specific		
block search			Independent			link No restrictions		
INT	\$P_PROG_EVENT			Event-driven program call active			reference:	
description:								
System variable \$P_PROG_EVENT can be used to query whether the program has been activated implicitly by an event configured with \$MC_PROG_EVENT_MASK or \$MN_SEARCH_RUN_MODE. \$P_PROG_EVENT supplies an integer value between 0 and 6 with the following meaning: 0:Explicit activation by NC Start or Asub Start via VDI or Asub interface 1: Implicit activation by "Part program start" event 2:Implicit activation by "Part program end" event 3:Implicit activation by "Operator panel reset" event 4:Implicit activation by "Boot" event 5:Implicit activation after output of last action block following block search 6:Implicit activation of / _N_CST_DIR/_N_SAFE_SPF by "Boot" event (Power-on Safety Event)								
unit:								
min.: 0 max.: 6 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:						Valuation: channel-specific		
block search			Not classified			link Not classified		

Channel-specific system variables

STRING	\$P_PROGPATH						Path of the current program	reference:	
description:									
\$P_PROGPATH									
Supplies the path where the program currently being processed is stored in the file system.									
Example:									
Subprogram "/_N_WKS_DIR/_N_WELLE_DIR/_N_MYSUB_SPF" is running.									
\$P_PROGPATH returns the string "/_N_WKS_DIR/_N_WELLE_DIR/".									
Index 3:		max. string length							
unit:									
min.:		max.:		std:			""		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search		Not classified				link		Not classified	
STRING	\$P_PROG [18]						Program name of a program level	reference:	
description:									
\$P_PROG[n]									
Supplies the name of the program on program level n.									
Example:									
\$P_PROG[0]									
Supplies the name of the program on program level 0 = main program name.									
Index 1:		n: Defines the program level from which the program name is to be read.							
		Numerical value: 0 to 11							
Index 3:		max. string length							
unit:									
min.:		max.:		std:			""		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search		Not classified				link		Not classified	
INT	\$P_STACK						Current program level	reference:	

Channel-specific system variables

description:							
\$P_STACK							
Supplies the program level on which the current part program is running.							
unit:							
min.:		0		max.:		11	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
INT	\$P_ISO_STACK			Current program level in ISO mode			reference:
description:							
\$P_ISO_STACK							
The variable supplies the current program level in ISO mode. Unlike Siemens mode, not every subprogram or macro call changes the program level in ISO mode.							
Subprogram/macro calls and their effect on \$P_ISO_STACK:							
M98 Pxx ,subprogram call\$P_ISO_STACK remains the same							
G65 Pxx ,non-modal macro\$P_ISO_STACK is incremented							
G66 Pxx ,modal macro\$P_ISO_STACK is incremented							
M macro substitution\$P_ISO_STACK is incremented							
M subprogram substitution\$P_ISO_STACK remains the same							
T substitution\$P_ISO_STACK remains the same							
G substitution\$P_ISO_STACK is incremented							
802S/C:Value range = [0,5]							
unit:							
min.:		-2147483648		max.:		11	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			

Channel-specific system variables

STRING	\$P_PATH [18]						Path of a program level	reference:	
description:									
\$P_PATH[n]									
Supplies the path where the program being processed on program level n is stored in the file system.									
Examples:									
\$P_PATH[0] supplies the directory of the main program, e.g. "/_N_WKS_DIR/_N_WELLE_WPD/".									
\$P_PATH[\$P_STACK - 1] supplies the path of the calling program.									
Index 1: n: Defines the program level from which the program path is to be read.									
Numerical value: 0 to 11									
Index 3: max. string length									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			
BOOL	\$P_ACTID [16]						Modal synchronized action is programmed	reference:	
description:									
Variable \$P_ACTID[n] determines whether the first 16 modal synchronized actions with ID n are programmed.									
Index 1: Index 1 - 16 corresponds to the nth modal synchronized action.									
unit:									
min.: FALSE									
max.: TRUE									
std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			
INT	\$AC_STAT							reference:	
description:									
\$AC_STAT									
-1: Invalid									
0: Channel in Reset state									
1: Channel interrupted									
2: Channel active									
unit:									
min.: -1									
max.: 2									
std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			

Channel-specific system variables

INT	\$AC_PROG						Free synchronized action elements	reference:	
description:									
\$AC_PROG									
-1: Invalid									
0: Program in Reset state									
1: Program stopped									
2: Program active									
3: Program waiting									
4: Program interrupted									
unit:									
min.: -1 max.: 4 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		
INT	\$AC_SYNA_MEM						Free synchronized action elements	reference:	
description:									
Variable \$AC_SYNA_MEM determines the number of free synchronized action elements. The maximum number of elements is configured by \$MC_MM_NUM_SYNC_ELEMENTS.									
The value is read from the part program without a preprocessing stop.									
unit:									
min.: 0 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stop	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		
INT	\$AC_IPO_BUF						Fill level ipo buffer	reference:	
description:									
Variable \$AC_IPO_BUF determines the current fill level of the interpolator buffer.									
The value is read from the part program without a preprocessing stop.									
unit:									
min.: 0 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		

Channel-specific system variables

INT	\$AC_BLOCKTYPE			Block type	reference:	
description:						
Variable \$AC_BLOCKTYPE determines the type of the current main run block.						
The following values are possible:						
0: Block is programmed block (main block).						
1: Block was generated by the system as an intermediate block.						
2: Block was generated by chamfers/rounding						
3: Smooth approach and retraction (SAR)						
4: Block was generated by tool offset						
5: Block was generated by smoothing						
6: Block was generated by TLIFT (tangential follow-up)						
7: Block was generated by path segmentation						
8: Block was generated by compile cycles						
9: Block was generated due to orientation changes on path-relative interpolation of tool orientation (ORIPATH/ORIOTC)						
10: Block was generated by pole treatment of orientation transformations which is activated by the the machine data \$MC_POLE_ORI_MODE						
unit:						
-						
min.: 0						
max.: 9						
std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		Not classified

Channel-specific system variables

INT	\$AC_BLOCKTYPEINFO	Block type info	reference:	
<p>description:</p> <p>System variable \$AC_BLOCKTYPEINFO can be used to interrogate more detailed information about variable \$AC_BLOCKTYPE.</p> <p>Depending on the value of system variable \$AC_BLOCKTYPE, various values can be returned:</p> <ol style="list-style-type: none"> 1. General, internally generated block: \$AC_BLOCKTYPE = 1 \$AC_BLOCKTYPEINFO = 1000 and contains no further information. 2. Chamfer/rounding: \$AC_BLOCKTYPE = 2 2001: Straight 2002: Circle 3. SAR: \$AC_BLOCKTYPE = 3 3001: Approach with straight line 3002: Approach with quadrant 3003: Approach with semicircle 4. Tool compensation: \$AC_BLOCKTYPE = 4 4001: Approach block after STOPRE 4002: Connection blocks if intersection point not found 4003: Point-type circle on inner corners (with TRACYL only) 4004: Bypass circle (or conical cut) at outer corners 4005: Approach blocks with offset suppression 4006: Approach blocks on repeated WRC activation 4007: Block split due to excessive curvature 4008: Compensation blocks with 3D face milling (tool vector area vector) 5. Smoothing: \$AC_BLOCKTYPE = 5 5001: Smoothing contour by means of G641 5002: Smoothing contour by means of G642 5003: Smoothing contour by means of G643 5004: Smoothing contour by means of G644 6. TLIFT: \$AC_BLOCKTYPE = 6 6001: TLIFT block with linear movement of tangential axis and without lift motion. 6002: TLIFT block with nonlinear movement of tangential axis (polynomial) and without lift movement. 6003: TLIFT block with lift motion, tangential axis motion and lift motion start simultaneously. 6004: TLIFT block with lift motion, tangential axis starts first if specific lift position is reached. 7. Path segmentation: \$AC_BLOCKTYPE = 7 7001: Programmed path segmentation without active punching/nibbling 7002: Programmed path segmentation with active punching/nibbling 7003: Automatic, internally generated path segmentation 8. Compile cycles: \$AC_BLOCKTYPE = 8 In this case, system variable \$AC_BLOCKTYPEINFO contains the ID of the compile cycles Application which created the block 				

Channel-specific system variables

9. Path-relative interpolation or tool orientation (ORIPATH/ORIOTC)							
9000: interpolation of tool orientation (ORIPATH)							
9001: interpolation of rotation of tool (ORIOTC)							
10: Pole treatment for orientation transformations							
10000: Look ahead of position of pole axis for orientation transformations							
10001 Inserted block for traversing the pole cone at orientation transformations:							
unit:							
min.:		0		max.:		2147483647	
std:				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			channel-specific
block search		Not classified			link		Not classified
INT	\$AC_SPLITBLOCK						reference:
description:							
System variable \$AC_SPLITBLOCK is capable of detecting all blocks generated internally and programmed blocks which were truncated as a result.							
It can return the following values:							
= 0 : It is an unchanged programmed block (a block generated by the compressor is viewed here as a programmed block).							
<> 0: Block has been truncated or is an internally generated block, the variable can assume the following values (variable is bit-coded):							
= 1: It is an internally generated block or a truncated original block							
= 3: It is the last block in a chain of internally generated blocks or truncated original blocks							
unit:							
min.:		0		max.:		3	
std:				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			channel-specific
block search		Not classified			link		Not classified

Channel-specific system variables

DOUBLE	\$AC_TANEB		Tangent angle at block end point			reference:	
description:							
\$AC_TANEB determines the angle between the path tangent at the end of the current block and the path tangent at the start of the next block. This variable should only be applied to programmed main blocks. \$AC_BLOCKTYPE can be used to determine whether the current block is a main block.							
unit:							
min.:		-180.0		max.:		180.0	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AC_SYNC_ACT_LOAD		Current runtime for synchronized actions			reference:	
description:							
Variable \$AC_SYNC_ACT_LOAD supplies the current runtime for synchronized actions of the last interpolator cycle in the channel.							
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AC_SYNC_MAX_LOAD		Longest runtime for synchronized actions			reference:	
description:							
Variable \$AC_SYNC_MAX_LOAD supplies the longest runtime for synchronized actions of an interpolator cycle in the channel.							
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	X	X	7	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified

Channel-specific system variables

DOUBLE	\$AC_SYNC_AVERAGE_LOAD						Average runtime for synchronized actions	reference:	
description:									
Variable \$AC_SYNC_AVERAGE_LOAD supplies the average runtime per interpolator cycle for synchronized actions in the channel.									
unit:									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	-	0	X			
axis identifier:						Valuation:	channel-specific		
block search			Not classified			link	Not classified		
INT	\$AC_IW_STAT						Position information for PTP	reference:	
description:									
Variable \$AC_IW_STAT describes the position information of the articulated joints (transformation-specific) for cartesian PTP travel. The variable is relevant only for transformations which support PTP.									
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:	channel-specific		
block search			Not classified			link	Not classified		
INT	\$AC_IW_TU						Position information of axes for PTP	reference:	
description:									
Variable \$AC_IW_TU describes the position information of the axes (MCS) for cartesian PTP travel. The variable is relevant only for transformations which support PTP.									
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:	channel-specific		
block search			Not classified			link	Not classified		

Channel-specific system variables

INT	\$AC_TRANS_SYS		Reference system for cart. manual trav. (trans.)			reference:	
description:							
\$AC_TRANS_SYS							
Reference system for translation with cartesian manual travel							
0: Axis-spec. manual trav. active							
1: Cart. manual trav. in BCS							
2: Cart. manual trav. in WCS							
3: Cart. manual trav. in TCS							
Only appropriate in connection with transformations which support cart. manual travel.							
unit:							
min.: 0 max.: 3 std.: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	
INT	\$AC_JOG_COORD		Coordinate system for manual travel			reference:	
description:							
Variable \$AC_JOG_COORD is used to set the coordinate system frame for manual travel.							
The following values are possible:							
0: Manual travel in WCS							
1: Manual travel in SZS							
unit:							
min.: 0 max.: 1 std.: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	X	-	7	X	7	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	

Channel-specific system variables

INT	\$SAC_ROT_SYS			Reference system for cart. manual trav. (ori.)	reference:	
description:						
\$SAC_ROT_SYS						
Reference system for orientation with cartesian manual travel						
0: Axis-spec. manual trav. active						
1: Cart. manual trav. in BCS						
2: Cart. manual trav. in PCS						
3: Cart. manual trav. in TCS						
Only appropriate in connection with transformations which support cart. manual travel.						
unit:						
-						
min.: 0 max.: 3 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search				link		Not classified
Not classified						
INT	\$SAC_MEA [2]			Probe has switched	reference:	
description:						
\$SAC_MEA[n]						
Probe with number [n] has switched if TRUE (1)						
Index 1: n: Number of probe 1 - 2						
unit:						
-						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search				link		Not classified
Not classified						

Channel-specific system variables

INT	\$AC_TRAFO						Active transformation	reference:
description:								
\$AC_TRAFO								
Code number of active transformation according to machine data \$MC_TRAFO_TYPE_n								
.								
Note special meaning in the case of parameterized persistent transformation (bit 1 of \$MC_TRAFO_MODE_MASK set to 1):								
The parameters of the first chained transformation are returned in the case of TRACON. 0 is returned if only the persistent transformation is active.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search	Not classified			link		Not classified		
INT	\$P_TRAFO						Programmed transformation	reference:
description:								
\$P_TRAFO								
Code number of programmed transformation according to machine data \$MC_TRAFO_TYPE_n								
.								
Note special meaning in the case of parameterized persistent transformation (bit 1 of \$MC_TRAFO_MODE_MASK set to 1):								
The first chained transformation is returned in the case of TRACON. 0 is returned if only the persistent transformation is active.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search	Not classified			link		Not classified		

Channel-specific system variables

DOUBLE	\$AC_TRAFO_PAR [n]	Transformation selection parameters	reference:				
description:							
\$AC_TRAFO_PAR[n]							
Selection parameters of active transformation							
.							
Please note special meaning when persistent transformation is configured (Bit 1 of \$MC_TRAFO_MODE_MASK is set to 1): The parameters of the first chained transformation are returned in the case of TRACON. 0 is returned if only the persistent transformation is active.							
Index 1:	n: Number of parameter						
unit:							
min.:	-1,8E308	max.:	1,8E308	std: 0.0			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	Not classified		
DOUBLE	\$P_TRAFO_PAR [n]	Progr. transformation selection parameters	reference:				
description:							
\$P_TRAFO_PAR[n]							
Selection parameters of programmed transformation							
.							
Please note special meaning when persistent transformation is configured (Bit 1 of \$MC_TRAFO_MODE_MASK is set to 1): The parameters of the first chained transformation are returned in the case of TRACON. 0 is returned if only the persistent transformation is active.							
Index 1:	n: Number of parameter						
unit:							
min.:	-1,8E308	max.:	1,8E308	std: 0.0			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	Not classified		

Channel-specific system variables

INT	\$SAC_TRAFO_PARSET	Transformation data set number	reference:			
description:						
\$SAC_TRAFO_PARSET						
Number of active transformation data block						
Variable is '0' is no transformation is active						
.						
Please note special meaning when persistent transformation is configured (Bit 1 of \$MC_TRAFO_MODE_MASK is set to 1): The number of the data set of the first chained transformation is returned in the case of TRACON. is returned. 0 is returned if only the persistent transformation is active.						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link Not classified		
INT	\$P_TRAFO_PARSET	Transformation data set number	reference:			
description:						
\$P_TRAFO_PARSET						
Number of programmed transformation data block						
Variable is '0' is no transformation is active						
.						
Please note special meaning when persistent transformation is configured (Bit 1 of \$MC_TRAFO_MODE_MASK is set to 1): The number of the data set of the first chained transformation is returned in the case of TRACON. is returned. 0 is returned if only the persistent transformation is active.						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link Not classified		

Channel-specific system variables

INT	\$AC_LIFTFAST						State of the Infrast	reference:	
description:									
\$AC_LIFTFAST Information about execution of rapid lift. 0: Initial state. 1: Rapid lift has been executed. The variable is set internally to "1" by the NC at the beginning of the rapid lift process. The variable must be reset to its initial state (\$AC_LIFTFAST=0) by the evaluating program (if one is configured) so that any subsequent rapid lift process can be detected again.									
unit:									
min.:		-2147483648		max.:		1		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	runin stp	X	/	-	0	X			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			
INT	\$P_LIFTFAST						Status of Infrast	reference:	
description:									
\$P_LIFTFAST Information about execution of rapid lift. 0: Initial state. 1: Rapid lift has been executed. The variable is set internally to "1" by the NC at the beginning of the rapid lift process. The variable must be reset to its initial state (\$AC_LIFTFAST=0) by the evaluating program (if one is configured) so that any subsequent rapid lift process can be detected again. The variable is reset by writing \$AC_LIFTFAST!									
unit:									
min.:		-2147483648		max.:		1		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			

Channel-specific system variables

INT	\$AC_ASUP		reference:	
<p>description:</p> <p>\$AC_ASUP</p> <p>Code number for the reason for activating an Asub. The reasons are bit-coded and have the following meaning:</p> <p>BIT0: Activation due to: user interrupt "ASUB with Blsync" Activation by: VDI signal, digital-analog interface Continued by: Freely selectable Reorg or Ret</p> <p>BIT1: Activation due to: User interrupt "ASUB" To continue the program with Repos, the position immediately prior to the interrupt is stored. Activation by: VDI signal, digital-analog interface Continued by: Freely selectable</p> <p>BIT2: Activation due to: user interrupt "ASUB from channel state Ready" Activation by: VDI signal, digital-analog interface Continued by: Freely selectable</p> <p>BIT3: Activation due to: user interrupt "ASUB in a manual mode and channel state not READY" Activation by: VDI signal, digital-analog interface Continued by: Freely selectable</p> <p>BIT4: Activation due to: Activation due to: User interrupt "ASUB". To continue the program with Repos, the current position at the moment of interrupt is stored. Activation by: VDI signal, digital-analog interface Continued by: Freely selectable</p> <p>BIT5: Activation due to: Cancelation of subroutine repeat Activation by: VDI signal Continued by: Execution of system Asub REPOS</p> <p>BIT6: Activation due to: Activation of decoding single block Activation by: VDI signal (+OPI) Continued by: Execution of system Asub REPOS</p> <p>BIT7: Activation due to: Activation of delete distance to go Activation by: VDI signal Continued by: Execution of system Asub Ret</p> <p>BIT8: Activation due to: Activation of axis synchronization Activation by: VDI signal Continued by: Execution of system Asub REPOS</p> <p>BIT9: Activation due to: Mode change Activation by: VDI signal Continued by: Execution of system Asub REPOS or RET (see MD.)</p> <p>BIT10: Activation due to: Program continuation under TeachIn or after TeachIn deactivation Activation by: VDI signal Continued by: Execution of system Asub Ret</p>				

BIT11: Activation due to: Overstore selection
 Activation by: Pi selection
 Continued by: Execution of system Asub REPOS
 BIT12: Activation due to: Alarm with reaction 'offset block with Repos' (COMPBLOCKWITHREORG)
 Activation by: Internal
 Continued by: Execution of system Asub REPOS
 BIT13: Activation due to: Retraction with G33 and Stop
 Activation by: Internal
 Continued by: Execution of system Asub Ret
 BIT14: Activation due to: Activation of dry run feedrate
 Activation by: Vdi
 Continued by: Execution of system Asub REPOS
 BIT15: Activation due to: Deactivation of dry run feedrate
 Activation by: Vdi
 Continued by: Execution of system Asub REPOS
 BIT16: Activation due to: Activation of block suppression
 Activation by: Vdi
 Continued by: Execution of system Asub REPOS
 BIT17: Activation due to: Deactivation of block suppression
 Activation by: Vdi
 Continued by: Execution of system Asub REPOS
 BIT18: Activation due to: Activate machine data
 Activation by: Pi
 Continued by: Execution of system Asub REPOS
 BIT19: Activation due to: Activate tool offset
 Activation by: Pi "_N_SETUDT"
 Continued by: Execution of system Asub REPOS
 BIT20: Activation due to: System Asub after search type SERUPRO has reached the search target.
 Activation by: Pi "_N_FINDBL" Parameter == 5
 Continued by: Execution of system Asub REPOS

unit:						
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

BOOL	\$P_ISTEST		Program test active				reference:	
description:								
\$P_ISTEST								
Returns TRUE (1) if program test is active.								
unit:								
-								
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		Not classified
STRING	\$P_MMCA		Task acknowledgement for MMC command				reference:	
description:								
\$P_MMCA								
Task acknowledgement for MMC command								
index 3:		max. string length						
unit:								
-								
min.:		max.:		std:		""		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		Not classified
BOOL	\$A_PROTO		Activate logging function for 1st user				reference:	
description:								
\$A_PROTO								
Activate / deactivate logging function for the first user. Corresponds to \$A_PROTOC[0].								
unit:								
-								
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	runin stp	X	7	X	7	X		
axis identifier:				Valuation:				
				Cross-channel				
block search		Not classified				link		Not classified

Channel-specific system variables

BOOL	\$A_PROTOC [10]					Activate logging function for user	reference:	
description:								
\$A_PROTOC								
Activate / deactivate logging function for a user. Corresponds to OPI variable protocUserActive.								
Index 1:	Index of the user of the logging function.							
unit:								
min.:	FALSE	max.:	TRUE	std:	FALSE			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	runin stp	X	/	X	/	X		
axis identifier:					Valuation:	Cross-channel		
block search	Not classified				link	Not classified		
INT	\$A_PROT_LOCK [10]					Disable/enable the logging function for a user	reference:	
description:								
\$A_PROT_LOCK								
Disable / enable logging function temporarily for a user								
Index 1:	0 - 10-1, USER							
unit:								
min.:	0	max.:	2	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	runin stp	X	/	X	/	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	Not classified		

Channel-specific system variables

DOUBLE	\$AC_FIFO1 [n]			1st FIFO stack	reference:	
description:						
Variable \$AC_FIFO1[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.						
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.						
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.						
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.						
R variables assigned to FIFO areas should not be written elsewhere.						
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:						
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$						
The FIFO variable is an array variable.						
Indices 0 - 5 have special meanings:						
n = 0: When written with index 0, a new value is stored in the FIFO.						
When read with index 0, the oldest element is read and removed from the FIFO.						
n=1: Access to the first element read						
n=2: Access to the second element read						
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.						
n=4: Number of elements available in the FIFO						
n=5: Current write index relative to the start of the FIFO						
n=6: Oldest element						
n=7: Second oldest etc.						
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	X	X	7	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_FIFO2 [n]		2. FIFO stack		reference:	
description:						
Variable \$AC_FIFO2[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.						
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.						
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.						
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.						
R variables assigned to FIFO areas should not be written elsewhere.						
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:						
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$						
The FIFO variable is an array variable.						
Indices 0 - 5 have special meanings:						
n = 0: When written with index 0, a new value is stored in the FIFO.						
When read with index 0, the oldest element is read and removed from the FIFO.						
n=1: Access to the first element read						
n=2: Access to the second element read						
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.						
n=4: Number of elements available in the FIFO						
n=5: Current write index relative to the start of the FIFO						
n=6: Oldest element						
n=7: Second oldest etc.						
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	X	X	/	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_FIFO3 [n]		3. FIFO stack		reference:	
description:						
Variable \$AC_FIFO3[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.						
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.						
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.						
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.						
R variables assigned to FIFO areas should not be written elsewhere.						
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:						
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$						
The FIFO variable is an array variable.						
Indices 0 - 5 have special meanings:						
n = 0: When written with index 0, a new value is stored in the FIFO.						
When read with index 0, the oldest element is read and removed from the FIFO.						
n=1: Access to the first element read						
n=2: Access to the second element read						
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.						
n=4: Number of elements available in the FIFO						
n=5: Current write index relative to the start of the FIFO						
n=6: Oldest element						
n=7: Second oldest etc.						
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	X	X	/	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_FIFO4 [n]			4. FIFO stack	reference:		
description:							
Variable \$AC_FIFO4[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.							
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.							
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.							
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.							
R variables assigned to FIFO areas should not be written elsewhere.							
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:							
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$							
The FIFO variable is an array variable.							
Indices 0 - 5 have special meanings:							
n = 0: When written with index 0, a new value is stored in the FIFO.							
When read with index 0, the oldest element is read and removed from the FIFO.							
n=1: Access to the first element read							
n=2: Access to the second element read							
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.							
n=4: Number of elements available in the FIFO							
n=5: Current write index relative to the start of the FIFO							
n=6: Oldest element							
n=7: Second oldest etc.							
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.						
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	X	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		Not classified	

Channel-specific system variables

DOUBLE	\$AC_FIFO5 [n]		5. FIFO stack		reference:	
description:						
Variable \$AC_FIFO5[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.						
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.						
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.						
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.						
R variables assigned to FIFO areas should not be written elsewhere.						
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:						
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$						
The FIFO variable is an array variable.						
Indices 0 - 5 have special meanings:						
n = 0: When written with index 0, a new value is stored in the FIFO.						
When read with index 0, the oldest element is read and removed from the FIFO.						
n=1: Access to the first element read						
n=2: Access to the second element read						
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.						
n=4: Number of elements available in the FIFO						
n=5: Current write index relative to the start of the FIFO						
n=6: Oldest element						
n=7: Second oldest etc.						
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	X	X	/	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_FIFO6 [n]			b. FIFO stack	reference:	
description:						
Variable \$AC_FIFO6[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.						
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.						
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.						
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.						
R variables assigned to FIFO areas should not be written elsewhere.						
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:						
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$						
The FIFO variable is an array variable.						
Indices 0 - 5 have special meanings:						
n = 0: When written with index 0, a new value is stored in the FIFO.						
When read with index 0, the oldest element is read and removed from the FIFO.						
n=1: Access to the first element read						
n=2: Access to the second element read						
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.						
n=4: Number of elements available in the FIFO						
n=5: Current write index relative to the start of the FIFO						
n=6: Oldest element						
n=7: Second oldest etc.						
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	X	X	/	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_FIFO7 [n]		7. FIFO stack		reference:	
description:						
Variable \$AC_FIFO7[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.						
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.						
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.						
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.						
R variables assigned to FIFO areas should not be written elsewhere.						
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:						
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$						
The FIFO variable is an array variable.						
Indices 0 - 5 have special meanings:						
n = 0: When written with index 0, a new value is stored in the FIFO.						
When read with index 0, the oldest element is read and removed from the FIFO.						
n=1: Access to the first element read						
n=2: Access to the second element read						
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.						
n=4: Number of elements available in the FIFO						
n=5: Current write index relative to the start of the FIFO						
n=6: Oldest element						
n=7: Second oldest etc.						
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	X	X	7	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_FIFO8 [n]			8. FIFO stack	reference:	
description:						
Variable \$AC_FIFO8[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.						
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.						
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.						
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.						
R variables assigned to FIFO areas should not be written elsewhere.						
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:						
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$						
The FIFO variable is an array variable.						
Indices 0 - 5 have special meanings:						
n = 0: When written with index 0, a new value is stored in the FIFO.						
When read with index 0, the oldest element is read and removed from the FIFO.						
n=1: Access to the first element read						
n=2: Access to the second element read						
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.						
n=4: Number of elements available in the FIFO						
n=5: Current write index relative to the start of the FIFO						
n=6: Oldest element						
n=7: Second oldest etc.						
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	X	X	/	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_FIFO9 [n]		9. FIFO stack		reference:		
description:							
Variable \$AC_FIFO9[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.							
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.							
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.							
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.							
R variables assigned to FIFO areas should not be written elsewhere.							
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:							
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$							
The FIFO variable is an array variable.							
Indices 0 - 5 have special meanings:							
n = 0: When written with index 0, a new value is stored in the FIFO.							
When read with index 0, the oldest element is read and removed from the FIFO.							
n=1: Access to the first element read							
n=2: Access to the second element read							
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.							
n=4: Number of elements available in the FIFO							
n=5: Current write index relative to the start of the FIFO							
n=6: Oldest element							
n=7: Second oldest etc.							
Index 1:	The dimension is defined in \$MC_LEN_AC_FIFO.						
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	X	X	/	-	0	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		

Channel-specific system variables

DOUBLE	\$AC_FIFO10 [n]						10. FIFO stack	reference:	
description:									
Variable \$AC_FIFO10[n] is a stack with first in first out characteristics. This stack memory can be used for cyclic measuring operations.									
\$MC_NUM_AC_FIFO is used to define the number of FIFO variables \$AC_FIFO1 - \$AC_FIFO10.									
The elements of the stack memory are saved in R variables. The length of all FIFO variables is configured with \$MC_LEN_AC_FIFO.									
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.									
R variables assigned to FIFO areas should not be written elsewhere.									
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be accommodated:									
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$									
The FIFO variable is an array variable.									
Indices 0 - 5 have special meanings:									
n = 0: When written with index 0, a new value is stored in the FIFO.									
When read with index 0, the oldest element is read and removed from the FIFO.									
n=1: Access to the first element read									
n=2: Access to the second element read									
n=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.									
n=4: Number of elements available in the FIFO									
n=5: Current write index relative to the start of the FIFO									
n=6: Oldest element									
n=7: Second oldest etc.									
Index 1:		The dimension is defined in \$MC_LEN_AC_FIFO.							
unit:									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	X	X	/	-	0	X			
axis identifier:					Valuation:		channel-specific		
block search			Not classified		link		Not classified		
BOOL	\$A_IN [n]						Digital input	reference:	
description:									
Variable \$A_IN[n] is used to interrogate digital inputs.									
Index 1:		The dimension is defined in \$MN_FASTIO_DIG_NUM_INPUTS.							
unit:									
min.:		FALSE		max.:		TRUE		std:	FALSE
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search			Not classified		link		Not classified		

Channel-specific system variables

BOOL	\$A_OUT [n]		Digital output			reference:		
description:								
Variable \$A_OUT[n] is used to interrogate digital outputs.								
Index 1:		The dimension is defined in \$MN_FASTIO_DIG_NUM_OUTPUTS.						
unit:		-						
min.:		FALSE	max.:		TRUE	std:		FALSE
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
DOUBLE	\$A_INA [n]		Analog input			reference:		
description:								
Variable \$A_INA[n] is used to access the analog inputs.								
Index 1:		The dimension is defined in \$MN_FASTIO_ANA_NUM_INPUTS.						
unit:		-						
min.:		-1,8E308	max.:		1,8E308	std:		0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
DOUBLE	\$A_OUTA [n]		Analog output			reference:		
description:								
Variable \$A_OUTA[n] is used to access the analog outputs. When written the value does not become operative until the next interpolator cycle and can then be read back.								
Index 1:		The dimension is defined in \$MN_FASTIO_ANA_NUM_OUTPUTS.						
unit:		-						
min.:		-1,8E308	max.:		1,8E308	std:		0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	

Channel-specific system variables

BOOL	\$A_INCO [2]		Comparator input				reference:	
description:								
Variable \$A_INCO[n] is used to access the comparator inputs.								
Index 1: nth comparator input.								
unit: -								
min.: FALSE		max.: TRUE		std:		FALSE		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$A_DBB [1024]		PLC data byte (unsigned)				reference:	
description:								
Array variable \$A_DBB[n] is used to read and write a data byte (8 bits) from PLC. The byte is unsigned and can be read in the range from 0 to 255 and written in the range from -128 to 255.								
A memory area is reserved in the communications buffer of these modules (DPR) for high-speed data exchange between PLC and NC. The PLC uses function calls (FC) and the NCK uses \$ variables to access this memory.								
See also \$A_DBSB[n].								
Index 1: n: Position offset within I/O area 0 - ...								
unit: -								
min.: -128		max.: 255		std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	Mrun syn	X	7	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$A_DBW [1024]		PLC data word (unsigned)				reference:	
description:								
Array variable \$A_DBW[n] is used to read and write a data word (16 bits) from PLC. The byte is unsigned and can be read in the range from 0 to 65535 and written in the range from -32768 to 65535.								
A memory area is reserved in the communications buffer of these modules (DPR) for high-speed data exchange between PLC and NC. The PLC uses function calls (FC) and the NCK uses \$ variables to access this memory.								
See also \$A_DBSW[n].								
Index 1: n: Position offset within I/O area 0 - ...								
unit: -								
min.: -32768		max.: 65535		std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	Mrun syn	X	7	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

Channel-specific system variables

INT	\$A_DBD [1024]						PLC data doubleword	reference:	
description:									
Array variable \$A_DBD[n] is used to read and write a data doubleword (32 bits) from PLC.									
A memory area is reserved in the communications buffer of these modules (DPR) for high-speed data exchange between PLC and NC. The PLC uses function calls (FC) and the NCK uses \$ variables to access this memory.									
Index 1: n: Position offset within I/O area 0 - ...									
unit: -									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	/	X	/	X			
write:	Mrun syn	X	/	-	0	X			
axis identifier:									
Valuation: channel-specific									
block search Not classified link Not classified									
DOUBLE	\$A_DBR [1024]						PLC Real data (32 bits)	reference:	
description:									
Array variable \$A_DBR[n] is used to read and write Real data (32 bits) from PLC.									
A memory area is reserved in the communications buffer of these modules (DPR) for high-speed data exchange between PLC and NC. The PLC uses function calls (FC) and the NCK uses \$ variables to access this memory.									
Index 1: n: Position offset within I/O area 0 - ...									
unit: -									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	/	X	/	X			
write:	Mrun syn	X	/	-	0	X			
axis identifier:									
Valuation: channel-specific									
block search Not classified link Not classified									
INT	\$A_DLB [n]						Link variable byte	reference:	
description:									
Variable \$A_DLB[n] enables reading and writing of a data byte (8 bits) which can be transmitted to other channels or NCUs across the NCU link.									
\$MC_MM_NUM_LINKVAR_ELEMENTS is used to define the number of elements available to the user for programming link variables (\$A_DLx).									
The negative value range of this variable applies to write operations only. The variable can thus store negative values. Only the corresponding positive value can be read back.									
Index 1: The dimension is defined in \$MC_MM_SIZEOF_LINKVAR_DATA.									
unit: -									
min.: -128 max.: 255 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	/	X	/	X			
write:	Mrun syn	X	/	X	/	X			
axis identifier:									
Valuation: channel-specific									
block search Not classified link Not classified									

Channel-specific system variables

INT	\$A_DLW [n]		Link variable word			reference:
description:						
Variable \$A_DLW[n] enables reading and writing of a data word (16 bits) which can be transmitted to other channels or NCUs across the NCU link.						
\$MC_MM_NUM_LINKVAR_ELEMENTS is used to define the number of elements available to the user for programming link variables (\$A_DLx).						
The negative value range of this variable applies to write operations only. The variable can thus store negative values. Only the corresponding positive value can be read back.						
Index 1: The dimension is defined in \$MC_MM_SIZEOF_LINKVAR_DATA.						
unit: -						
min.: -32768 max.: 65535 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	Mrun syn	X	/	X	/	X
axis identifier:			Valuation: channel-specific			
block search			Not classified		link Not classified	
INT	\$A_DLD [n]		Integer link variable			reference:
description:						
Variable \$A_DLD[n] enables reading and writing of a data doubleword (32 bits) which can be transmitted to other channels or NCUs across the NCU link.						
\$MC_MM_NUM_LINKVAR_ELEMENTS is used to define the number of elements available to the user for programming link variables (\$A_DLx).						
Index 1: The dimension is defined in \$MC_MM_SIZEOF_LINKVAR_DATA.						
unit: -						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	Mrun syn	X	/	X	/	X
axis identifier:			Valuation: channel-specific			
block search			Not classified		link Not classified	
DOUBLE	\$A_DLR [n]		Real link variable			reference:
description:						
Variable \$A_DLR[n] enables reading and writing of a Real value which can be transmitted to other channels or NCUs across the NCU link.						
\$MC_MM_NUM_LINKVAR_ELEMENTS is used to define the number of elements available to the user for programming link variables (\$A_DLx).						
Index 1: The dimension is defined in \$MC_MM_SIZEOF_LINKVAR_DATA.						
unit: -						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	Mrun syn	X	/	X	/	X
axis identifier:			Valuation: channel-specific			
block search			Not classified		link Not classified	

Channel-specific system variables

INT	\$A_LINK_TRANS_RATE		Link data transfer rate			reference:	
description:							
Variable \$A_LINK_TRANS_RATE determines the number of bytes which can still be transferred by NCU link in the current interpolation cycle.							
unit:							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified
INT	\$A_PBB_IN [32]		PLC input byte			reference:	
description:							
Array variable \$A_PBB_IN[n] is used to read and write a data byte (8 bits) from the PLC I/O.							
Index 1:		The dimension is defined in \$MN_PLCIO_NUM_BYTES_IN.					
unit:							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified
INT	\$A_PBW_IN [32]		PLC input word			reference:	
description:							
Array variable \$A_PBW_IN[n] is used to read and write a data word (16 bits) from the PLC I/O.							
Index 1:		The dimension is defined in \$MN_PLCIO_NUM_BYTES_IN.					
unit:							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

Channel-specific system variables

INT	\$A_PBD_IN [32]						PLC input doubleword	reference:	
description:									
Array variable \$A_PBD_IN[n] is used to read a data doubleword (32 bits) from the PLC I/O.									
Index 1: The dimension is defined in \$MN_PLCIO_NUM_BYTES_IN.									
unit: -									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
DOUBLE	\$A_PBR_IN [32]						Real PLC input	reference:	
description:									
Array variable \$A_PBR_IN[n] is used to read Real data (32 bits) from the PLC I/O.									
Index 1: The dimension is defined in \$MN_PLCIO_NUM_BYTES_IN.									
unit: -									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
INT	\$A_PBB_OUT [32]						PLC output byte	reference:	
description:									
Array variable \$A_PBB_OUT[n] is used to write a data byte (8 bits) to the PLC I/O.									
Index 1: The dimension is defined in \$MN_PLCIO_NUM_BYTES_OUT.									
unit: -									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	Mrun syn	X	7	-	0	X			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
INT	\$A_PBW_OUT [32]						PLC output word	reference:	
description:									
Array variable \$A_PBW_OUT[n] is used to write a data word (16 bits) to the PLC I/O.									

Channel-specific system variables

Index 1:	The dimension is defined in \$MN_PLCIO_NUM_BYTES_OUT.					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	Mrun syn	X	/	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$A_PBD_OUT [32]			PLC output doubleword		reference:
description:						
Array variable \$A_PBD_OUT[n] is used to write a data doubleword (32 bits) to the PLC I/O.						
Index 1:	The dimension is defined in \$MN_PLCIO_NUM_BYTES_OUT.					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	Mrun syn	X	/	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
DOUBLE	\$A_PBR_OUT [32]			Real PLC output		reference:
description:						
Array variable \$A_PBR_OUT[n] is used to write Real data (32 bits) to the PLC I/O.						
Index 1:	The dimension is defined in \$MN_PLCIO_NUM_BYTES_OUT.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	Mrun syn	X	/	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
BOOL	\$C_IN [16]			Signal from PLC to cycle		reference:
description:						
\$C_IN[n]						
Signal from the PLC to cycle						
Reserved for SIEMENS applications!						
16 input signals (i.e. 2 bytes) are available. Data transfer is cyclic.						

Channel-specific system variables

Index 1:	n: Number of input 1 - ...					
unit:	-					
min.:	FALSE	max.:	TRUE	std:	FALSE	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
BOOL	\$C_OUT [16]			Signal from cycle to the PLC		reference:
description:						
\$C_OUT[n]						
Signal from cycle to the PLC						
Reserved for SIEMENS applications!						
16 output signals (i.e. 2 bytes) are available. Data transfer is cyclic.						
Index 1:	n: Number of output 1 - ...					
unit:	-					
min.:	FALSE	max.:	TRUE	std:	FALSE	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$AC_TC_CMDT			Trigger, tool management outputs a command		reference:
description:						
\$AC_TC_CMDT						
Trigger variable: \$AC_TC_CMDT (CoMmadTrigger) assumes the value '1' for an interpolation cycle whenever a new command from the magazine management is output to the PLC.						
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

INT	\$AC_TC_ACKT						Trigger, PLC acknowledges a tool management command	reference:	
description:									
\$AC_TC_ACKT									
Trigger variable: \$AC_TC_ACKT (ACKnowledgeTrigger) assumes the value '1' for an interpolation cycle whenever the PLC acknowledges a TM command.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			
INT	\$AC_TC_CMDC						Number of commands output by the tool management	reference:	
description:									
\$AC_TC_CMDC									
Counter variable: \$AC_TC_CMDC (CoMmandCounter) is incremented by 1 every time the TM sends a command to the PLC.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:		X	/	X	/	X			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			
INT	\$AC_TC_ACKC						Number of PLC acknowledgements to tool management commands	reference:	
description:									
\$AC_TC_ACKC									
Counter variable: \$AC_TC_CMDC (ACKnowledgeCounter) is incremented by 1 every time the PLC acknowledges a command from the TM.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:		X	/	X	/	X			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			

Channel-specific system variables

INT	\$AC_TC_FCT						reference:	
description:								
\$AC_TC_FCT Command number. This specifies the requested operation. -1: No TM command is active at the instant the variable is read.								
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Not classified				Not classified				
INT	\$AC_TC_STATUS						reference:	
description:								
\$AC_TC_STATUS Current status of the command - to be read via \$AC_TC_FCT. -1: No TM command is active at the instant the variable is read.								
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Not classified				Not classified				
INT	\$AC_TC_THNO						reference:	
description:								
\$AC_TC_THNO Number of the toolholder (specifically the spindle no.) to which the new tool is to be loaded. -1: No TM command is active at the instant the variable is read.								
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Not classified				Not classified				

Channel-specific system variables

INT	\$SAC_TC_TNO						reference:	
description:								
\$SAC_TC_TNO								
NCK internal T number of the new (to be loaded) tool.								
0: There is no new tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$SAC_TC_MMYN						reference:	
description:								
\$SAC_TC_MMYN								
Home magazine number of the new (to be loaded) tool.								
0: There is no new tool, or the new tool (if \$SAC_TC_TNO > 0) is not loaded (manual tool).								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$SAC_TC_LMYN						reference:	
description:								
\$SAC_TC_LMYN								
Home location number of the new (to be loaded) tool.								
0: There is no new tool, or the new tool (if \$SAC_TC_TNO > 0) is not loaded (manual tool).								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

Channel-specific system variables

INT	\$SAC_TC_MFN						reference:	
description:								
\$SAC_TC_MFN								
Source magazine number of the new tool.								
0: There is no new tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$SAC_TC_LFN						reference:	
description:								
\$SAC_TC_LFN								
Source location number of the new tool.								
0: There is no new tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$SAC_TC_MTN						reference:	
description:								
\$SAC_TC_MTN								
Target magazine number of the new tool.								
0: There is no new tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

Channel-specific system variables

INT	\$SAC_TC_LTN						reference:	
description:								
\$SAC_TC_LTN								
Target location number of the new tool.								
0: There is no new tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
INT	\$SAC_TC_MFO						reference:	
description:								
\$SAC_TC_MFO								
Source magazine number of the old (to be replaced) tool.								
0: There is no old tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
INT	\$SAC_TC_LFO						reference:	
description:								
\$SAC_TC_LFO								
Source location number of the old (to be replaced) tool.								
0: There is no old tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	

Channel-specific system variables

INT	\$AC_TC_MTO						reference:	
description:								
\$AC_TC_MTO								
Target magazine number of the old (to be replaced) tool.								
0: There is no old tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$AC_TC_LTO						reference:	
description:								
\$AC_TC_LTO								
Target location number of the old (to be replaced) tool.								
0: There is no old tool.								
-1: No TM command is active at the instant the variable is read.								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$A_YEAR				System time: year		reference:	
description:								
\$A_YEAR								
System time year								
unit:								
min.: 0 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

Channel-specific system variables

INT	\$A_MONTH		System time: month			reference:	
description:							
\$A_MONTH							
System time month							
unit:							
-							
min.:		1		max.:		12	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

INT	\$A_DAY		System time: day			reference:	
description:							
\$A_DAY							
System time day							
unit:							
-							
min.:		1		max.:		31	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

INT	\$A_HOUR		System time: hour			reference:	
description:							
\$A_HOUR							
System time hour							
unit:							
-							
min.:		0		max.:		24	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

Channel-specific system variables

INT	\$A_MINUTE						System time: minute	reference:	
description:									
\$A_MINUTE									
System time minute									
unit:									
-									
min.:			0			max.:			60
						std:			0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:			channel-specific
block search			Not classified			link			Not classified
INT	\$A_SECOND						System time: second	reference:	
description:									
\$A_SECOND									
System time second									
unit:									
-									
min.:			0			max.:			60
						std:			0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:			channel-specific
block search			Not classified			link			Not classified
INT	\$A_MSECOND						System time: millisecond	reference:	
description:									
\$A_MSECOND									
System time millisecond									
unit:									
-									
min.:			0			max.:			1000
						std:			0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:			channel-specific
block search			Not classified			link			Not classified

Channel-specific system variables

DOUBLE	\$AC_TIME						Time from block start	reference:	
description:									
Variable \$AC_TIME determines the time from the block start in seconds.									
unit:									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			
DOUBLE	\$AC_TIMES							reference:	
description:									
\$AC_TIMES									
Time from block start (REAL) in seconds (excluding times for internally generated intermediate blocks).									
Each programmed block can be divided into a sequence of sub-blocks for sequential processing.									
\$AC_TIMES is set to zero on the 1st cycle of the 1st block in the sequence. It is then incremented in seconds. The variable therefore allows time measurements to be taken over the whole block sequence.									
The variable can be accessed only from synchronized actions.									
unit:									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			
DOUBLE	\$AC_TIMEC						Interpolation cycles since block start	reference:	
description:									
Variable \$AC_TIMEC determines the number of interpolation cycles which have elapsed since the block start.									
unit:									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			

Channel-specific system variables

DOUBLE	\$AC_TIMESC						reference:	
description:								
\$AC_TIMESC								
Time from block start (Real) in IPO cycles (excluding cycles for internally generated intermediate blocks).								
Each programmed block can be divided into a sequence of sub-blocks for sequential processing.								
\$AC_TIMESC is set to zero o_n_l_y during the 1st cycle of the 1st block in the sequence. It is then incremented in IPO cycles. The variable therefore allows time measurements to be taken over the whole block sequence.								
The variable can be accessed only from synchronized actions								
unit:								
-								
min.:		0.0		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	-	X	0	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:			channel-specific	
block search		Not classified			link		Not classified	
DOUBLE	\$AC_TIMER [1]						reference:	
User timer								
description:								
Array variable \$AC_TIMER[n] is an application-related timer. The time in seconds is counted in multiples of an interpolation cycle.								
The timer is started by assigning a value:								
\$AC_TIMER[n]=<start value>								
The timers can be stopped by assigning a negative value:								
\$AC_TIMER[n]=-1								
The current timer count can be read while the time variable is running or stopped. When the time variable is stopped by assigning -1, the last count value remains stored in the variable and can continue to be read.								
Index 1: The dimension is defined in \$MC_MM_NUM_AC_TIMER.								
unit:								
-								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	runin stp	X	7	-	0	X		
axis identifier:				Valuation:			channel-specific	
block search		Not classified			link		Not classified	

Channel-specific system variables

DOUBLE	\$AC_PRTIME_M						Precalculated program run time (machining time)	reference:	
description:									
\$AC_PRTIME_M "ProgramRunTIME-Main"									
Reading and setting (initialization) of the precalculated program runtime (main time)									
During the simulation, the anticipated processing time of the blocks in the part program is calculated by the NCK, and made available in this system variable and the OPI variable 'acPRTIME_M'. This value is cleared by writing a value to the variable.									
unit:									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		
DOUBLE	\$AC_PRTIME_A						Precalculated program run time (idle time)	reference:	
description:									
\$AC_PRTIME_A "ProgramRunTIME-Auxiliary"									
Reading and setting (initialization) of the precalculated program run time (idle time)									
During the simulation, the anticipated processing time (idle times) of the blocks in the part program is calculated by the NCK, and made available in this system variable and the OPI variable 'acPRTIME_A'. This value is cleared by writing a value to the variable.									
unit:									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		
DOUBLE	\$AC_PRTIME_M_INC						Increment ProgramRunTIME-Main	reference:	
description:									
\$AC_PRTIME_M_INC "ProgramRunTIME-Main-INCrement"									
Incrementation of the precalculated program runtime (main time)									
During the simulation, the anticipated processing time of the blocks in the part program is calculated by the NCK and stored in the OPI variable 'acPRTIME_M'. Since certain times (e.g. PLC times) are not considered, the calculated program runtime can be corrected by setting this variable explicitly.									
unit:									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	-	0	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		

Channel-specific system variables

DOUBLE	\$AC_PRTIME_A_INC		Increment ProgramRunTIME-Aux.			reference:	
description:							
\$AC_PRTIME_A_INC "ProgramRunTIME-Auxiliary-INCrement"							
Incrementation of accumulated program run time (idle time)							
During the simulation, the anticipated processing time of the blocks in the part program can be calculated by the NCK and stored in OPI variable 'acPRTimeM'. Since certain times (e.g. PLC times) are not considered, the calculated program runtime can be corrected by setting this variable explicitly.							
unit:							
-							
min.:		0		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	-	0	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AC_PATHN		Normalized path parameter			reference:	
description:							
Variable \$AC_PATHN is a normalized path parameter whose value varies between 0 at the block start and 1 at the block end.							
unit:							
-							
min.:		0		max.:		1	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AC_DTBW		Distance from block start in WCS			reference:	
description:							
Variable \$AC_DTBW determines the geometric distance from the block start in the workpiece coordinate system.							
The programmed position is used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.							
unit:							
mm							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified

Channel-specific system variables

INT	\$AC_REPOS_PATH_MODE					reference:	
description:							
\$AC_REPOS_PATH_MODE Type of Repos mode 0 not defined. 1 == RMB Repos approach to start of interrupted block 2 == RMI Repos approach to interruption point in interrupted block 3 == RME Repos approach to end of interrupted block 4 == RMN Repos approach to next geometric point in interrupted block The variable is defined if a REPOS command is currently being executed, or if a new REPOS mode has been specified via the VDI.							
unit:							
min.:	-2147483648		max.:	4		std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search			Program sensitive		link		Not classified
DOUBLE	\$AC_DTBB					Distance from block start in BCS	reference:
description:							
Variable \$AC_DTBB determines the geometric distance from the block start in the basic coordinate system. The programmed position is used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.							
unit:							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search			Not classified		link		Not classified
DOUBLE	\$AC_DTEW					Distance from block end in WCS	reference:

Channel-specific system variables

description:							
Variable \$AC_DTEW determines the geometric distance from the block end in the workpiece coordinate system.							
The programmed position is used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.							
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		
DOUBLE	\$AC_DTEB			Distance from block end in BCS			reference:
description:							
Variable \$AC_DTEB determines the geometric distance from the block end in the basic coordinate system.							
The programmed position is used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.							
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		
DOUBLE	\$AC_PLTBB			Path from block start in BCS			reference:
description:							
Variable \$AC_PLTBB determines the path from the block start in the basic coordinate system.							
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		

Channel-specific system variables

DOUBLE	\$AC_PLTEB						Path to block end in BCS	reference:	
description:									
Variable \$AC_PLTEB determines the path to the block end in the basic coordinate system.									
unit: mm									
min.: -1,8E308			max.: 1,8E308			std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:		channel-specific	
block search		Not classified				link		Not classified	
DOUBLE	\$AC_DELT						Path distance to go in WCS	reference:	
description:									
Variable \$AC_DELT is used to read the stored path distance to go in the workpiece coordinate system after delete distance to go in motion-synchronous actions.									
unit: mm									
min.: -1,8E308			max.: 1,8E308			std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:		channel-specific	
block search		Not classified				link		Not classified	
BOOL	\$P_APDV						Position values for SAR are valid	reference:	
description:									
\$P_APDV									
Returns True if the position values which can be read with \$P_APR[X] or \$P_AEP[X] (respectively starting point or contour point in the case of smooth approach and retraction) are valid.									
unit: -									
min.: FALSE			max.: TRUE			std:		FALSE	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:		channel-specific	
block search		Not classified				link		Not classified	

Channel-specific system variables

DOUBLE	\$P_F		Programmed path feed			reference:	
description:							
Variable \$P_F is used to read the last programmed path feed F.							
unit:		mm/min					
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	
DOUBLE	\$AC_F		Active programmed path feed			reference:	
description:							
Variable \$AC_F is used to read the active programmed path feed F.							
unit:		mm/min					
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	
DOUBLE	\$AC_F_G0		Max. rapid traverse in block			reference:	
description:							
Variable \$AC_F_G0 returns the maximum rapid traverse velocity in the block.							
unit:		mm/min					
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_OVR						Path override can be specified via synchronized action	reference:		
description:										
The variable \$AC_OVR determines the path override specifiable via synchronized action. The path override must be set by assigning a value cyclically to \$AC_OVR in each interpolation cycle. Otherwise \$AC_OVR is reset to 100%.										
The total path override can be read via \$AC_TOTAL_OVR.										
The total path override without the programmable override (e.g. OVR = 10) is limited to the maximum value defined by the machine data \$MN_OVR_FACTOR_LIMIT_BIN or \$MN_OVR_FACTOR_FEEDRATE[30]. Values less than 0 are not allowed.										
unit:										
min.:			1,8E308			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	-	X	0	X	7	X				
write:	-	X	0	-	0	X				
axis identifier:							Valuation:		channel-specific	
block search		Not classified				link		Not classified		
DOUBLE	\$AC_PLC_OVR						PLC override	reference:		
description:										
The variable \$AC_PLC_OVR determines the path override defined by the PLC. This is the feedrate override that is set via the Machine Control Panel.										
The rapid traverse override (settable on the Machine Control Panel) is effective with G0 blocks. If the rapid traverse reduction has been activated via the operator interface, then, with G0 blocks, \$SSC_OVR_RAPID_FACTOR is also taken into account multiplicatively.										
unit:										
min.:			0			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	-	X	0	X	7	X				
write:	-	-	0	-	0	-				
axis identifier:							Valuation:		channel-specific	
block search		Not classified				link		Not classified		
DOUBLE	\$AC_TOTAL_OVR						Overall path override	reference:		
description:										
The variable \$AC_TOTAL_OVR supplies the total path override. The value is calculated from the override from the PLC, the synchronized action override (\$AC_OVR) and the programmable override (e.g. OVR = 10). $\$AC_TOTAL_OVR = \$AC_PLC_OVR * \$AC_OVR * OVR / 10000.$										
unit:										
min.:			0			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	-	X	0	X	7	X				
write:	-	-	0	-	0	-				
axis identifier:							Valuation:		channel-specific	
block search		Not classified				link		Not classified		

Channel-specific system variables

DOUBLE	\$AC_VC			Additive path feed override	reference:	
description:						
\$AC_VC						
Additive path feed override for synchronized actions						
The override value must be rewritten in every lpo cycle or else a value of 0 is applied.						
The override value is ignored with an override of 0. Otherwise, the override value is applied independent of the override.						
The total feedrate cannot be made negative by an override value.						
An upper limit is applied to ensure that the maximum axis velocities and acceleration rates cannot be exceeded. The maximum feedrate is limited by \$MN_OVR_FACTOR_LIMIT_BIN, \$MN_OVR_FACTOR_FEEDRATE[30] (see machine data).						
The override value is not included in the calculation in the case of G0, G33, G331, G332 and G63.						
The variable can be accessed only from synchronized actions.						
unit:		Linear / angular speed				
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	1	X
write:	-	X	0	-	0	X
axis identifier:				Valuation:		channel-specific
block search		Not classified			link	Not classified
DOUBLE	\$AC_PATHACC			Path acceleration for real-time events	reference:	
description:						
\$AC_PATHACC						
Defines an increased path acceleration for override changes and stop/start events.						
\$AC_PATHACC is taken into account only if the value is higher than the prepared acceleration limit.						
A value of 0 deselects the function.						
Values which cause machine axis acceleration rates twice the rate configured in \$MA_MAX_AX_ACCEL[...] are limited internally.						
unit:		m/s ²				
min.:		0.		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	1	X	1	X
write:	run in stp	X	1	-	0	X
axis identifier:				Valuation:		channel-specific
block search		Not classified			link	Not classified

Channel-specific system variables

DOUBLE	\$AC_PATHJERK		Path jerk for real-time events			reference:	
description:							
\$AC_PATHJERK							
Defines an increased path jerk for override changes and stop/start events.							
\$AC_PATHJERK is taken into account only if the value is higher than the prepared jerk limit.							
A value of 0 deselects the function.							
unit:		m/s ³					
min.:		0.		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:					Valuation:		channel-specific
block search		Not classified			link		Not classified
DOUBLE	\$AC_VACTB		Path velocity of geometry axes			reference:	
description:							
\$AC_VACTB							
Path velocity in the basic coordinate system.							
The velocity is calculated from the velocities of the geometry axes - independent of FGROUP.							
The variable can be accessed only from synchronized actions							
unit:		Linear / angular speed					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:		channel-specific
block search		Not classified			link		Not classified
DOUBLE	\$AC_VACTW		WCS path velocity of geometry axes			reference:	
description:							
\$AC_VACTW							
Path velocity in the workpiece coordinate system							
The velocity is calculated from the velocities of the geometry axes - independent of FGROUP.							
The variable can be accessed only from synchronized actions							
unit:		Linear / angular speed					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:		channel-specific
block search		Not classified			link		Not classified

Channel-specific system variables

DOUBLE	\$P_S [n]						Programmed spindle speed	reference:	
description:									
\$P_S[n]									
n: Number of spindle									
Last programmed spindle speed									
index 1: n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.									
unit: rpm									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:									
Valuation: channel-specific									
block search Not classified link Not classified									
DOUBLE	\$AA_S [1]						Current spindle speed	reference:	
description:									
\$AA_S[n]									
n: Number of spindle									
Actual spindle speed. The sign corresponds to the direction of rotation.									
index 1: n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.									
unit: rpm									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stop	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:									
Valuation: channel-specific									
block search Not classified link Not classified									
DOUBLE	\$P_CONSTCUT_S [n]						Programmed cutting rate	reference:	
description:									
\$P_CONSTCUT_S[n]									
n: Number of spindle									
Last programmed constant cutting rate									
index 1: n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.									
unit: m/min									
min.: 0 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:									
Valuation: channel-specific									
block search Not classified link Not classified									

Channel-specific system variables

DOUBLE	\$AC_CONSTCUT_S [n]		Current constant cutting rate				reference:	
description:								
\$AC_CONSTCUT_S[n]								
n: Number of spindle								
Current constant cutting rate.								
Index 1:		n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.						
unit:		m/min						
min.:		0		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stop	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		Not classified		
DOUBLE	\$P_SEARCH_S [n]		Search run: speed, cutting rate				reference:	
description:								
\$P_SEARCH_S[n]								
n: Number of spindle								
Last programmed spindle speed collected during block search or cutting rate								
Index 1:		n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.						
unit:		rpm						
min.:		0		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		Not classified		
INT	\$P_SDIR [n]		Programmed direction of spindle rotation				reference:	
description:								
\$P_SDIR[n]								
n: Number of spindle								
Programmed direction of spindle rotation in part program								
3: CW spindle rotation, 4: CCW spindle rotation, 5: Spindle stop								

Channel-specific system variables

Index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:	-					
min.:	3	max.:	5	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$AC_SDIR [n]			Programmed direction of spindle rotation		reference:
description:						
\$AC_SDIR[n]						
n: Number of spindle						
Programmed direction of spindle rotation in the part program, synchronized actions, PLC FC18, PLC DBB30.						
3: CW spindle rotation, 4: CCW spindle rotation, 5: Spindle stop						
Index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:	-					
min.:	3	max.:	5	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$P_SEARCH_SDIR [n]			Block search: programmed direction of spindle rotation in part program		reference:
description:						
\$P_SEARCH_SDIR[n]						
n: Number of spindle						
Last programmed direction of spindle rotation collected during block search						
3: M3 CW spindle rotation						
4: M4 CCW spindle rotation						
5: M5 Spindle stop						
-19: M19, SPOS, SPOSA spindle positioning, position and approach mode						
is read from SEARCH variables						
70: M70 Changeover to axis mode						
-5: No direction of rotation programmed, not output.						

Channel-specific system variables

Index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:	-					
min.:	3	max.:	70	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$P_SMODE [n]			Spindle mode		reference:
description:						
\$P_SMODE[n]						
n: Number of spindle						
The spindle mode resulting from the last spindle programming action is returned.						
0: No spindle programmed in channel, or spindle is active in another channel, or is being used by the PLC (FC18) or synchronized actions.						
1: Speed control mode						
2: Positioning mode						
3: Synchronous mode						
4: Axis mode						
Index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:	-					
min.:	0	max.:	4	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

INT	\$AC_SMODE [n]		Current spindle mode			reference:	
description:							
\$AC_SMODE[n]							
n: Number of spindle							
Current spindle mode:							
0: No spindle programmed in channel							
1: Speed control mode							
2: Positioning mode							
3: Synchronous mode							
4: Axis mode							
index 1:		n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:							
min.:		0		max.:		4	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	1	X	1	X	
write:	-	-	0	-	0	-	
axis identifier:				valuation:			
				channel-specific			
block search		Not classified		link		Not classified	

INT	\$P_SGEAR [n]		Spindle: set gear stage			reference:	
description:							
\$P_SGEAR[n]							
n: Number of spindle							
Spindle gear stage last programmed or requested by S programming in the case of M40							
1: 1. Gear stage requested							
....							
5: 5. Gear stage requested							
index 1:		n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:							
min.:		1		max.:		5	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				valuation:			
				channel-specific			
block search		Not classified		link		Not classified	

Channel-specific system variables

INT	\$AC_SGEAR [n]						Active spindle gear stage	reference:	
description:									
\$AC_SGEAR[n]									
n: Number of spindle									
Active spindle gear stage									
1: 1. Gear stage is active									
....									
5: 5. Gear stage is active									
index 1: n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.									
unit:									
min.: 1 max.: 5 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				valuation:			channel-specific		
block search		Not classified			link		Not classified		
INT	\$P_SAUTOGEAR [n]						Automatic gear stage change	reference:	
description:									
\$P_SAUTOGEAR[n]									
n: Number of spindle									
Automatic gear stage change (M40) is programmed.									
0: Gear stages are requested by M41..M45									
1: Gear stage is calculated and requested according to programmed speed (S)									
(M40 automatic gear stage change is active)									
index 1: n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.									
unit:									
min.: 0 max.: 1 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				valuation:			channel-specific		
block search		Not classified			link		Not classified		

Channel-specific system variables

INT	\$P_SEARCH_SGEAR [n]			Search run: Gear stage M code	reference:	
description:						
\$P_SEARCH_SGEAR[n]						
n: Number of spindle						
Last programmed gear stage M function collected during block search						
40: M40 automatic gear stage change						
41: M41 1st gear stage requested						
...						
45: M45 5th gear stage requested						
Index 1:						
n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.						
unit:						
-						
min.: 1 max.: 5 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified
DOUBLE	\$P_SEARCH_SPOS [n]			Search run: Spindle position, path	reference:	
description:						
\$P_SEARCH_SPOS[n]						
n: Number of spindle						
Spindle position or traversing path last programmed via M19, SPOS or SPOSA and collected during block search.						
Position: 0...359,999 if the value in MD 30330 MODULO_RANGE is 360.0 degrees						
Path: -100000000 ... 100000000 degrees. The sign specifies the direction of travel.						
Index 1:						
n: Spindle number 0 ... max. spind for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.						
unit:						
deg.						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified

Channel-specific system variables

INT	\$P_SEARCH_SPOSMODE [n]		Search run: Position approach mode			reference:	
description:							
\$P_SEARCH_SPOSMODE[n]							
n: Number of spindle							
Position approach mode last programmed via M19, SPOS or SPOSA and collected during block search.							
0: DC							
1: AC							
2: IC							
3: DC							
4: ACP							
5: ACN							
index 1:		n: Spindle number 0 ... Max. spindle number			for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.		
unit:							
min.: 0 max.: 5 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
INT	\$P_NUM_SPINDLES		Number of spindles in channel			reference:	
description:							
\$P_NUM_SPINDLES							
Calculates the maximum number of spindles in the channel							
0: No spindle programmed in channel.							
1..n: Number of spindles in channel.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified

Channel-specific system variables

INT	\$P_MSNUM						Number of master spindle	reference:
description:								
\$P_MSNUM								
Returns the number of the master spindle.								
0: No spindle programmed in channel								
1..n: Number of master spindle								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search	Not classified			link		Not classified		
INT	\$SAC_MSNUM						Number of master spindle	reference:
description:								
\$SAC_MSNUM								
Returns the number of the current master spindle.								
0: No spindle configured								
1..n: Number of master spindle								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search	Not classified			link		Not classified		
INT	\$P_MTHNUM							reference:
description:								
\$P_MTHNUM - meaningful only when magazine management is active								
Returns the number of the master toolholder.								
0: No master toolholder configured								
1..n: Number of master toolholder								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search	Not classified			link		Not classified		

Channel-specific system variables

INT	\$AC_MTHNUM						reference:	
description:								
\$AC_MTHNUM - meaningful only when magazine management is active								
Returns the number of the current master toolholder:								
0: No master toolholder configured								
1..n: Number of master toolholder								
unit:								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
BOOL	\$P_GWPS [31]						reference:	
Constant grinding wheel peripheral speed active								
description:								
\$P_GWPS[n]								
Constant grinding wheel surface speed ON if TRUE								
index 1: n: Spindle number								
unit: Linear / angular speed								
min.: FALSE max.: TRUE std: FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
DOUBLE	\$AC_FCT1LL						reference:	
Lower limit for 1st polynomial function								
description:								
Variable \$AC_FCT1LL is used to define the lower limit for the first polynomial function.								
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).								
unit:								
min.: -1,8E308 max.: 1,8E308 std: 0.0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	-	0	X		
write:	runin stp	X	7	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

Channel-specific system variables

DOUBLE	\$AC_FCT2LL		Lower limit for 2nd polynomial function			reference:	
description:							
Variable \$AC_FCT2LL is used to define the lower limit for the second polynomial function.							
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	-	0	X	
write:	runin stp	X	7	-	0	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AC_FCT3LL		Lower limit for 3rd polynomial function			reference:	
description:							
Variable \$AC_FCT3LL is used to define the lower limit for the third polynomial function.							
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	-	0	X	
write:	runin stp	X	7	-	0	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AC_FCT1UL		Upper limit for 1st polynomial function			reference:	
description:							
Variable \$AC_FCT1UL is used to define the upper limit for the first polynomial function.							
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	runin stp	X	7	-	0	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			

Channel-specific system variables

DOUBLE	\$AC_FCT2UL		Upper limit for 2nd polynomial function			reference:	
description:							
Variable \$AC_FCT2UL is used to define the upper limit for the second polynomial function.							
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
unit:							
-							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AC_FCT3UL		Upper limit for 3rd polynomial function			reference:	
description:							
Variable \$AC_FCT3UL is used to define the upper limit for the third polynomial function.							
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
unit:							
-							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AC_FCT1C [4]		Coefficients for 1st polynomial function			reference:	
description:							
Array variable \$AC_FCT1C[n] is used to program polynomial coefficients a0 - a3 for the first polynomial function.							
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
Index 1:							
n: Degree of order of coefficient 0 - 3							
unit:							
-							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	-	0	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			

Channel-specific system variables

DOUBLE	\$AC_FCT2C [4]						Coefficients for 2nd polynomial function	reference:	
description:									
Array variable \$AC_FCT2C[n] is used to program polynomial coefficients a0 - a3 for the second polynomial function.									
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).									
Index 1:		n: Degree of order of coefficient 0 - 3							
unit:									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	-	0	X			
write:	runin stp	X	/	-	0	X			
axis identifier:						Valuation:			channel-specific
block search			Not classified			link			Not classified
DOUBLE	\$AC_FCT3C [4]						Coefficients for 3rd polynomial function	reference:	
description:									
Array variable \$AC_FCT3C[n] is used to program polynomial coefficients a0 - a3 for the third polynomial function.									
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).									
Index 1:		n: Degree of order of coefficient 0 - 3							
unit:									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	-	0	X			
write:	runin stp	X	/	-	0	X			
axis identifier:						Valuation:			channel-specific
block search			Not classified			link			Not classified
DOUBLE	\$AC_FCTLL [n]						Lower limit of polynomial functions	reference:	
description:									
Array variable \$AC_FCTLL[n] is used to define the lower limit for the nth polynomial function.									
The polynomial function can also be defined by FCTDEF(polynomial no., lower limit, upper limit, a0, a1, a2, a3).									
Index 1:		The dimension is defined in \$MC_MM_NUM_FCTDEF_ELEMENTS. n: Number of the polynomial							
unit:									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	runin stp	X	/	-	0	X			
axis identifier:						Valuation:			channel-specific
block search			Not classified			link			Not classified

Channel-specific system variables

DOUBLE	\$AC_FCTUL [n]		Upper limit of polynomial functions			reference:	
description:							
Array variable \$AC_FCTUL[n] is used to define the upper limit for the nth polynomial function. The polynomial function can also be defined by FCTDEF (polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
Index 1:	The dimension is defined in \$MC_MM_NUM_FCTDEF_ELEMENTS. n: Number of the polynomial						
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		Not classified	
DOUBLE	\$AC_FCT0 [n]		1st coefficient of polynomial functions			reference:	
description:							
Array variable \$AC_FCT0[n] is used to program the a0 coefficient for the nth polynomial function. The polynomial function can also be defined by FCTDEF (polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
Index 1:	The dimension is defined in \$MC_MM_NUM_FCTDEF_ELEMENTS. n: Number of the polynomial						
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		Not classified	
DOUBLE	\$AC_FCT1 [n]		2. coefficient of polynomial functions			reference:	
description:							
Array variable \$AC_FCT1[n] is used to program the a1 coefficient for the nth polynomial function. The polynomial function can also be defined by FCTDEF (polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
Index 1:	The dimension is defined in \$MC_MM_NUM_FCTDEF_ELEMENTS. n: Number of the polynomial						
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		Not classified	

Channel-specific system variables

DOUBLE	\$AC_FCT2 [n]		3. coefficient of polynomial functions			reference:	
description:							
Array variable \$AC_FCT2[n] is used to program the a2 coefficient for the nth polynomial function. The polynomial function can also be defined by FCTDEF (polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
index 1:		The dimension is defined in \$MC_MM_NUM_FCTDEF_ELEMENTS. n: Number of the polynomial					
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	/	X	/	X	
write:	run in stp	X	/	-	0	X	
axis identifier:				valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AC_FCT3 [n]		4. coefficient of polynomial functions			reference:	
description:							
Array variable \$AC_FCT3[n] is used to program the a3 coefficient for the nth polynomial function. The polynomial function can also be defined by FCTDEF (polynomial no., lower limit, upper limit, a0, a1, a2, a3).							
index 1:		The dimension is defined in \$MC_MM_NUM_FCTDEF_ELEMENTS. n: Number of the polynomial					
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	/	X	/	X	
write:	run in stp	X	/	-	0	X	
axis identifier:				valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
INT	\$AC_ALARM_STAT		Alarm responses			reference:	
description:							
Variable \$AC_ALARM_STAT returns selected alarm responses. The following bits are possible: 0x04 Channel status NOREADY 0x40 Stop due to alarm 0x200 Signal to PLC 0x11 Axes in follow-up							
unit:							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			

Channel-specific system variables

BOOL	\$AN_ESR_TRIGGER		ESR trigger				reference:	
description:								
\$AN_ESR_TRIGGER = 1								
Trigger "Extended stop and retract"								
unit:								
-								
min.:	FALSE		max.:	TRUE		std:	FALSE	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	-	X	0	X	7	X		
write:	-	X	0	-	0	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	Not classified		
BOOL	\$AN_BUS_FAIL_TRIGGER		Reserved for Siemens				reference:	
description:								
Reserved for Siemens								
unit:								
-								
min.:	FALSE		max.:	TRUE		std:	FALSE	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	-	X	0	X	7	X		
write:	-	X	0	-	0	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	Not classified		
BOOL	\$AC_ESR_TRIGGER		ESR trigger				reference:	
description:								
\$AC_ESR_TRIGGER = 1								
Trigger "numerically controlled ESR"								
unit:								
-								
min.:	FALSE		max.:	TRUE		std:	FALSE	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	-	X	0	X	7	X		
write:	-	X	0	-	0	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	Not classified		

Channel-specific system variables

DOUBLE	\$AC_OPERATING_TIME		Operating time of NC programs in AUTOMATIC mode		reference:	
description:						
<p>\$AC_OPERATING_TIME measures the total operating time of all NC programs in AUTOMATIC mode between NC Start and end of program / NC Reset (in seconds). The timer is zeroed after each power On. The measurement can be activated with channel MD 27860 \$MC_PROCESSTIMER_MODE: Bit 0 = 1 \$AC_OPERATING_TIME measurement is active. The following measurement conditions can be selected: Bit 4 = 0 No measurement when dry run feed is active Bit 4 = 1 Measurement even when dry run feed is active Bit 5 = 0 No measurement during program test Bit 5 = 1 Measurement even during program test Bit 9 = 0 No measurement when override is 0% Bit 9 = 1 Measurement even when override is 0% Use in NC program: IF \$AC_OPERATING_TIME < 12000 GOTOB STARTMARK</p>						
unit:		s				
min.:		-1,8E308		max.: 1,8E308		std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	run in stp	X	7	X	7	X
axis identifier:				valuation: channel-specific		
block search		Not classified		link		No restrictions

Channel-specific system variables

DOUBLE	\$AC_CYCLE_TIME		Execution time of the selected NC program		reference:	
description:						
<p>\$AC_CYCLE_TIME measures the operating time of the selected NC program between NC Start and end of program/NC Reset (in seconds).</p> <p>The timer is cleared at each program start.</p> <p>The measurement can be activated using channel MD 27860 \$MC_PROCESSTIMER_MODE:</p> <p>Bit 1 = 1\$AC_CYCLE_TIME measurement of current program runtime is active.</p> <p>The following measurement conditions can be selected:</p> <p>Bit 4 = 0No measurement when dry run feed is active Bit 4 = 1Measurement even when dry run feed is active</p> <p>Bit 5 = 0No measurement during program test Bit 5 = 1Measurement even during program test</p> <p>Bit 6 = 0 Cleared even with start by ASUB and PROG_EVENTS Bit 6 = 1 Not cleared with start by ASUB and PROG_EVENTS</p> <p>Bit 8 = 0 Not cleared by a jump to program start with GOTOS Bit 8 = 1 Cleared by a jump to program start with GOTOS</p> <p>Bit 9 = 0 No measurement when override is 0% Bit 9 = 1 Measurement even when override is 0%</p> <p>Use in NC program: IF \$AC_CYCLE_TIME > 2400 GOTOF ALARM01</p>						
unit:	s					
min.:	-1,8E308		max.:	1,8E308	std:	0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	runin stp	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Channel-specific system variables

DOUBLE	\$AC_CUTTING_TIME		Machining time		reference:		
description:							
<p>\$AC_CUTTING_TIME is used to measure the machining time (in seconds). This time is defined as the operating time of the path axes (at least one is active) excluding periods when rapid traverse is active in all NC programs between NC Start and end of program / NC Reset optionally including/not including active tool. The measurement is also interrupted whenever a dwell time is active. The timer is automatically reset to zero each time the control boots with default values. The measurement can be activated using channel MD 27860 \$MC_PROCESSTIMER_MODE: Bit 2 = 1\$AC_CUTTING_TIME measurement is active. The following measurement conditions can be selected: Bit 4 = 0No measurement when dry run feed is active Bit 4 = 1Measurement even when dry run feed is active Bit 5 = 0No measurement during program test Bit 5 = 1Measurement even during program test Bit 7 = 0 Measurement only with active tool Bit 7 = 1 Measurement runs irrespective of the tool Use in NC program: IF \$AC_CUTTING_TIME> 6000 GOTOF ACT_M06</p>							
unit:	s						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		

Channel-specific system variables

DOUBLE	\$AC_REQUIRED_PARTS		Definition of the number of required workpieces	reference:		
description:						
<p>\$AC_REQUIRED_PARTS can be used to define the number of workpieces which, when reached, causes the number of actual workpieces \$AC_ACTUAL_PARTS to be reset (workpiece target).</p> <p>Channel MD 27880 \$MC_PART_COUNTER can be used to activate the display alarm "workpiece target reached" and channel VDI signal "workpiece target reached":</p> <p>Bit 0 = 1:\$AC_REQUIRED_PARTS counter is active Further meaning of bit 1 only when bit 0 = 1: Bit 1 = 0: Alarm/VDI output when \$AC_ACTUAL_PARTS matches \$AC_REQUIRED_PARTS Bit 1 = 1: Alarm/VDI output when \$AC_SPECIAL_PARTS matches \$AC_REQUIRED_PARTS</p> <p>Use in NC program: \$AC_REQUIRED_PARTS = ACTUAL_LOS e.g. for defining a batch size, a daily production output ...</p>						
unit:						
min.:	1,8E308		max.:	1,8E308		
			std:	0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	/	X	/	X
write:	run in stp	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search		Not classified		link	No restrictions	

Channel-specific system variables

DOUBLE	\$AC_TOTAL_PARTS		Total number of all machined workpieces	reference:		
description:						
The \$AC_TOTAL_PARTS counter indicates the number of all workpieces machined since the start time.						
The counter is incremented by 1 when the MC command defined in channel MD 27882\$MC_PART_COUNTER_MCODE[0] is output to the PLC.						
The counter is automatically reset only when the control boots with default values.						
Channel MD 27880 \$MC_PART_COUNTER can be used to activate the timer:						
Bit 4 = 1: \$AC_TOTAL_PARTS counter is active						
Further meaning of bits 5-6 only when bit 4 = 1:						
Bit 5 = 0: The \$AC_TOTAL_PARTS counter is incremented by 1 on a VDI output of M02/M30						
Bit 5 = 1: The \$AC_TOTAL_PARTS counter is incremented by 1 when the M command from MD PART_COUNTER_MCODE[0] is output.						
Bit 6 = 0:\$AC_TOTAL_PARTS active even during program test/block search						
Bit 6 = 1:No processing of \$AC_TOTAL_PARTS during program test/block search						
Use in NC program:						
IF \$AC_TOTAL_PARTS> SERVICE_COUNT GOTOF MARK_END						
unit:						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	runin stp	X	/	X	/	X
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions

Channel-specific system variables

DOUBLE	\$AC_ACTUAL_PARTS		Number of workpieces currently machined		reference:	
description:						
The \$AC_ACTUAL_PARTS counter records the number of all workpieces machined since the start time. When the workpiece target is reached (\$AC_REQUIRED_PARTS), the counter is automatically reset (\$AC_REQUIRED_PARTS not equal to 0).						
The counter is incremented by 1 when the MC command defined in channel MD 27882\$MC_PART_COUNTER_MCODE[1] is output to the PLC.						
The counter is automatically reset only when the control boots with default values.						
Channel MD 27880 \$MC_PART_COUNTER can be used to activate the timer:						
Bit 4 = 1: \$AC_TOTAL_PARTS counter is active						
Further meaning of bits 5-6 only when bit 4 = 1:						
Bit 5 = 0: The \$AC_TOTAL_PARTS counter is incremented by 1 on a VDI output of M02/M30						
Bit 5 = 1: The \$AC_TOTAL_PARTS counter is incremented by 1 when the M command from MD PART_COUNTER_MCODE[0] is output.						
Bit 6 = 0:\$AC_TOTAL_PARTS active even during program test/block search						
Bit 6 = 1:No processing of \$AC_TOTAL_PARTS during program test/block search						
Use in NC program:						
IF \$AC_ACTUAL_PARTS == 0 GOTOF NEW_RUN						
unit:						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	runin stp	X	/	X	/	X
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions

Channel-specific system variables

DOUBLE	\$AC_SPECIAL_PARTS		Number of workpieces counter by user		reference:	
description:						
The \$AC_SPECIAL_PARTS counter allows the user to apply his own strategy for counting workpieces. Channel MD 27880 \$MC_PART_COUNTER can be used to activate the timer:						
Bit 12 = 1: \$AC_SPECIAL_PARTS counter is active						
Further meaning of bits 13-15 only when bit 12 = 1:						
Bit 13 = 0: The \$AC_SPECIAL_PARTS counter is incremented by 1 on a VDI output of M02/M30						
Bit 13 = 1: The \$AC_SPECIAL_PARTS counter is incremented by 1 when the M command from MD PART_COUNTER_MCODE[2] is output.						
Bit 14 = 0: \$AC_SPECIAL_PARTS active even during program test/block search						
Bit 14 = 1: No processing of \$AC_SPECIAL_PARTS during program test/block search						
Use in NC program:						
\$AC_SPECIAL_PARTS = R20						
unit:						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	runin stp	X	/	X	/	X
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
INT	\$AC_G0MODE		Path traversal with G0		reference:	
description:						
\$AC_G0MODE						
0: G0 not active						
1: G0 and linear interpolation active						
2: G0 and non-linear interpolation active.						
The response of the path axes to G0 depends on machine data						
\$MC_G0_LINEAR_MODE (Siemens mode) or \$MC_EXTERN_G0_LINEAR_MODE (ISO mode):						
With linear interpolation, the path axes traverse together,						
With non-linear interpolation, the path axes are traversed as positioning axes.						
unit:						
min.: 0 max.: 2 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		Not classified

Channel-specific system variables

INT	\$AC_MEAS_SEMA		Semaphore to measurement interface			reference:	
description:							
Variable for workpiece and tool measurement.							
Variable \$AA_MEAS_SEMA is used to synchronize measuring processes. The variable should be set to 1 before each assignment of the measurement interface and set to 0 when releasing it. Only one measurement interface is available for each channel and should be assigned only if the \$AC_MEAS_SEMA contains the value 0.							
Application:							
if (\$AC_MEAS_SEMA == 0)							
\$AC_MEAS_SEMA = 1 ; Assign measurement interface							
endif							
unit:							
-							
min.:		0		max.:		1	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			channel-specific
block search		Not classified			link		Not classified

INT	\$AC_MEAS_LATCH [4]		Unlatch measuring points			reference:	
description:							
Variable for workpiece and tool measurement.							
Axial variable \$AA_MEAS_LATCH[n] is used to unlatch all current axis positions with reference to a selected coordinate system. Variable \$AC_MEAS_P1_COORD is used to select the coordinate system.							
\$AC_MEAS_P4_COORD.							
Application:							
\$AA_MEAS_LATCH[0] = 1 ; Unlatch 1st measuring point of all axes							
\$AA_MEAS_LATCH[1] = 1 ; Unlatch 2nd measuring point of all axes							
\$AA_MEAS_LATCH[2] = 1 ; Unlatch 3rd measuring point of all axes							
\$AA_MEAS_LATCH[3] = 1 ; Unlatch 4th measuring point of all axes							
The unlatched measuring point is stored in \$AA_MEAS_POINT1[ax].							
index 1:		0: 1st measuring point, .., 3: 4th measuring point					
unit:							
-							
min.:		0		max.:		1	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:			channel-specific
block search		Not classified			link		Not classified

Channel-specific system variables

INT	\$AC_MEAS_P1_COORD		Coordinate system 1st measuring point		reference:	
description:						
Variable for workpiece and tool measurement.						
Variable \$AC_MEAS_P1_COORD is used to set the coordinate system frame for the 1st measuring point.						
Application:						
\$AC_MEAS_P1_COORD = 0 ; WCS						
\$AC_MEAS_P1_COORD = 1 ; BCS						
\$AC_MEAS_P1_COORD = 2 ; MCS						
\$AC_MEAS_P1_COORD = 3 ; SZS						
unit:						
min.: 0 max.: 3 std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link	Not classified	
INT	\$AC_MEAS_P2_COORD		Coordinate system 2nd measuring point		reference:	
description:						
Variable for workpiece and tool measurement.						
Variable \$AC_MEAS_P2_COORD is used to set the coordinate system frame for the 2nd measuring point.						
Application:						
\$AC_MEAS_P2_COORD = 0 ; WCS						
\$AC_MEAS_P2_COORD = 1 ; BCS						
\$AC_MEAS_P2_COORD = 2 ; MCS						
\$AC_MEAS_P2_COORD = 3 ; SZS						
unit:						
min.: 0 max.: 3 std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link	Not classified	

Channel-specific system variables

INT	\$AC_MEAS_P3_COORD		Coordinate system 3rd measuring point		reference:	
description:						
Variable for workpiece and tool measurement.						
Variable \$AC_MEAS_P3_COORD is used to set the coordinate system frame for the 3rd measuring point.						
Application:						
\$AC_MEAS_P3_COORD = 0 ; WCS						
\$AC_MEAS_P3_COORD = 1 ; BCS						
\$AC_MEAS_P3_COORD = 2 ; MCS						
\$AC_MEAS_P3_COORD = 3 ; SZS						
unit:						
min.: 0 max.: 3 std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		Not classified
INT	\$AC_MEAS_P4_COORD		Coordinate system 4th measuring point		reference:	
description:						
Variable for workpiece and tool measurement.						
Variable \$AC_MEAS_P4_COORD is used to set the coordinate system frame for the 4th measuring point.						
Application:						
\$AC_MEAS_P4_COORD = 0 ; WCS						
\$AC_MEAS_P4_COORD = 1 ; BCS						
\$AC_MEAS_P4_COORD = 2 ; MCS						
\$AC_MEAS_P4_COORD = 3 ; SZS						
unit:						
min.: 0 max.: 3 std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		Not classified

Channel-specific system variables

INT	\$AC_MEAS_SET_COORD		Coordinate system of position setpoint			reference:	
description:							
Variable for workpiece and tool measurement.							
Variable \$AC_MEAS_SET_COORD is used to set the coordinate system for the position setpoint.							
Application:							
\$AC_MEAS_SET_COORD = 0 ; WCS							
\$AC_MEAS_SET_COORD = 1 ; BCS							
\$AC_MEAS_SET_COORD = 2 ; MCS							
\$AC_MEAS_SET_COORD = 3 ; SZS							
unit:							
min.: 0 max.: 3 std.: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	
DOUBLE	\$AC_MEAS_WP_SETANGLE		workpiece position angle setpoint			reference:	
description:							
Variable for workpiece and tool measurement.							
Axial variable \$AA_MEAS_WP_SETANGLE is used to define an angle setpoint for the workpiece position.							
unit:							
deg.							
min.: -1,8E308 max.: 1,8E308 std.: 0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	
DOUBLE	\$AC_MEAS_CORNER_SETANGLE		Cutting angle setpoint for workpiece corner			reference:	
description:							
Variable for workpiece and tool measurement.							
Variable \$AA_MEAS_CORNER_SETANGLE is used to define an angle setpoint for the corner of a workpiece.							
unit:							
deg.							
min.: -1,8E308 max.: 1,8E308 std.: 0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	

Channel-specific system variables

INT	\$AC_MEAS_DIR_APPROACH	Approach direction to workpiece					reference:	
description:								
Variable for workpiece and tool measurement.								
Variable \$AA_MEAS_DIR_APPROACH is used to define the direction of approach to the workpiece.								
The following values are possible:								
0:+x								
1:-x								
2:+y								
3:-y								
4:+z								
5:-z								
unit:								
-								
min.:		0		max.:		5		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		Not classified	
INT	\$AC_MEAS_ACT_PLANE	working plane for workpiece					reference:	
description:								
Variable for workpiece and tool measurement.								
Variable \$AC_MEAS_ACT_PLANE is used to define the working plane. The working plane is needed in order to define the tool orientation.								
The following values are possible:								
0: G17 working plane x/y infeed direction z								
1: G18 working plane z/x infeed direction y								
2: G19 working plane y/z infeed direction x								
unit:								
-								
min.:		0		max.:		2		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		Not classified	

Channel-specific system variables

INT	\$AC_MEAS_FINE_TRANS			Fine offset	reference:	
description:						
Variable for workpiece and tool measurement.						
When measuring workpieces, translation offsets can be entered in the fine offset component of the selected frame. Variable \$AC_MEAS_FINE_TRANS is used for this purpose.						
The following values are possible:						
0: Translation offset is entered in coarse offset						
1: Translation offset is entered in fine offset						
unit:						
min.: 0 max.: 1 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		Not classified

Channel-specific system variables

INT	\$AC_MEAS_CHSFR	Frame selection for system frames	reference:			
description:						
Variable for workpiece and tool measurement.						
In order to convert a position from one coordinate system to another, \$AC_MEAS_CHSFR can be used to define the composition of the desired frame chain. The value of the variable should be selected according to the system frame bitmask \$MC_MM_SYSTEM_FRAME_MASK.						
Application:						
\$AC_MEAS_CHSFR = 'B1001'						
Only the system frames for preset actual value and TOROT are included in the calculation of the new overall frame.						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link Not classified		
INT	\$AC_MEAS_NCBFR	Frame selection for global basic frames	reference:			
description:						
Variable for workpiece and tool measurement.						
In order to convert a position from one coordinate system to another, \$AC_MEAS_NCBFR can be used to define the composition of the desired frame chain. The value of the variable should be interpreted as a bitmask from 0x0 to 0xFFFF for the global basic frames (up to 16 frames in total).						
Application:						
\$AC_MEAS_NCBFR = 'B11'						
Only the first two global basic frames are included in the calculation of the new overall frame.						
unit:						
min.: 0 max.: 0xFFFF std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link Not classified		

Channel-specific system variables

INT	\$AC_MEAS_CHBFR			Frame selection for channel basic frames	reference:	
description:						
Variable for workpiece and tool measurement.						
In order to convert a position from one coordinate system to another, \$AC_MEAS_CHBFR can be used to define the composition of the desired frame chain. The value of the variable should be interpreted as a bitmask from 0x0 to 0xFFFF for the channel basic frames (up to 16 frames in total).						
Application:						
\$AC_MEAS_CHBFR = 'B11'						
Only the first two channel basic frames are included in the calculation of the new overall frame.						
unit:						
min.: 0 max.: 0xFFFF std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	X	-	7	X	7	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		Not classified
INT	\$AC_MEAS_UIFR			Frame selection for settable frames	reference:	
description:						
Variable for workpiece and tool measurement.						
In order to convert a position from one coordinate system to another, \$AC_MEAS_UIFR can be used to define the composition of the desired frame chain. The variable range for the settable frames is from 0 to 99 (up to 100 in total).						
Application:						
\$AC_MEAS_UIFR = 1						
The G54 frame is included in the calculation of the new overall frame.						
unit:						
min.: 0 max.: 99 std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	X	-	7	X	7	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		Not classified

Channel-specific system variables

INT	\$AC_MEAS_PFRAME		Frame selection for the prog. frame	reference:		
description:						
Variable for workpiece and tool measurement.						
In order to convert a position from one coordinate system to another, \$AC_MEAS_PFRAME can be used to define the composition of the desired frame chain.						
The following values are allowed:						
\$AC_MEAS_PFRAME = 1 ; Programmable frame is not included in calculation						
\$AC_MEAS_PFRAME = 0 ; Programmable frame is included in calculation						
unit:						
min.: 0 max.: 1 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:			Valuation:			channel-specific
block search		Not classified		link		Not classified
INT	\$AC_MEAS_T_NUMBER		Tool selection	reference:		
description:						
Variable for workpiece and tool measurement.						
Variable \$AC_MEAS_T_NUMBER is used to select the tool for workpiece and tool measurement. The tool number of the active tool must match the selected tool. The active tool is included in the calculation when T0 is selected. If no tool is selected, the tool selected by \$AC_MEAS_T_NUMBER is used in the calculation.						
unit:						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:			Valuation:			channel-specific
block search		Not classified		link		Not classified

Channel-specific system variables

INT	\$AC_MEAS_TOOL_MASK			Tool position	reference:	
description:						
Variable for workpiece and tool measurement.						
Variable \$AC_MEAS_TOOL_MASK specifies the tool position and considers the tool lengths for workpiece and tool measurement.						
The following values are possible:						
0x0:Default setting; all tool lengths are included						
0x1:The radius of the tool is not included in the calculation						
0x2:The tool is positioned in the x direction (G19)						
0x4:The tool is positioned in the y direction (G18)						
0x8:The tool is positioned in the z direction (G17)						
0x10:The length of the tool is not included in the calculation.						
0x20:The length of the active tool is included in the transformation of the coordinates of a position.						
0x40:The tool is positioned in the x direction (G19)						
0x80:The tool is positioned in the y direction (G18)						
0x100:The tool is positioned in the z direction (G17)						
0x200:Differences in the tool lengths are subtracted.						
Whether or not the radius of a milling tool is included in the calculation is determined from the tool position and direction of approach. If the direction of approach is not specified explicitly, it is derived from the selected plane. The direction of approach is in -z for G17, -y for G18 and -x for G19.						
unit:						
min.: 0 max.: 0x10 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	Not classified	
INT	\$AC_MEAS_D_NUMBER			Cutting edge selection	reference:	
description:						
Variable for workpiece and tool measurement.						
Variable \$AC_MEAS_D_NUMBER is used to select the tool cutting edge for workpiece and tool measurement. The tool cutting edge number of the active tool must match the selected cutting edge. The active cutting edge is included in the calculation when D0 is selected. If no tool is selected, the cutting edge selected by \$AC_MEAS_D_NUMBER is used in the calculation.						
unit:						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	Not classified	

Channel-specific system variables

INT	\$AC_MEAS_TYPE	Measurement type selection	reference:				
description:							
Variable for workpiece and tool measurement.							
Variable \$AC_MEAS_TYPE is used to select the type of measurement.							
The following values are possible:							
0: Default setting							
1: x edge							
2: y edge							
3: z edge							
4: Corner 1							
5: Corner 2							
6: Corner 3							
7: Corner 4							
8: Hole							
9: Shaft							
10: Tool length							
11: Tool diameter							
12: Groove							
13: Web							
14: Preset actual value memory for geo and special axes							
15: Preset actual value memory for special axes only							
16: Inclined edge							
17: Plane_Angles (2 solid angles in one plane)							
18: Plane_Normal (3 solid angles in one plane with specified setpoint)							
19: Dimension_1 (1-dimensional setpoint specification)							
20: Dimension_2 (2-dimensional setpoint specification)							
21: Dimension_3 (3-dimensional setpoint specification)							
22: ToolMagnifier (ShopTurn: Measurement of tool lengths with magnifier)							
23: ToolMarkedPos (ShopTurn: Measurement of a tool length with marked position)							
24: Coordinate transformation of a position							
25: Rectangle							
unit:							
min.: 0 max.: 25 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	X	-	7	X	7	-	
axis identifier:					Valuation:		channel-specific
block search		Not classified		link		Not classified	

Channel-specific system variables

INT	\$AC_MEAS_VALID	validity bits of measurement variables.	reference:			
description:						
Variable for workpiece and tool measurement.						
Variable \$AC_MEAS_VALID is used to define which system variables are valid for the current measurement. The value should be set to 0 before every measurement						
The individual bits are set implicitly when the corresponding variables are written.						
Bit 0: \$AA_MEAS_POINT1[axis]						
Bit 1: \$AA_MEAS_POINT2[axis]						
Bit 2:\$AA_MEAS_POINT3[axis]						
Bit 3: \$AA_MEAS_POINT4[axis]						
Bit 4: \$AA_MEAS_SETPOINT[axis]						
Bit 5: \$AC_MEAS_WP_SETANGLE						
Bit 6: \$AC_MEAS_CORNER_SETANGLE						
Bit 7: \$AC_MEAS_T_NUMBER						
Bit 8: \$AC_MEAS_D_NUMBER						
Bit 9: \$AC_MEAS_DIR_APPROACH						
Bit 10: \$AC_MEAS_ACT_PLANE						
Bit 11:\$AC_MEAS_FRAME_SELECT						
Bit 12: \$AC_MEAS_TYPE						
Bit 13: \$AC_MEAS_FINE_TRANS						
Bit 14: \$AA_MEAS_SETANGLE[axis]						
Bit 15: \$AC_MEAS_SCALEUNIT						
Bit 16: \$AC_MEAS_TOOL_MASK						
Bit 17: \$AC_MEAS_P1_COORD						
Bit 18: \$AC_MEAS_P2_COORD						
Bit 19: \$AC_MEAS_P3_COORD						
Bit 20: \$AC_MEAS_P4_COORD						
Bit 21: \$AC_MEAS_SET_COORD						
Bit 22: \$AC_MEAS_CHSFR						
Bit 23: \$AC_MEAS_NCBFR						
Bit 24: \$AC_MEAS_CHBFR						
Bit 25: \$AC_MEAS_UIFR						
Bit 26: \$AC_MEAS_PFRAME						
unit:						
min.: 2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	Not classified	

Channel-specific system variables

FRAME	\$AC_MEAS_FRAME						Result frame for workpiece measurement	reference:	
description:									
Variable for workpiece and tool measurement.									
Variable \$AC_MEAS_FRAME is the result frame for workpiece measurement. This frame is calculated by the MEASURE() function or a PI service and is not part of the active frame chain. The calculated result frame can then be copied into the selected frame (\$AC_MEAS_FRAME_SELECT) by the part program or a further PI service.									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search			Not classified		link		Not classified		
DOUBLE	\$AC_MEAS_WP_ANGLE						workpiece position angle	reference:	
description:									
Variable for workpiece and tool measurement.									
Variable \$AC_MEAS_WP_ANGLE is the calculated workpiece position angle for workpiece measurement. The value specifies the relative position of the workpiece in the workpiece coordinate system (WCS).									
unit:									
deg.									
min.:									
-1,8E308									
max.:									
1,8E308									
std:									
0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search			Not classified		link		Not classified		
DOUBLE	\$AC_MEAS_CORNER_ANGLE						Angle of a corner	reference:	
description:									
Variable for workpiece and tool measurement.									
Variable \$AC_MEAS_CORNER_ANGLE is the calculated cutting angle of the corner for workpiece measurement.									
unit:									
deg.									
min.:									
-1,8E308									
max.:									
1,8E308									
std:									
0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search			Not classified		link		Not classified		

Channel-specific system variables

DOUBLE	\$AC_MEAS_DIAMETER		Tool diameter				reference:	
description:								
Variable for workpiece and tool measurement.								
Variable \$AC_MEAS_DIAMETER is the calculated diameter for tool measurement.								
unit:	mm							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search	Not classified			link		Not classified		
DOUBLE	\$AC_MEAS_TOOL_LENGTH		Tool length				reference:	
description:								
Variable for workpiece and tool measurement.								
Variable \$AC_MEAS_TOOL_LENGTH is the calculated tool length for tool measurement.								
unit:	mm							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search	Not classified			link		Not classified		
DOUBLE	\$AC_MEAS_RESULTS [10]		Measurement results				reference:	
description:								
Variable for workpiece and tool measurement.								
Array variable \$AC_MEAS_RESULTS[n] contains the calculation results. The measurement type (\$AC_MEAS_TYPE) determines which elements of the array are written.								
index 1:	Measurement results							
unit:	-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search	Not classified			link		Not classified		

Channel-specific system variables

INT	\$AC_MEAS_SCALEUNIT						Measurement unit	reference:
description:								
Variable for workpiece and tool measurement.								
Variable \$AC_MEAS_SCALEUNIT defines the unit of measurement according to the configuration for input and output values.								
The following values are possible:								
0: Unit of measurement as configured (default setting)								
1: Unit of measurement with reference to active G code is INCH: G70/G700 METRIC: G71/G710								
unit:								
min.: 0 max.: 1 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	X	7	-		
axis identifier:				Valuation: channel-specific				
block search		Not classified		link		Not classified		
INT	\$P_CHANNO							reference:
description:								
Interrogate current channel number.								
unit:								
min.: 1 max.: 10 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search		Not classified		link		Not classified		
INT	\$AC_SERUPRO							reference:
description:								
\$AC_SERUPRO								
Interrogate whether search type Serupro is active. (Serupro: "Block search via program test")								
Can be used in Synacts and the part program								
\$AC_SERUPRO == 0 Search type Serupro is not active								
\$AC_SERUPRO == 1 Search type Serupro is active								
unit:								
min.: 0 max.: 1 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search		Not classified		link		No restrictions		

Channel-specific system variables

DOUBLE	\$AC_VACTBF		Path velocity in the BCS			reference:	
description:							
\$AC_VACTBF supplies the path velocity in the basic coordinate system. FGroup and FGREF are taken into account.							
unit:		Linear / angular speed					
min.:		-1,8E308	max.:		1,8E308	std: 0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AC_VACTWF		Path velocity in the WCS			reference:	
description:							
Path velocity in workpiece coordinate system. FGROUP and FGREF are taken into account.							
unit:		Linear / angular speed					
min.:		-1,8E308	max.:		1,8E308	std: 0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
FRAME	\$P_CHBFR0		Access to 1st channel basic frame			reference:	
description:							
Access to 1st channel basic frame. Corresponds to \$P_CHBFR[0].							
unit:							
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
FRAME	\$P_CHBFR1		Access to 2nd channel basic frame			reference:	

Channel-specific system variables

description:						
Access to 2nd channel basic frame. Corresponds to \$P_CHBFR[1].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFR2			Access to 3rd channel basic frame		reference:
description:						
Access to 3rd channel basic frame. Corresponds to \$P_CHBFR[2].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFR3			Access to 4th channel basic frame		reference:
description:						
Access to 4th channel basic frame. Corresponds to \$P_CHBFR[3].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFR4			Access to 5th channel basic frame		reference:
description:						
Access to 5th channel basic frame. Corresponds to \$P_CHBFR[4].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		

Channel-specific system variables

FRAME	\$P_CHBFR5						Access to 6th channel basic frame	reference:	
description:									
Access to 6th channel basic frame. Corresponds to \$P_CHBFR[5].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_CHBFR6						Access to 7th channel basic frame	reference:	
description:									
Access to 7th channel basic frame. Corresponds to \$P_CHBFR[6].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_CHBFR7						Access to 8th channel basic frame	reference:	
description:									
Access to 8th channel basic frame. Corresponds to \$P_CHBFR[7].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_CHBFR8						Access to 9th channel basic frame	reference:	

Channel-specific system variables

description:						
Access to 9th channel basic frame. Corresponds to \$P_CHBFR[8].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions
FRAME	\$P_CHBFR9			Access to 10th channel basic frame		reference:
description:						
Access to 10th channel basic frame. Corresponds to \$P_CHBFR[9].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions
FRAME	\$P_CHBFR10			Access to 11th channel basic frame		reference:
description:						
Access to 11th channel basic frame. Corresponds to \$P_CHBFR[10].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions
FRAME	\$P_CHBFR11			Access to 12th channel basic frame		reference:
description:						
Access to 12th channel basic frame. Corresponds to \$P_CHBFR[11].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions

Channel-specific system variables

FRAME	\$P_CHBFR12		Access to 13th channel basic frame			reference:	
description:							
Access to 13th channel basic frame. Corresponds to \$P_CHBFR[12].							
unit:							
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search		Not classified			link		No restrictions
FRAME	\$P_CHBFR13		Access to 14th channel basic frame			reference:	
description:							
Access to 14th channel basic frame. Corresponds to \$P_CHBFR[13].							
unit:							
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search		Not classified			link		No restrictions
FRAME	\$P_CHBFR14		Access to 15th channel basic frame			reference:	
description:							
Access to 15th channel basic frame. Corresponds to \$P_CHBFR[14].							
unit:							
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search		Not classified			link		No restrictions
FRAME	\$P_CHBFR15		Access to 16th channel basic frame			reference:	

Channel-specific system variables

description:						
Access to 16th channel basic frame. Corresponds to \$P_CHBFR[15].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
FRAME	\$P_NCBFR0			Access to 1st NCU-global basic frame		reference:
description:						
Access to 1st NCU-global basic frame. Corresponds to \$P_NCBFR[0].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
FRAME	\$P_NCBFR1			Access to 2nd NCU-global basic frame		reference:
description:						
Access to 2nd NCU-global basic frame. Corresponds to \$P_NCBFR[1].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
FRAME	\$P_NCBFR2			Access to 3rd NCU-global basic frame		reference:
description:						
Access to 3rd NCU-global basic frame. Corresponds to \$P_NCBFR[2].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

Channel-specific system variables

FRAME	\$P_NCBFR3						Access to 4th NCU-global basic frame	reference:	
description:									
Access to 4th NCU-global basic frame. Corresponds to \$P_NCBFR[3].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_NCBFR4						Access to 5th NCU-global basic frame	reference:	
description:									
Access to 5th NCU-global basic frame. Corresponds to \$P_NCBFR[4].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_NCBFR5						Access to 6th NCU-global basic frame	reference:	
description:									
Access to 6th NCU-global basic frame. Corresponds to \$P_NCBFR[5].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_NCBFR6						Access to 7th NCU-global basic frame	reference:	

Channel-specific system variables

description:						
Access to 7th NCU-global basic frame. Corresponds to \$P_NCBFR[6].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_NCBFR7			Access to 8th NCU-global basic frame		reference:
description:						
Access to 8th NCU-global basic frame. Corresponds to \$P_NCBFR[7].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_NCBFR8			Access to 9th NCU-global basic frame		reference:
description:						
Access to 9th NCU-global basic frame. Corresponds to \$P_NCBFR[8].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_NCBFR9			Access to 10th NCU-global basic frame		reference:
description:						
Access to 10th NCU-global basic frame. Corresponds to \$P_NCBFR[9].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		

Channel-specific system variables

FRAME	\$P_NCBFR10						Access to 11th NCU-global basic frame	reference:	
description:									
Access to 11th NCU-global basic frame. Corresponds to \$P_NCBFR[10].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_NCBFR11						Access to 12th NCU-global basic frame	reference:	
description:									
Access to 12th NCU-global basic frame. Corresponds to \$P_NCBFR[11].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_NCBFR12						Access to 13th NCU-global basic frame	reference:	
description:									
Access to 13th NCU-global basic frame. Corresponds to \$P_NCBFR[12].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search		Not classified			link	No restrictions			
FRAME	\$P_NCBFR13						Access to 14th NCU-global basic frame	reference:	

Channel-specific system variables

description:						
Access to 14th NCU-global basic frame. Corresponds to \$P_NCBFR[13].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified			link No restrictions			
FRAME	\$P_NCBFR14			Access to 15th NCU-global basic frame		reference:
description:						
Access to 15th NCU-global basic frame. Corresponds to \$P_NCBFR[14].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified			link No restrictions			
FRAME	\$P_NCBFR15			Access to 16th NCU-global basic frame		reference:
description:						
Access to 16th NCU-global basic frame. Corresponds to \$P_NCBFR[15].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified			link No restrictions			
FRAME	\$P_CHBFRAME0			Access to 1st current channel basic frame		reference:
description:						
Access to 1st current channel basic frame. Corresponds to \$P_CHBFRAME[0].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified			link No restrictions			

Channel-specific system variables

FRAME	\$P_CHBFRAME1		Access to 2nd current channel basic frame	reference:		
description:						
Access to 2nd current channel basic frame. Corresponds to \$P_CHBFRAME[1].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:			Valuation:			channel-specific
block search		Not classified		link		No restrictions
FRAME	\$P_CHBFRAME2		Access to 3rd current channel basic frame	reference:		
description:						
Access to 3rd current channel basic frame. Corresponds to \$P_CHBFRAME[2].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:			Valuation:			channel-specific
block search		Not classified		link		No restrictions
FRAME	\$P_CHBFRAME3		Access to 4th current channel basic frame	reference:		
description:						
Access to 4th current channel basic frame. Corresponds to \$P_CHBFRAME[3].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:			Valuation:			channel-specific
block search		Not classified		link		No restrictions
FRAME	\$P_CHBFRAME4		Access to 5th current channel basic frame	reference:		

Channel-specific system variables

description:						
Access to 5th current channel basic frame. Corresponds to \$P_CHBFRAME[4].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFRAME5			Access to 6th current channel basic frame		reference:
description:						
Access to 6th current channel basic frame. Corresponds to \$P_CHBFRAME[5].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFRAME6			Access to 7th current channel basic frame		reference:
description:						
Access to 7th current channel basic frame. Corresponds to \$P_CHBFRAME[6].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFRAME7			Access to 8th current channel basic frame		reference:
description:						
Access to 8th current channel basic frame. Corresponds to \$P_CHBFRAME[7].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		

Channel-specific system variables

FRAME	\$P_CHBFRAME8		Access to 9th current channel basic frame		reference:	
description:						
Access to 9th current channel basic frame. Corresponds to \$P_CHBFRAME[8].						
unit:						
min.:						
max.:						
std:						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link	No restrictions	
FRAME	\$P_CHBFRAME9		Access to 10th current channel basic frame		reference:	
description:						
Access to 10th current channel basic frame. Corresponds to \$P_CHBFRAME[9].						
unit:						
min.:						
max.:						
std:						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link	No restrictions	
FRAME	\$P_CHBFRAME10		Access to 11th current channel basic frame		reference:	
description:						
Access to 11th current channel basic frame. Corresponds to \$P_CHBFRAME[10].						
unit:						
min.:						
max.:						
std:						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link	No restrictions	
FRAME	\$P_CHBFRAME11		Access to 12th current channel basic frame		reference:	

Channel-specific system variables

description:						
Access to 12th current channel basic frame. Corresponds to \$P_CHBFRAME[11].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFRAME12			Access to 13th current channel basic frame		reference:
description:						
Access to 13th current channel basic frame. Corresponds to \$P_CHBFRAME[12].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFRAME13			Access to 14th current channel basic frame		reference:
description:						
Access to 14th current channel basic frame. Corresponds to \$P_CHBFRAME[13].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
FRAME	\$P_CHBFRAME14			Access to 15th current channel basic frame		reference:
description:						
Access to 15th current channel basic frame. Corresponds to \$P_CHBFRAME[14].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		

Channel-specific system variables

FRAME	\$P_CHBFRAME15						Access to 16th current channel basic frame	reference:	
description:									
Access to 16th current channel basic frame. Corresponds to \$P_CHBFRAME[15].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:						Valuation: channel-specific			
block search		Not classified				link		No restrictions	
FRAME	\$P_NCBFRAME0						1. 1st current NCU-global basic frame	reference:	
description:									
Access to 1st current NCU-global basic frame. Corresponds to \$P_NCBFRAME[0].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:						Valuation: channel-specific			
block search		Not classified				link		No restrictions	
FRAME	\$P_NCBFRAME1						2. 1st current NCU-global basic frame	reference:	
description:									
Access to 2nd current NCU-global basic frame. Corresponds to \$P_NCBFRAME[1].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:						Valuation: channel-specific			
block search		Not classified				link		No restrictions	
FRAME	\$P_NCBFRAME2						3. 1st current NCU-global basic frame	reference:	

Channel-specific system variables

description:						
Access to 3rd current NCU-global basic frame. Corresponds to \$P_NCBFRAME[2].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
FRAME	\$P_NCBFRAME3			4. 1st current NCU-global basic frame		reference:
description:						
Access to 4th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[3].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
FRAME	\$P_NCBFRAME4			5. 1st current NCU-global basic frame		reference:
description:						
Access to 5th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[4].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
FRAME	\$P_NCBFRAME5			6. 1st current NCU-global basic frame		reference:
description:						
Access to 6th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[5].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

Channel-specific system variables

FRAME	\$P_NCBFRAME6		7. 1st current NCU-global basic frame		reference:	
description:						
Access to 7th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[6].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link		No restrictions
FRAME	\$P_NCBFRAME7		8. 1st current NCU-global basic frame		reference:	
description:						
Access to 8th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[7].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link		No restrictions
FRAME	\$P_NCBFRAME8		9. 1st current NCU-global basic frame		reference:	
description:						
Access to 9th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[8].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link		No restrictions
FRAME	\$P_NCBFRAME9		10. 1st current NCU-global basic frame		reference:	

Channel-specific system variables

description:						
Access to 10th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[9].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions
FRAME	\$P_NCBFRAME10			11. 1st current NCU-global basic frame		reference:
description:						
Access to 11th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[10].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions
FRAME	\$P_NCBFRAME11			12. 1st current NCU-global basic frame		reference:
description:						
Access to 12th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[11].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions
FRAME	\$P_NCBFRAME12			13. 1st current NCU-global basic frame		reference:
description:						
Access to 13th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[12].						
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions

Channel-specific system variables

FRAME	\$P_NCBFRAME13						14. 1st current NCU-global basic frame	reference:	
description:									
Access to 14th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[13].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search		Not classified			link		No restrictions		
FRAME	\$P_NCBFRAME14						15. 1st current NCU-global basic frame	reference:	
description:									
Access to 15th current NCU-global basic frame. Corresponds to \$P_NCBFRAME[14].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search		Not classified			link		No restrictions		
FRAME	\$P_NCBFRAME15						16. 1st current NCU-global basic frame	reference:	
description:									
16. 16th current NCU-global basic frame Corresponds to \$P_NCBFRAME[15].									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:					Valuation:		channel-specific		
block search		Not classified			link		No restrictions		

Channel-specific system variables

INT	\$P_TRAFO_CHAIN [4]			Programmed chained transformation	reference:	
description:						
\$P_TRAFO_CHAIN[n] Code numbers of chained transformations of programmed TRACON according to machine data \$MC_TRAFO_TYPE_m. . Supplies the code number of the nth chained transformation of the programmed TRACON, starting with n=0. \$P_TRAFO_CHAIN[0] is the 1st chained transformation if a TRACON is programmed. If a TRACON command is not programmed, the code number of the programmed transformation is returned (e.g. 257 for TRANSMIT). If there is no transformation programmed, the value '0' is returned. \$P_TRAFO_CHAIN[1] is the 2nd chained transformation if a TRACON is programmed. Otherwise a '0' is returned. The same applies accordingly for \$P_TRAFO_CHAIN[2] and \$P_TRAFO_CHAIN[3].						
Index 1: n: Index of the chained transformation.						
unit: -						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified
INT	\$AC_TRAFO_CHAIN [4]			Active chained transformation	reference:	
description:						
\$AC_TRAFO_CHAIN[n] Code numbers of chained transformations of active TRACON according to machine data \$MC_TRAFO_TYPE_m. . Supplies the code number of the nth chained transformation of the active TRACON, starting with n=0. \$AC_TRAFO_CHAIN[0] is the 1st chained transformation if a TRACON is programmed. If a TRACON command is not active, the code number of the programmed transformation is returned (e.g. 257 for TRANSMIT). If no transformation is active, the value '0' is returned. \$AC_TRAFO_CHAIN[1] is the 2nd chained transformation if a TRACON is active. Otherwise a '0' is returned. The same applies accordingly for \$AC_TRAFO_CHAIN[2] and \$AC_TRAFO_CHAIN[3].						
Index 1: n: Index of the chained transformation.						
unit: -						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified

Channel-specific system variables

DOUBLE	\$AC_MEAS_INPUT [10]		measuring input parameter			reference:	
description:							
Variable for workpiece and tool measurement.							
Array variable \$AC_MEAS_INPUT[n] is used to enter measuring input parameters for workpiece and tool measurement. The control effect of the parameters is documented in the measurement variants.							
Index 1: n=0..9: Measuring input parameter							
unit: -							
min.: -1,8E308		max.: 1,8E308		std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation: channel-specific			
block search Not classified				link Not classified			
INT	\$A_DBSB [1024]		PLC data byte (signed)			reference:	
description:							
Array variable \$A_DBSB[n] is used to read and write a data byte (8 bits) from PLC. The byte is signed and can be read and written in the range from -128 to 127.							
A memory area is reserved in the communications buffer of these modules (DPR) for high-speed data exchange between PLC and NC. The PLC uses function calls (FC) and the NCK uses \$ variables to access this memory.							
See also \$A_DBB[n].							
Index 1: n: Position offset within I/O area 0 - ...							
unit: -							
min.: -128		max.: 127		std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	Mrun syn	X	/	-	0	X	
axis identifier:				Valuation: channel-specific			
block search Not classified				link Not classified			
INT	\$A_DBSW [1024]		PLC data word (signed)			reference:	
description:							
Array variable \$A_DBSW[n] is used to read and write a data word (16 bits) from PLC. The word is signed and can be read and written in the range from -32768 to 32767.							
A memory area is reserved in the communications buffer of these modules (DPR) for high-speed data exchange between PLC and NC. The PLC uses function calls (FC) and the NCK uses \$ variables to access this memory.							
See also \$A_DBW[n].							

Channel-specific system variables

Index 1:	n: Position offset within I/O area 0 - ...					
unit:						
min.:	-32768	max.:	32767	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	Mrun syn	X	7	-	0	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$P_SUB_AXFCT			Substitution active		reference:
description:						
Returns a bitmask according to machine data \$MA_AXIS_LANG_SUB_MASK. An enabled bit means that the substitution of the corresponding function is active:						
Bit 0 = 1:Automatic gear stage change (M40)						
and direct gear stage change (M41-M45)						
Bit 1 = 1:Spindle positioning with SPOS/SPOSAM19						
unit:						
min.:	0	max.:	3	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
INT	\$P_SUB_GEAR			Programmed gear stage		reference:
description:						
Returns the programmed or calculated gear stage in the substitution subprogram of an NC language substitution configured with \$MA_AXIS_LANG_SUB_MASK. Outside the substitution subprogram, the variable returns the gear stage of the master spindle.						
unit:						
min.:	41	max.:	45	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

Channel-specific system variables

BOOL	\$P_SUB_AUTOGEAR		Automatic gear stage change active			reference:	
description:							
In the substitution subprogram of an NC language substitution configured with \$MA_AXIS_LANG_SUB_MASK, this variable indicates whether an automatic gear stage change (M40) was active in the part program line which initiated the substitution process.							
Outside the substitution process, the variable returns the current setting in the interpreter.							
unit:							
min.:		FALSE		max.:		TRUE	
std:		FALSE					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		No restrictions
AXIS	\$P_SUB_LA		Leading spindle of active coupling			reference:	
description:							
In the substitution subprogram of an NC language substitution configured with \$MA_AXIS_LANG_SUB_MASK, this variable supplies the axis identifier of the leading spindle of the active coupling which initiated the substitution process.							
Outside the substitution process, the variable aborts program execution and triggers an alarm.							
unit:							
min.:		max.:		std:		GEOAXISNUM	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		No restrictions
AXIS	\$P_SUB_CA		Following spindle of active coupling			reference:	
description:							
In the substitution subprogram of an NC language substitution configured with \$MA_AXIS_LANG_SUB_MASK, this variable supplies the axis identifier of the following spindle of the active coupling which initiated the substitution process.							
Outside the substitution process, the variable aborts program execution and triggers an alarm.							
unit:							
min.:		max.:		std:		GEOAXISNUM	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		No restrictions

Channel-specific system variables

STRING	\$P_BLOCKNO [18]						Modal block number level-specific	reference:	
description:									
\$P_BLOCKNO[n] Supplies the last programmed block number of program level n. Example: \$P_BLOCKNO[0] Supplies the modal block number of the program on program level 0 = main program name. MD 10284 \$MN_DISPLAY_FUNCTION_MASK Bit0 must be = 1. Block numbers programmed during DISPLOF cannot be read with \$P_BLOCKNO.									
Index 1:		n: Defines the program level from which the block number is to be read. Numerical value: 0 to 11							
Index 3:		max. string length							
unit:									
min.:		max.:		std:					
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:			Valuation:			channel-specific			
block search		Not classified			link		Not classified		
INT	\$P_LINENO [18]						Line number level-specific	reference:	
description:									
\$P_LINENO[n] Supplies the last programmed line number of program level n. Example: \$P_LINENO[0] Supplies the line number of the program on program level 0 = main program level.									
Index 1:		n: Defines the program level from which the line number is to be read. Numerical value: 0 to 11							
unit:									
min.:		2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:			Valuation:			channel-specific			
block search		Not classified			link		Not classified		

Channel-specific system variables

INT	\$AC_AUTO_JOG_STATE			Status Jog In Auto	reference:	
description:						
1: Automatic is selected, \$MN_JOG_MODE_MASK is set and the mode group is "BAG-Reseted". By actuating the +/- buttons or the handwheel, you can jog in Auto mode.						
2: After a JOG movement has been performed, this mode group was switched by the system to JOG. The VDI and OPI still display Automatic mode.						
0: Other						
Remark: This information covers the whole mode group and is available to each mode group channel via \$AC_AUTO_JOG_STATE.						
unit:						
min.: 0 max.: 2 std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified

Channel-specific system variables

DOUBLE	\$AC_FIFO [n,m]	FIFO stack	reference:
description:			
Variable \$AC_FIFO[n,m] access the n-th. first in first out stack. See also \$AC_FIFO1 .. \$AC_FIFO10.			
\$MC_NUM_AC_FIFO is used to define the range of n values and thus the number of FIFO Stacks \$AC_FIFO1 - \$AC_FIFO10.			
The elements of the stack memory are saved in R variables. The length of all FIFO stacks is configured with \$MC_LEN_AC_FIFO.			
\$MC_START_AC_FIFO is used to specify the number of the start R variable, from which the FIFO elements are stored.			
R variables assigned to FIFO areas should not be written elsewhere.			
The number of R variables must be set in machine data \$MC_MM_NUM_R_PARAM such that all FIFO variables can be stored:			
$\$MC_MM_NUM_R_PARAM = \$MC_MM_START_FIFO + \$MC_NUM_AC_FIFO * (\$MC_LEN_AC_FIFO + 6)$			
The FIFO variable is an array variable.			
Indices 0 - 5 have special meanings:			
m = 0: When written with index 0, a new value is stored in the FIFO.			
When read with index 0, the oldest element is read and removed from the FIFO.			
m=1: Access to the first element read			
m=2: Access to the last element read			
m=3: Total of all FIFO elements if Bit0 in \$MC_MM_MODE_FIFO is set.			
m=4: Number of elements available in the FIFO			
m=5: Current write index relative to the start of the FIFO			
m=6: Oldest element			
m=7: Second oldest etc.			
Index 1:	The dimension is defined in \$MC_NUM_AC_FIFO.		
Index 2:	The dimension is defined in \$MC_LEN_AC_FIFO.		
unit:			
min.:	-1,8E308	max.:	1,8E308
		std:	0.0
Properties with regard to reading/writing:			
	PP	SA	PP/SA protection level
read:	runin stp	X	/
write:	X	X	/
			OPI
			OPI protection level
			OEM
axis identifier:			Valuation: channel-specific
block search	Not classified		link Not classified

Channel-specific system variables

INT	\$AC_AUXFU_M_VALUE [128]						value of active m-auxiliary function	reference:	
description:									
The array variable \$AC_AUXFU_M_VALUE[n] is used to read the value of the M auxiliary function that has been collected last for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The index corresponds to the group number decremented by one. The index 0 determines the value of the M auxiliary function output last for the 1st group. If an auxiliary function has not yet been output for the group specified, the variable returns the value -1. The relevant extension can be determined with the variable \$AC_AUXFU_M_EXT[n]. The variable \$AC_AUXFU_M_STATE[n] determines the current output status.									
Index 1: The index corresponds to the auxiliary function group number decremented by one.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			
INT	\$AC_AUXFU_M_EXT [128]						Extension of active m-auxiliary function	reference:	
description:									
The array variable \$AC_AUXFU_M_EXT[n] is used to read the extension of the M auxiliary function that has been collected last for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The index corresponds to the group number decremented by one. The index 0 determines the extension of the M auxiliary function output last for the 1st group. If an auxiliary function has not yet been output for the group specified, the variable returns the value -1. The relevant value of the auxiliary function can be determined with the variable \$AC_AUXFU_M_VALUE[n]. The variable \$AC_AUXFU_M_STATE[n] determines the current output status.									
Index 1: The index corresponds to the auxiliary function group number decremented by one.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			

Channel-specific system variables

INT	\$AC_AUXFU_M_STATE [128]		Output state of active m-auxiliary function	reference:		
description:						
<p>The array variable \$AC_AUXFU_M_STATE[n] is used to read the output status of the M auxiliary function that has been collected last for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The index corresponds to the group number decremented by one. The index 0 determines the status of the M auxiliary function output last for the 1st group. If an auxiliary function has not yet been output for the group specified, the variable returns the value 0. If the value is greater than 0, the relevant auxiliary function value can be determined with the variable \$AC_AUXFU_M_VALUE[n]. The variable \$AC_AUXFU_M_EXT[n] determines the current extension of the auxiliary function.</p> <p>The variable returns the following values:</p> <p>0: Auxiliary function not available 1: M-auxiliary function collected via search run 2: M-auxiliary function output to the PLC 3: M-auxiliary function output to the PLC, transfer has been acknowledged. 4: M-auxiliary function managed by the PLC and integrated into the PLC. 5: M-auxiliary function managed by the PLC, function has been acknowledged.</p>						
index 1:		The index corresponds to the auxiliary function group number decremented by one.				
unit:						
min.:		0		max.: 5		
				std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		Not classified
DOUBLE	\$P_THREAD_PITCH		programmed thread pitch	reference:		
description:						
<p>\$P_THREAD_PITCH provides the lead with G33, G34, G35, G331 and G332 programmed under the address I, J or K. Value 0 is supplied in the RESET state or if no lead has been programmed. With G33, G34 and G35 a positive value is always returned. With G331 and G332, the sign results from the spindle rotation direction: positive in clockwise direction (as with M3) or negative in counterclockwise direction (as with M4).</p> <p>In the following example, \$P_THREAD_PITCH provides the value "1.5".</p> <p>...</p> <p>N11 M4 S500 N12 G33 Z10 K1.4 N13 G33 Z12 K1.5 N14 R1=\$P_THREAD_PITCH ;R1=1.5</p>						
unit:		1/THREAD_PITCH				
min.:		-1,8E308		max.: 1,8E308		
				std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		Not classified

Channel-specific system variables

DOUBLE	\$P_THREAD_PITCH_INC		programmed thread pitch increment			reference:	
description:							
<p>\$P_THREAD_PITCH_INC supplies the value programmed under the address F for the lead change (G34/G35). Value 0 is supplied in the RESET state or if no lead change has been programmed.</p> <p>The returned value is positive in the case of G34 or negative in the case of G35.</p> <p>Example: M3 S400 G35 F2 Z10 K5 R1=\$P_THREAD_PITCH_INC ;R1= -2</p>							
unit:		THREAD_PITCH_INCREMENT					
min.:	-1,8E308	max.:	1,8E308	std:	0.0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

DOUBLE	\$AC_THREAD_PITCH		programmed thread pitch			reference:	
description:							
<p>\$AC_THREAD_PITCH provides the lead for G33, G34, G35, G331 and G332 programmed under address I, J or K. In the RESET state or if no lead has been programmed, the value 0 is given. With G33, G34 and G35, a positive value is always returned. With G331 and G332, the sign from the spindle rotating direction is as follows: positive for clockwise rotation (as with M3) or negative for counterclockwise rotation (as with M4).</p> <p>In the following example, \$AC_THREAD_PITCH provides the value "1.5" :</p> <p>...</p> <p>N11 M4 S500 N12 G33 Z10 K1.4 N13 G33 Z12 K1.5 N14 R1=\$AC_THREAD_PITCH ;R1= 1.5</p>							
unit:		THREAD_PITCH					
min.:	-1,8E308	max.:	1,8E308	std:	0.0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

Channel-specific system variables

DOUBLE	\$AC_THREAD_PITCH_INC		current thread pitch increment			reference:	
description:							
<p>\$AC_THREAD_PITCH_INC provides the value programmed under the address F for lead change (G34/G35). In the RESET state or if a change in lead has not been programmed, the value 0 is supplied.</p> <p>The returned value is positive for G34 and negative for G35.</p> <p>Example: M3 S400 G34 F4 Z10 K2 R1=\$P_THREAD_PITCH_INC ;R1= 4</p>							
unit:		TTHREAD_PITCH_INCREMENT					
min.:		-1,8E308	max.:		1,8E308	std: 0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified
DOUBLE	\$AC_THREAD_PITCH_ACT		current thread pitch just now			reference:	
description:							
<p>\$AC_THREAD_PITCH_ACT provides the current value for the lead. This value is continuously updated in blocks with G34 or G35 according to the value programmed under F.</p> <p>Only with thread blocks (G33, G34, G35, G331 and G332) a value unequal zero is supplied.</p>							
unit:		TTHREAD_PITCH					
min.:		-1,8E308	max.:		1,8E308	std: 0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified

Channel-specific system variables

DOUBLE	\$P_TOOLROT [3]		Programmed tool rotation direction		reference:	
description:						
\$P_TOOLROT[n]						
Programmed tool rotation vector						
Normalized vector with length 1 and the components						
(n = 1, 2, 3) in the range - 1, ..., 1.						
1: x-component						
2: y-component						
3: z-component						
If no tool is active, the following unit vector is returned, depending on the active plane:						
G17: (0, 1, 0)						
G18: (1, 0, 0)						
G19: (0, 0, 1)						
Index 1:		n: Components 1 - 3				
unit:		-				
min.:		-1.0		max.:		1.0
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified			link	No restrictions
DOUBLE	\$AC_TOOLR_ACT [3]		Active tool rotation direction		reference:	
description:						
\$AC_TOOLR_ACT[n]						
Active command rotation vector						
Normalized vector with length 1 and the components						
(n = 1, 2, 3) in the range - 1, ..., 1.						
1: x-component						
2: y-component						
3: z-component						
If no tool is active, the following unit vector is returned, depending on the active plane:						
G17: (0, 1, 0)						
G18: (1, 0, 0)						
G19: (0, 0, 1)						
Index 1:		n: Components 1 - 3				
unit:		-				
min.:		-1.0		max.:		1.0
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified			link	No restrictions

Channel-specific system variables

DOUBLE	\$AC_TOOLR_END [3]		End rotation direction vector			reference:	
description:							
\$AC_TOOLR_END[n]							
End rotation vector of active block							
Normalized vector with length 1 and the components							
(n = 1, 2, 3) in the range - 1, ..., 1.							
1: x-component							
2: y-component							
3: z-component							
If no tool is active, the following unit vector is returned, depending on the active plane:							
G17: (0, 1, 0)							
G18: (1, 0, 0)							
G19: (0, 0, 1)							
index 1:		n: Components 1 - 3					
unit:							
min.:		-1.0		max.:		1.0	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				valuation:		channel-specific	
block search		Not classified		link		No restrictions	
DOUBLE	\$AC_TOOLR_DIFF		Remaining angle of the tool rotation direction			reference:	
description:							
\$AC_TOOLR_DIFF							
Remaining angle of tool rotation in active block in degree in the range 0 ... 180 degree.							
unit:		deg.					
min.:		0.0		max.:		180.0	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				valuation:		channel-specific	
block search		Not classified		link		No restrictions	

Channel-specific system variables

DOUBLE	\$VC_TOOLR [3]		Actual rotation direction vector		reference:		
description:							
\$VC_TOOLR[n]							
Actual tool rotation							
Normalized vector with length 1 and the components							
(n = 1, 2, 3) in the range - 1, ..., 1.							
1: x-component							
2: y-component							
3: z-component							
If no tool is active, the following unit vector is returned, depending on the active plane:							
G17: (0, 1, 0)							
G18: (1, 0, 0)							
G19: (0, 0, 1)							
index 1:	n: Components 1 - 3						
unit:	-						
min.:	-1.0		max.:	1.0		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		
DOUBLE	\$VC_TOOLR_DIFF		Angle between set and actual rotation		reference:		
description:							
\$VC_TOOLR_DIFF							
Angle between command and actual tool rotation in degree in the range 0 ... 180 degree.							
unit:	deg.						
min.:	0.0		max.:	180.0		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		

Channel-specific system variables

INT	\$VC_TOOLR_STAT						Status of actual rotation direction vector	reference:	
description:									
\$VC_TOOLR_STAT									
Status of calculation of actual tool rotation:									
0: MCS -> BCS Transformation in one ipo cycle									
-1: MCS -> BCS transformation not in one ipo cycle possible									
unit:									
-									
min.: -1									
max.: 0									
std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link No restrictions			
BOOL	\$P_SIMUL						Simulation search run active	reference:	
description:									
Value==TRUE									
The part program is executed in the control under the Simulation search run mode.									
The simulation search run is a search run (with calculation)									
which is aborted with an									
internal M30 once the end of the program has been reached.									
The control is internally in search run mode, the variables \$P_SEARCH,									
\$P_SERACH1, \$P_SEARCH2 and \$P_SERACHL are also correctly supplied.									
Parts program adjustments can be made through variables									
\$P_SEARCH* or \$P_SIMUL. \$P_SIMUL is designed only for adjustments									
restricted to the simulation search run.									
Value==FALSE No simulation search run is active.									
unit:									
-									
min.: FALSE									
max.: TRUE									
std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Current value			link Not classified			

Channel-specific system variables

INT	\$P_SUB_STAT			state or substitution subroutine		reference:
description:						
A replacement of the tool programming has been configured (address D, DL, T or M function through which the tool change cycle is called up). \$P_SUB_STAT now permits polling to see if the substitution process is active and if the process is executed at the start or the end of the block:						
Value 0: Substitution subprogram not active						
Value 1: Substitution subprogram active, call-up at start of block						
Value 2: Substitution subprogram active, call-up at end of block						
The system variable is influenced by machine data \$MN_T_NO_FCT_CYCLE_MODE bit1 and 2.						
unit:						
min.: 0 max.: 2 std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
INT	\$A_USEDND [128]			workpiece counts for cutting edges		reference:
description:						
\$A_USEDND[toolHolder]						
The number of cutting edges used in tool holder s, counted since the last setpiece command, including the currently active cutting edge.						
toolHolder=1,...,maximum tool holder number						
toolHolder=0 = The master tool holder is selected						
Result = >0 = Number of cutting edges that have been used.						
Result = 0 = There have been no cuts since the last setpiece command.						
Result = -1 = Tool Management Tool Monitoring is not active.						
Result = -2 = toolHolder is not the value of a defined tool holder.						
Index 1:	toolHolder: Spindle number / Tool holder number			1 - 128	0	
= designates the master tool holder						
unit:						
min.: 0 max.: 2147483647 std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

INT	\$A_USEDT [128,1500]	workpiece counts for cutting edges	reference:			
description:						
\$A_USEDT[toolHolder, usedCuttingEdgeIndex]						
T-Number for the i-th cutting edge used with tool holder s since the last setpiece command, including the currently active cutting edge.						
toolHolder=1,...,maximum tool holder number						
toolHolder=0 = The master tool holder is selected						
Result = >0 = T-Number (can occur several times) (if different D-corrections of the tool were used).						
Result = 0 = There have been no cuts since the last setpiece command.						
Result = -1 = Tool Management Tool Monitoring is not active.						
Result = -2 = toolHolder is not the value of a defined tool holder.						
Index 1:	toolHolder: Spindle number / Tool holder number		1 - 128 0			
= designates the master tool holder						
Index 2:	usedCuttingEdgeIndex: index		1 - \$A_USEDND[toolHolder]			
unit:	-					
min.:	0	max.: 2147483647	std: 0			
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:						Valuation: channel-specific
block search	Not classified					link Not classified
INT	\$A_USEDDD [128,1500]	workpiece counts for cutting edges	reference:			
description:						
\$A_USEDDD[toolHolder, usedCuttingEdgeIndex]						
D-Number for the i-th cutting edge used with tool holder s since the last setpiece command, including the currently active cutting edge.						
toolHolder=1,...,maximum tool holder number						
toolHolder=0 = The master tool holder is selected						
Result = >0 = D-Number (can occur several times) (if different D-corrections of the tool were used).						
Result = 0 = There have been no cuts since the last setpiece command.						
Result = -1 = Tool Management Tool Monitoring is not active.						
Result = -2 = toolHolder is not the value of a defined tool holder.						
Index 1:	toolHolder: Spindle number / Tool holder number		1 - 128 0			
= designates the master tool holder						
Index 2:	usedCuttingEdgeIndex: index		1 - \$A_USEDND[toolHolder]			
unit:	-					
min.:	0	max.: 2147483647	std: 0			
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:						Valuation: channel-specific
block search	Not classified					link Not classified

Channel-specific system variables

INT	\$AC_AUXFU_M_TICK [128]			Time stamp of active M auxiliary function	reference:	
description:						
Field variable \$AC_AUXFU_M_TICK[n] is used to read the time stamp of the M auxiliary function collected (search run) or output last for an auxiliary function group. Auxiliary functions are assigned to groups. The index corresponds to a group number decremented by one. Index 0 therefore determines the value of the M auxiliary function of the 1st group, which was output last. If no auxiliary function has been output for the specific group, the variable indicates value -1. The respective value can be determined using variable \$AC_AUXFU_M_VALUE[n] and the respective extension using variable \$AC_AUXFU_M_EXT[n]. Variable \$AC_AUXFU_M_STATE[n] determines the current output state.						
Index 1: The index corresponds to the auxiliary function group number decremented by one.						
unit: -						
min.: -2147483648		max.: 2147483647		std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	-	0	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified			link Not classified			
DOUBLE	\$AC_CONE_ANGLE			Cone angle	reference:	
description:						
\$AC_CONE_ANGLE						
Currently active cone angle for cone turning. The cone angle is set by default via the setting data \$SC_CONE_ANGLE and is active in JOG mode only.						
unit: deg.						
min.: -90		max.: 90		std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified			link Not classified			

Channel-specific system variables

BOOL	\$P_TECCYCLE		Context query in technology cycles			reference:	
description:							
To control the context-specific interpretation of program parts in technology cycles, preprocessing variable \$P_TECCYCLE is available. Using this variable, programs can be subdivided into synchronized action program parts and preprocessing program parts.							
Example:							
if (\$P_TECCYCLE == TRUE)							
; Program sequence for a technology cycle in synchronized action							
else							
; Program sequence for parts program cycle							
endif							
unit:							
min.:		FALSE	max.:		TRUE	std:	FALSE
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
BOOL	\$AC_WORKAREA_CS_PLUS_ENABLED [n]		Active coord.-specific working area limitation, positive valid			reference:	
description:							
TRUE: The limitation in the positive direction for the stated axis of the active coordinate system-specific working area limitation is valid. (See \$AC_WORKAREA_CS_LIMIT_PLUS[ax])							
index 1:							
unit:							
min.:		FALSE	max.:		TRUE	std:	FALSE
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
BOOL	\$AC_WORKAREA_CS_MINUS_ENABLED [n]		Active coord.-specific working area limitation, negative valid			reference:	
description:							
TRUE: The limitation in the negative direction for the stated axis of the active coordinate system-specific working area limitation is valid. (See \$AC_WORKAREA_CS_LIMIT_MINUS[ax])							
index 1:							
unit:							
min.:		FALSE	max.:		TRUE	std:	FALSE
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Channel-specific system variables

DOUBLE	\$AC_WORKAREA_CS_LIMIT_PLUS [n]	Coordinate system-specific working area limitation positive	reference:			
description:						
The limitation in the positive direction for the stated axis of the stated group of the coordinate system-specific working area limitation. This value is only evaluated if \$AC_WORKAREA_CS_PLUS_ENABLE = TRUE.						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation:			channel-specific
block search			link			No restrictions
DOUBLE	\$AC_WORKAREA_CS_LIMIT_MINUS [n]	Coordinate system-specific working area limitation negative	reference:			
description:						
The limitation in the negative direction for the stated axis of the stated group of the coordinate system-specific working area limitation. This value is only evaluated if \$AC_WORKAREA_CS_MINUS_ENABLE = TRUE.						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation:			channel-specific
block search			link			No restrictions
INT	\$AC_WORKAREA_CS_COORD_SYSTEM	Coordinate system applies to the active working area limitation	reference:			
description:						
Coordinate system in which the active, coordinate-specific working area limitation applies.						
The following values apply:						
Working area limitation applies in the WCS						
Working area limitation applies in the SZS						
unit: -						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation:			channel-specific
block search			link			No restrictions

Channel-specific system variables

INT	\$AC_WORKAREA_CS_GROUP		Group no. of the active, coord.-specific working area limitation		reference:	
description:						
Number of the active group of the coordinate system-specific working area limitation. The value is determined in the NC program by the G code WALCS0-WALCS10.						
unit:						
min.:		0		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	X	/	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
FRAME	\$P_ISO1FRAME		Active system frame for ISO G51.1 mirroring		reference:	
description:						
Variable \$P_ISO1FRAME is used to program the active system frame for ISO G51.1 mirroring.						
On a Reset, the activation of the system frame depends on the following machine data:						
Bit0 in \$MC_RESET_MODE_MASK						
Bit7 in \$MC_CHSFRAME_RESET_MASK						
unit:						
min.:				max.:		
				std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
FRAME	\$P_ISO2FRAME		Active system frame for ISO G68 2DROT		reference:	
description:						
The variable \$P_ISO2FRAME is used to program the active system frame for ISO G68 2DROT.						
On a Reset, the activation of the system frame depends on the following machine data:						
Bit0 in \$MC_RESET_MODE_MASK						
Bit8 in \$MC_CHSFRAME_RESET_MASK						
unit:						
min.:				max.:		
				std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

Channel-specific system variables

FRAME	\$P_ISO3FRAME						Active system frame for ISO G68 3DROT	reference:	
description:									
The variable \$P_ISO3FRAME is used to program the active system frame for ISO G68 3DROT.									
On a Reset, the activation of the system frame depends on the following machine data:									
Bit0 in \$MC_RESET_MODE_MASK									
Bit9 in \$MC_CHSFRAME_RESET_MASK									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	X	-	7	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		No restrictions		
FRAME	\$P_ISO4FRAME						Active system frame for ISO G51 Scale	reference:	
description:									
The variable \$P_ISO4FRAME is used to program the active system frame for ISO G51 Scale.									
On a Reset, the activation of the system frame depends on the following machine data:									
Bit0 in \$MC_RESET_MODE_MASK									
Bit10 in \$MC_CHSFRAME_RESET_MASK									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	X	-	7	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		No restrictions		

Channel-specific system variables

FRAME	\$P_ACSFRAME						Active frame between BCS and SZS	reference:
description:								
The variable \$P_ACSFRAME determines the active chained total frame between BCS and SZS.								
The following applies to \$MC_FRAME_ACS_SET = 0:								
\$P_ACSFRAME = \$P_PARTFRAME : \$P_SETFRAME : \$P_EXTFRAME : \$P_ISO1FRAME :								
\$P_ISO2FRAME : \$P_ISO3FRAME : \$P_ACTBFRAME : \$P_IFRAME : \$P_TOOLFRAME : \$P_WPFRAME								
The following applies to \$MC_FRAME_ACS_SET = 1:								
\$P_ACSFRAME = \$P_PARTFRAME : \$P_SETFRAME : \$P_EXTFRAME : \$P_ISO1FRAME :								
\$P_ISO2FRAME : \$P_ISO3FRAME : \$P_ACTBFRAME : \$P_IFRAME : \$P_TOOLFRAME : \$P_WPFRAME :								
\$P_TRAFRAME : \$P_PFRAME : \$P_ISO4FRAME								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
BOOL	\$P_CUT_INV						Invert direction of spindle rotation	reference:
description:								
\$P_CUT_INV								
This system variable is used to indicate whether or not the direction of spindle rotation has to be inverted for machining with the currently active tool.								
The variable has the value TRUE if the four following conditions are fulfilled:								
1. A turning tool is active (tool types 500 to 599).								
2. The cutting edge influencing has been activated with the language command CUTMOD = 1 or CUTMOD =2.								
3. A tool carrier with orientation capability is active.								
4. The tool carrier with orientation capability rotates the tool so that the resulting normal of the tool cutting edge to the initial position is rotated more than 90 degrees (typically 180 degrees).								
The content of the variable is FALSE if at least one of the four conditions has not been fulfilled.								
unit:								
min.:								
FALSE								
max.:								
TRUE								
std:								
FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

Channel-specific system variables

BOOL	\$AC_CUT_INV					Invert direction of spindle rotation	reference:	
description:								
\$AC_CUT_INV								
This system variable is used to indicate whether or not the direction of spindle rotation has to be inverted for machining with the currently active tool.								
The variable has the value TRUE if the four following conditions are fulfilled:								
1. A turning tool is active (tool types 500 to 599).								
2. The cutting edge influencing has been activated with the language command CUTMOD = 1 or CUTMOD =2.								
3. A tool carrier with orientation capability is active.								
4. The tool carrier with orientation capability rotates the tool so that the resulting normal of the tool cutting edge to the initial position is rotated more than 90 degrees (typically 180 degrees).								
The content of the variable is FALSE if at least one of the four conditions has not been fulfilled.								
unit:								
min.: FALSE max.: TRUE std: FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:						Valuation:	channel-specific	
block search	Not classified					link	No restrictions	
INT	\$P_CUTMOD					The last programmed value of CUTMOD	reference:	
description:								
\$P_CUTMOD								
Reads the current valid value that was last programmed with the language command CUTMOD (number of the tool carrier for which the cutting edge data modification is to be activated).								
If the last programmed value was CUTMOD = -2 (activation with the currently active tool carrier with orientation capability), \$P_CUTMOD does not return the value -2 but the number of the active tool carrier with orientation capability at the time of programming.								
unit:								
min.: -2 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:						Valuation:	channel-specific	
block search	Not classified					link	No restrictions	

Channel-specific system variables

INT	\$AC_CUTMOD						The value of CUTMOD in the current block.	reference:	
description:									
\$AC_CUTMOD									
Reads the currently valid value of the language command CUTMOD in the current block (number of the tool carrier for which the cutting edge data modification is to be activated).									
unit:									
min.: -2 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		No restrictions		
DOUBLE	\$P_CUTMOD_ANG						Tool rotation angle in the active machining plane	reference:	
description:									
The variable \$P_CUTMOD_ANG reads the angle through which a tool has been rotated in the active machining plane, and on which the determination of modified cutting edge data with the functions CUTMOD and/or \$SC_CUTDIRMOD is based.									
unit:									
deg.									
min.: -360 max.: 360 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		No restrictions		
DOUBLE	\$AC_CUTMOD_ANG						Tool rotation angle in the active machining plane	reference:	
description:									
The variable \$AC_CUTMOD_ANG determines the angle through which a tool has been rotated in the active machining plane and on which the determination of modified cutting edge data for the functions CUTMOD and/or \$SC_CUTDIRMOD is based.									
unit:									
deg.									
min.: -360 max.: 360 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		No restrictions		

Channel-specific system variables

BOOL	\$P_SUB_SPOS			Language substitution for SPOS command active		reference:	
description:							
Returns an NC language substitution TRUE (1) configured with \$MA_AXIS_LANG_SUB_MASK bit1 = 1 in the substitution subprogram if the substitution was activated by the SPOS command.							
unit:							
min.:		FALSE		max.:		TRUE	
std:				std:		FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		No restrictions

BOOL	\$P_SUB_SPOSA			Language substitution for SPOSA command active		reference:	
description:							
Returns an NC language substitution TRUE (1) configured with \$MA_AXIS_LANG_SUB_MASK bit1 = 1 in the substitution subprogram if the substitution was activated by the SPOSA command.							
unit:							
min.:		FALSE		max.:		TRUE	
std:				std:		FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		No restrictions

BOOL	\$P_SUB_M19			Language substitution M19 active.		reference:	
description:							
Returns an NC language substitution TRUE (1) configured with \$MA_AXIS_LANG_SUB_MASK bit1 = 1 in the substitution subprogram if the substitution was activated by M19.							
unit:							
min.:		FALSE		max.:		TRUE	
std:				std:		FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		No restrictions

Channel-specific system variables

DOUBLE	\$P_SUB_SPOSIT		SPOS/SPOSA position with language substitution			reference:	
description:							
Returns the programmed position of an NC language substitution configured with \$MA_AXIS_LANG_SUB_MASK bit1 = 1 in the substitution subprogram. If the variable is called outside this substitution process, the program execution is canceled with alarm 14055.							
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:						Valuation:	channel-specific
block search			Program sensitive			link	No restrictions
INT	\$P_SUB_SPOSMODE		Position approach mode with language substitution			reference:	
description:							
Returns the position approach mode for the spindle position returned by \$P_SUB_SPOSIT of a language substitution configured by \$MA_AXIS_LANG_SUB_MASK bit1 = 1 in the substitution subprogram.							
0: DC							
1: AC							
2: IC							
3: DC							
4: ACP							
5: ACN							
If the variable is called outside this substitution process, the program execution is canceled with alarm 14055.							
unit:							
min.:		0		max.:		5	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:						Valuation:	channel-specific
block search			Program sensitive			link	No restrictions
INT	\$AC_SAFE_SYNA_MEM		Free safety synchronized action elements			reference:	
description:							
The variable \$AC_SAFE_SYNA_MEM determines the number of free synchronized action elements for Safety Integrated. The maximum number of elements is configured by \$MC_MM_NUM_SAFE_SYNC_ELEMENTS.							
The value is read from the part program without a preprocessing stop.							
unit:							
min.:		0		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:						Valuation:	channel-specific
block search			Not classified			link	Not classified

Channel-specific system variables

DOUBLE	\$AC_ACT_PROG_NET_TIME		Execution time of the selected NC program		reference:		
description:							
The current net runtime of the current program in seconds, that means the time in which the program was stopped, is deducted. actProgNetTime is automatically reset to zero on part program start in automatic mode, channel status RESET.							
actProgNetTime can be further manipulated with \$AC_PROG_NET_TIME_TRIGGER.							
unit:	s						
min.:	0		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Current value			link	No restrictions		
DOUBLE	\$AC_OLD_PROG_NET_TIME		Runtime of the last NC program		reference:		
description:							
oldProgNetTime is the net runtime of the just correctly ended program in seconds, that is the program was not canceled with RESET, but terminated normally with M30. If a new program is started, oldProgNetTime remains unaffected until M30 is reached again.							
The implicit procedure of copying actProgNetTime to oldProgNetTime only takes place if progNetTimeTrigger is not written.							
unit:	s						
min.:	0		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Current value			link	No restrictions		

Channel-specific system variables

INT	\$SAC_PROG_NET_TIME_TRIGGER	Trigger for runtime measurement	reference:			
description:						
The variable serves for the selective measurement of program sections, that is the time measurement can be switched on and off again by the program by writing progNetTimeTrigger.						
1Starts the measurement and sets actProgNetTime to zero						
2Terminates the measurement and copies actProgNetTime -> oldProgNetTime						
Certain values of ProgNetTimeTrigger are given a special function in order to fully exploit all trigger options:						
0 Neutral status.						
1Terminate						
Terminates the measurement and copies actProgNetTime -> oldProgNetTime. actProgNetTime is set to zero and then runs on again.						
2Start						
Starts the measurement and sets actProgNetTime to zero. oldProgNetTime remains unchanged.						
3Stop						
Stops the measurement. Does not change oldProgNetTime and holds actProgNetTime constant until resume.						
4Resume						
Resumption of the measurement, that is a previously stopped measurement is resumed. actProgNetTime runs on. oldProgNetTime remains unchanged.						
unit:	s					
min.:	0	max.:	2147483647	std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:		X	7	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
INT	\$SAC_OLD_PROG_NET_TIME_COUNT	Changes to oldProgNetTime	reference:			
description:						
Is zero in the power ON status. oldProgNetTimeCount is always increased when the NCK has newly written oldProgNetTime. This enables the user to ensure that oldProgNetTime has been written, that is, if the user cancels the current program with reset, oldProgNetTime and oldProgNetTimeCount remain unchanged.						
Note: Two programs running consecutively can have identical runtimes and be correctly terminated. The user can then only detect this by the changed oldProgNetTimeCount.						
unit:	s					
min.:	0	max.:	2147483647	std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Current value			link	No restrictions	

Channel-specific system variables

INT	\$P_OPMODE						Selected mode	reference:	
description:									
The variable \$P_OPMODE determines the mode selected via the PLC.									
The variable returns the following values:									
0: JOG (manual traverse)									
1: MDA (Manual Data Automatic)									
2: AUTOMATIC									
unit:									
-									
min.: 0 max.: 2 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		
DOUBLE	\$P_TOFF [n]						Programmed tool length offset	reference:	
description:									
\$P_TOFF									
Programmed tool length offset.									
The variable returns the tool length offset which is assigned to the geometry axis defined as an index.									
The system variable returns the offset values assigned to the tool length components irrespective of whether the offsets have been programmed with TOFFL or TOFF.									
Index 1:									
-									
unit:									
mm									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		

Channel-specific system variables

DOUBLE	\$AC_TOFFL [3]		Programmed tool length offset			reference:	
description:							
\$AC_TOFFL							
Programmed tool length offset.							
The variable returns the offset assigned in \$AC_TOFFL[1] to the tool length component L1. The same applies to indices 2 and 3.							
\$AC_TOFFL[0] accesses the offset of the length component L1 in the same way as \$AC_TOFFL[1].							
The system variable returns the offset values assigned to the tool length components irrespective of whether the offsets have been programmed with TOFFL or TOFF.							
Index 1:		-					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:		channel-specific
block search		Not classified			link		Not classified
DOUBLE	\$P_TOFFL [3]		Programmed tool length offset			reference:	
description:							
\$P_TOFFL							
Programmed tool length offset.							
The variable returns the offset assigned to the tool length component L1 in \$P_TOFFL[1]. The same applies to indices 2 and 3.							
\$P_TOFFL[0] accesses the offset of the length component L1 in the same way as \$P_TOFFL[1].							
The system variable returns the offset values assigned to the tool length components irrespective of whether the offsets have been programmed with TOFFL or TOFF.							
Index 1:		-					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:		channel-specific
block search		Not classified			link		Not classified

Channel-specific system variables

DOUBLE	\$AC_TOFF [n]						Programmed tool length offset	reference:	
description:									
\$AC_TOFF Programmed tool length offset. The variable returns the tool length offset which is assigned to the geometry axis defined as an index. The system variable returns the offset values assigned to the tool length components irrespective of whether the offsets have been programmed with TOFFL or TOFF.									
Index 1:									
unit: mm									
min.: -1,8E308			max.: 1,8E308			std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:						valuation:			
block search						channel-specific			
Not classified						link			
Not classified						Not classified			
BOOL	\$AC_JOG_CIRCLE_SELECTED						JOG circles selected	reference:	
description:									
TRUE: JOG in circles is selected. The function is selected via the NC/PLC interface signal DB21-30 DBX30.6 (no tool change commands), and the selection is confirmed via DB21 Dbb377.6. The maximum and minimum circles and the machining characteristics are defined by setting data: - \$SC_JOG_CIRCLE_CENTRE defines the center of the circle, - \$SC_JOG_CIRCLE_RADIUS the radius of the circle - \$SC_JOG_CIRCLE_MODE the machining characteristics (Traversing clockwise or anticlockwise on a circular path, internal or external machining; Limitation of the circle with or without taking the tool radius compensation into account). - \$SC_JOG_CIRCLE_START_ANGLE defines the starting angle - \$SC_JOG_CIRCLE_END_ANGLE defines the end angle									
unit:									
min.: FALSE			max.: TRUE			std:		FALSE	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:						valuation:			
block search						channel-specific			
Not classified						link			
Not classified						Not classified			

Channel-specific system variables

DOUBLE	\$P_TOFFR		Programmed tool radius offset			reference:	
description:							
\$P_TOFFR							
Programmed tool radius offset.							
The variable returns the tool radius offset programmed with TOFFR.							
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		
DOUBLE	\$AC_TOFFR		Programmed tool radius offset			reference:	
description:							
\$P_TOFFR							
Programmed tool radius offset.							
The variable returns the tool radius offset programmed with TOFFR.							
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		
INT	\$AC_STOP_COND [10]		Events for the machining stop			reference:	
description:							
The field variable \$AC_STOP_COND[n] determines the events that led to machining stopping in the channel. The events are coded as positive numerical values in the field elements (see user documentation for meanings). The field element with the field index 0 corresponds to the highest priority event, higher indexed elements return correspondingly lower priority events. If the nth field element returns the value 0, this means that there are no further stop events.							
index 1:	-						
unit:	-						
min.:	0		max.:	2147483647		std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		

Channel-specific system variables

FRAME	\$P_RELFRAME		Active system frame for relative coordinate systems		reference:	
description:						
The variable \$P_RELFRAME is used for programming the active system frame for relative coordinate systems. The system frame is configured in the following machine data: Bit 11 in \$MC_MM_SYSTEM_FRAME_MASK Bit 11 in \$MC_MM_SYSTEM_DATAFRAME_MASK Bit 11 in \$MC_CHSFRAME_RESET_MASK Bit 11 in \$MC_CHSFRAME_RESET_CLEAR_MASK Bit 11 in \$MC_CHSFRAME_POWERON_MASK						
unit:						
min.:						
max.:						
std:						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	-	0	-
axis identifier:					Valuation:	channel-specific
block search			Not classified	link	No restrictions	
BOOL	\$P_INCOAP_B [n]		Parameters for COA application		reference:	
description:						
Defining and return parameters of the COA application "Cutting generator".						
Index 1:						
unit:						
min.:						
max.:						
std:						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search			Not classified	link	Not classified	
CHAR	\$P_INCOAP_C [n]		Parameters for COA application		reference:	
description:						
Defining and return parameters of the COA application "Cutting generator".						
Index 1:						
unit:						
min.:						
max.:						
std:						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search			Not classified	link	Not classified	

Channel-specific system variables

INT	\$P_INCOAP_I [n]		Parameters for COA application			reference:	
description:							
Defining and return parameters of the COA application "Cutting generator".							
Index 1:							
-							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$P_INCOAP_R [n]		Parameters for COA application			reference:	
description:							
Defining and return parameters of the COA application "Cutting generator".							
Index 1:							
-							
unit:							
-							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
STRING	\$P_INCOAP_S16 [n]		Parameters for COA application			reference:	
description:							
Defining and return parameters of the COA application "Cutting generator".							
Index 1:							
-							
Index 3:							
-							
unit:							
-							
min.:				max.:			
				std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			

Channel-specific system variables

STRING	\$P_INCOAP_S32 [n]		Parameters for COA application			reference:	
description:							
Defining and return parameters of the COA application "Cutting generator".							
Index 1: -							
Index 3: -							
unit: -							
min.: - max.: - std.: -							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
STRING	\$P_INCOAP_S160 [n]		Parameters for COA application			reference:	
description:							
Defining and return parameters of the COA application "Cutting generator".							
Index 1: -							
Index 3: -							
unit: -							
min.: - max.: - std.: -							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
INT	\$P_INCOAP_SIZE [n]		Size of parameter fields for COA application			reference:	
description:							
<p>\$P_INCOAP_SIZE[] returns the currently available array size of the defining and return parameter \$P_INCOAP_<type> of the COA application "Cutting generator". The array size is variable, and is defined by the COA application during power-up.</p> <p>The following assignments apply:</p> <p>\$P_INCOAP_SIZE[0] returns the array size of \$P_INCOAP_B[]</p> <p>\$P_INCOAP_SIZE[1] returns the array size of \$P_INCOAP_C[]</p> <p>\$P_INCOAP_SIZE[2] returns the array size of \$P_INCOAP_I[]</p> <p>\$P_INCOAP_SIZE[3] returns the array size of \$P_INCOAP_R[]</p> <p>\$P_INCOAP_SIZE[4] returns the array size of \$P_INCOAP_S16[]</p> <p>\$P_INCOAP_SIZE[5] returns the array size of \$P_INCOAP_S32[]</p> <p>\$P_INCOAP_SIZE[6] returns the array size of \$P_INCOAP_S160[]</p>							

Channel-specific system variables

Index 1:							-	
unit:							-	
min.:		0	max.:		2147483647	std:		0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		Not classified	
DOUBLE	\$AC_SMAXVELO [n]			Maximum possible spindle speed			reference:	
description:								
\$AC_SMAXVELO[n]								
n: Number of the spindle								
Maximum possible spindle speed								
The variable returns the maximum possible spindle speed for the spindle mode. This is taken from the lowest value of the active speed limitations, and cannot be exceeded by speed programming or override > 100%.								
A speed limitation is displayed by the VDI interface signal DB31...,DBX83.1 'Setpoint speed limited' and by \$AC_SPIND_STATE, bit 10 (speed limitation active).								
The cause of the speed limitation can also be determined with the system variable \$AC_SMAXVELO_INFO.								
In oscillation mode (gear stage change), the variable returns the value for the spindle mode (speed-control mode).								
Index 1:		n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.						
unit:							rpm	
min.:		0	max.:		1,8E308	std:		0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				Cross-channel
block search		Not classified			link		Not classified	

Channel-specific system variables

INT	\$AC_SMAXVELO_INFO [n]	Identifier for the speed-limiting data	reference:
description:			
\$AC_SMAXVELO_INFO[n]			
n: Number of the spindle			
Identifier (info) for the speed limiting data (machine/setting data, etc.).			
The system variable is additional information to \$AC_SMAXVELO, and returns the definitive data as an identifier/index. The value read can be used to determine the speed limiting data from the following table.			
0 No limitation (SERUPRO)			
1 Maximum speed (chuck speed) of the spindle MD 35100 SPIND_VELO_LIMIT			
2 The speed is limited to the maximum speed in the current gear stage MD 35130 GEAR_STEP_MAX_VELO_LIMIT			
3 The speed is limited by position control to 90% of the lowest value contained in MD 35100 and MD 35130 (SPCON, SPOS, possibly with COUPON,..)			
4 The speed is limited by position control to MD 35132 GEAR_STEP_PC_MAX_VELO_LIMIT			
5 The speed is limited to SD 43220 SPIND_MAX_VELO_G26 (G26 S.. or preset by HMI)			
6 The speed is limited to MD 35160 SPIND_EXTERN_VELO_LIMIT because of set VDI interface signal DB31,...DBX3.6			
7 The speed is limited to SD 43230 SPIND_MAX_VELO_LIMS with constant cutting speed (G96, G961, G962, G97, LIMS)			
8 The speed is limited to safe speed (SS) by Safety Integrated			
9 The speed is limited by preparation calculations			
10 Limited to the maximum speed of the drive by drive parameter SINAMICS p1082			
11 The speed is limited to MD 36300 ENC_FREQ_LIMIT at functions that require a functioning measuring system, for example, with position control and G95, G96, G97, G973, G33, G34, G35 for the master spindle. The limitation takes into account the encoder speed, the MS arrangement (direct/indirect), the MS limiting frequency and the current parameter set			
12 The speed is limited by the axis mode. In the case of a synchronized spindle, axis mode is imposed by the leading spindle.			
13 The speed of the overlaid motion of the following spindle is limited to the dynamics remaining after the coupling. A greater motion component of the overlaid motion can be achieved by reducing the leading spindle speed, for example, by programming G26 S, VELOLIM for the leading spindle or VELOLIMA for the following spindle. The coupling factor has to be taken into account.			
14 The speed of the leading spindle is limited by lack of dynamics of the following spindle or a high gear ratio			
15 The speed of the master spindle is limited to MD 35550 DRILL_VELO_LIMIT when tapping with G331, G332.)			

Channel-specific system variables

16	The speed is limited by the programming of VELOLIM.						
17	The speed is limited by tool parameter \$TC_TP_MAX_VELO						
18	Not used						
19	Not used						
20	The speed is limited by the NCU link.						
21	The speed is limited by SD43235 SD_SPIND_USER_VELO_LIMIT, speed limited in the case of the user e.g. tensioning device, chuck speed						
In oscillation mode (gear stage mode), the variable returns the value for spindle mode (speed-control mode)							
index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.						
unit:							
min.:	0	max.:	17	std:	0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	Cross-channel		
block search	Not classified			link	Not classified		
DOUBLE	\$AC_SMINVELO [n]			Minimum possible spindle speed			reference:
description:							
\$AC_SMINVELO[n]							
n: Number of the spindle							
Minimum possible spindle speed							
The variable returns the minimum possible spindle for open-loop speed control mode. This is formed from the highest speed increase, and cannot be undershot by speed programming or override < 100%							
A speed increase is displayed by the VDI interface signal DB31...,DBX83.2 'Setpoint speed increased' and by \$AC_SPIND_STATE, bit 11 (setpoint speed increased).							
The cause of the increase in speed (machine or setting data, G code, VDI interface etc.) can also be determined with the system variable \$AC_SMINVELO_INFO.							
The increase in speed is effective only if the spindle is in open-loop speed control mode. The system variable always returns the definitive value for the open-loop speed control mode, even if the spindle is in positioning or axis mode.							
index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.						
unit:	rpm						
min.:	0	max.:	1,8E308	std:	0.0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	Cross-channel		
block search	Not classified			link	Not classified		

Channel-specific system variables

INT	\$AC_SMINVELO_INFO [n]	Identifier for the speed-raising data	reference:													
<p>description: \$AC_SMINVELO_INFO[n] n: Number of the spindle Identifier (info) for the speed-increasing data (machine/setting data etc.). The system variable is additional information to \$AC_SMINVELO, and returns the speed-increasing data as an identifier/index for the speed control mode. The index can be used to determine the speed-increasing data from the following table.</p> <table border="0"> <tr><td>0</td><td>Not used</td></tr> <tr><td>1</td><td>Not used</td></tr> <tr><td>2</td><td>Lower speed limit (minimum speed) of the current gear stage MD 35140 GEAR_STEP_MIN_VELO_LIMIT</td></tr> <tr><td>3</td><td>Not used</td></tr> <tr><td>4</td><td>Not used</td></tr> <tr><td>5</td><td>Lower speed limit (minimum speed) from SD 43210 SPIND_MIN_VELO_G25 (G25 S.. or preset by HMI)</td></tr> </table> <p>In oscillation mode (gear stage change) and in axis mode, the variable returns values from the spindle mode.</p>					0	Not used	1	Not used	2	Lower speed limit (minimum speed) of the current gear stage MD 35140 GEAR_STEP_MIN_VELO_LIMIT	3	Not used	4	Not used	5	Lower speed limit (minimum speed) from SD 43210 SPIND_MIN_VELO_G25 (G25 S.. or preset by HMI)
0	Not used															
1	Not used															
2	Lower speed limit (minimum speed) of the current gear stage MD 35140 GEAR_STEP_MIN_VELO_LIMIT															
3	Not used															
4	Not used															
5	Lower speed limit (minimum speed) from SD 43210 SPIND_MIN_VELO_G25 (G25 S.. or preset by HMI)															
Index 1:		n: Spindle number	0 ... Max. spindle number	for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.												
unit:																
min.:		0	max.:	5												
			std:	0												
Properties with regard to reading/writing:																
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM										
read:	runin stp	X	7	X	7	X										
write:	-	-	0	-	0	-										
axis identifier:				Valuation:		Cross-channel										
block search		Not classified			link		Not classified									
DOUBLE	\$AC_SMAXACC [n]	Effective acceleration of the spindle	reference:													
<p>description: \$AC_SMAXACC[n] n: Number of the spindle Active acceleration of the spindle. The variable returns the active acceleration of the spindle for the spindle mode. \$AC_SPIND_STATE, bit 14 (spindle accelerating) is set for the duration of the acceleration to the defined setpoint speed. \$AC_SPIND_STATE, bit 15 (spindle braking) is set for the duration of the braking to the defined setpoint speed. The data defining the acceleration can be determined with the system variable \$AC_SMAXACC_INFO. In oscillation mode (gear stage change), the variable returns the value for the spindle mode (speed-control mode).</p>																
Index 1:		n: Spindle number	0 ... Max. spindle number	for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.												
unit:																
min.:		0	max.:	1,8E308												
			std:	0.0												

Channel-specific system variables

Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	Cross-channel
block search	Not classified			link	Not classified	

Channel-specific system variables

INT	\$AC_SMAXACC_INFO [n]	Identifier for the active spindle acceleration data	reference:			
description:						
\$AC_SMAXACC_INFO[n]						
n: Number of the spindle						
Identifier (info) for the machine data of the currently active spindle acceleration.						
The system variable is additional information to \$AC_SMAXACC, and returns the definitive data as an identifier/index. The index can be used to determine the active acceleration data from the following table. The number range is the same as that in the system variable \$AC_SMAXVELO_INFO:						
0 No acceleration limitation (SERUPRO)						
1 Not used						
2 Acceleration in speed control mode without position control in the current gear stage MD 35200 GEAR_STEP_SPEEDCTRL_ACCEL						
3 Not used						
4 Acceleration in the current gear stage on account of position control MD 35210 GEAR_STEP_POSCTRL_ACCEL (SPCON, SPOS, possibly with COUPON,..)						
5 Not used						
6 Not used						
7 Not used						
8 Not used						
9 Acceleration limited by the preparation calculations						
10 Not used						
11 Not used						
12 Acceleration limited by axis mode. In the case of a synchronized spindle, axis mode is forced by the leading spindle.						
13 Acceleration of the overlaid motion of the following spindle is limited to the dynamics remaining after the coupling.						
14 Acceleration of the leading spindle is limited by lack of dynamics in the following spindle or a high gear ratio						
15 Acceleration of the master spindle MD 35212 GEAR_STEP_POSCTRL_ACCEL2 while tapping with G331, G332 (only with corresponding configuration of the second data record)						
16 Acceleration limited by programming of ACC or ACCFXS (synchronized action)						
17 Acceleration limited by tool parameter \$TC_TP_MAX_ACCEL						
18 Not used						
19 MD 32301 MA_JOG_MAX_ACCEL limits the acceleration in JOG mode.						
20 Acceleration limited by NCU link.						
21 Not used						
In oscillation mode (gear stage change), the variable returns the value for spindle mode (speed-control mode).						
index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:						
min.:	0	max.:	17	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				valuation:	Cross-channel	
block search	Not classified			link	Not classified	

Channel-specific system variables

INT	\$AC_SPIND_STATE [n]	Status of the spindle in speed control mode	reference:			
description:						
\$AC_SPIND_STATE[n]						
n: Number of the spindle						
The variable \$AC_SPIND_STATE returns the selected states of the spindle. For positioning and axis mode, the variable \$AA_INPOS_STATE[Sn] can also be read.						
Bit 0: "Constant cutting speed active" (VDI interface signal DB31...,DBX84.0)						
Bit 1: "GWPS active" (VDI interface signal DB31...,DBX84.1)						
Bit 2: "CLGON active" (VDI interface signal DB31...,DBX84.2)						
Bit 3: "Tapping without compensating chuck" (VDI interface signal DB31...,DBX84.3)						
Bit 4: "Synchronous mode" (following spindle with synchronous spindle coupling) (VDI interface signal DB31...,DBX84.4)						
Bit 5: "Positioning mode" (VDI interface signal DB31...,DBX84.5)						
Bit 6: "Oscillation mode" (gear stage change) (VDI interface signal DB31...,DBX84.6)						
Bit 7: "Open-loop speed control mode" (VDI interface signal DB31...,DBX84.7)						
Bit 8: "Spindle programmed" (e.g. M3, M4 S., FC18, ..) (VDI interface signal DB31...,DBX64.4/5 or 6/7)						
Bit 9: "Speed limit exceeded" (VDI interface signal DB31...,DBX83.0)						
Bit 10: "Setpoint speed limited" (VDI interface signal DB31...,DBX83.1) active if, as a result of programming or override, the speed would become greater than the maximum possible speed (\$AC_SMAXVELO)						
Bit 11: "Setpoint speed increased" (VDI interface signal DB31...,DBX83.2) active when, as a result of programming or override, the speed would become less than the minimum possible speed (system variable \$AC_SMINVELO)						
Bit 12: "Spindle in set range" (VDI interface signal DB31...,DBX83.5)						
Bit 13: "Actual direction of rotation right" (VDI interface signal DB31...,DBX83.7)						
Bit 14: "Spindle accelerates", bit is active as long as the spindle is accelerating to the defined setpoint speed on the setpoint side.						
Bit 15: "Spindle brakes", bit is active as long as the spindle is braking to the defined setpoint speed or to a stop on the setpoint side.						
Bit 16: "Spindle stationary" (VDI interface signal DB31...,DBX61.4)						
Bit 17: "Tool with dynamic limitation active" (VDI interface signal DB31...,DBX85.0)						
Bit 18: Reserved						
Bit 19: "Spindle in position" (VDI interface signal DB31...,DBX85.5)						
Bit 20: "Position control active" (VDI interface signal DB31...,DBX61.5)						
Bit 21: "Referenced/synchronized 1" (VDI interface signal DB31...,DBX60.4)						
Bit 22: "Referenced/synchronized 2" (VDI interface signal DB31...,DBX60.5)						
Bit 23: The direction of rotation of the spindle is inverted due to the VDI interface signal "Invert M3/M4 " (DB31...,DBX17.6)						
index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:						
min.:	0	max.:	16777215	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				valuation:	Cross-channel	
block search	Not classified			link	Not classified	

Channel-specific system variables

INT	\$P_ISO2_HNO [n]		H number in ISO2 mode			reference:	
description:							
Contains the offset numbers of H selected for the 3 geometry dimensions. (Tool length offset) Indexing corresponding to \$P_TOOLL[n]. Value = -1: H99 is programmed, or it has been activated in Siemens mode D1. = -2: A D>2 has been programmed in Siemens mode = -3: It cannot be activated in ISO2 mode.							
index 1:							
unit:							
min.:		-3		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:				
channel-specific			channel-specific				
block search		Not classified			link		No restrictions

INT	\$P_ISO2_DNO		D number in ISO2 mode			reference:	
description:							
Contains the offset number D selected for the radius Value = -1: H99 is programmed, or it has been activated in Siemens mode D1. = -2: A D>2 has been programmed in Siemens mode = -3: It cannot be activated in ISO2 mode.							
unit:							
min.:		-3		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:				
channel-specific			channel-specific				
block search		Not classified			link		No restrictions

INT	\$P_ISO3_DNO		D number in ISO3 mode			reference:	
description:							
Contains the offset number of H selected for ISO3 mode Value = -1: H99 is programmed, or it has been activated in Siemens mode D1. = -2: A D>2 has been programmed in Siemens mode = -3: It cannot be activated in ISO2 mode.							
unit:							
min.:		-3		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:				
channel-specific			channel-specific				
block search		Not classified			link		No restrictions

Channel-specific system variables

DOUBLE	\$AC_PREP_ACT_LOAD		Current preprocessing runtime			reference:	
description:							
The variable \$AC_PREP_ACT_LOAD returns the current preprocessing runtime in the channel.							
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified
DOUBLE	\$AC_PREP_MAX_LOAD		Longest preprocessing runtime			reference:	
description:							
The variable \$AC_PREP_MAX_LOAD returns the longest net preprocessing runtime in the channel.							
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	X	X	7	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified
DOUBLE	\$AC_PREP_MIN_LOAD		Shortest preprocessing runtime			reference:	
description:							
The variable \$AC_PREP_MIN_LOAD returns the shortest net preprocessing runtime in the channel.							
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	X	X	7	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified
DOUBLE	\$AC_PREP_ACT_LOAD_GROSS		Current preprocessing runtime			reference:	
description:							
The variable \$AC_PREP_ACT_LOAD_GROSS returns the current gross preprocessing runtime in the channel.							
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

Channel-specific system variables

DOUBLE	\$AC_PREP_MAX_LOAD_GROSS	Longest preprocessing runtime					reference:	
description:								
The variable \$AC_PREP_MAX_LOAD_GROSS returns the longest gross preprocessing runtime in the channel.								
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	-		
write:	X	X	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		Not classified	
DOUBLE	\$AC_PREP_MIN_LOAD_GROSS	Shortest preprocessing runtime					reference:	
description:								
The variable \$AC_PREP_MIN_LOAD_GROSS returns the shortest, gross preprocessing runtime in the channel.								
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	-		
write:	X	X	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		Not classified	
INT	\$AC_IPO_STATE	Status identifier of active functions					reference:	
description:								
\$AC_IPO_STATE								
The variable returns selected information about whether or not specific functions are active:								
Bit 0: Free-form surfaces mode is active								
Bit 1: Compressor active								
Bit 2: Vector interpolation (e.g. large circle interpolation) is active for tool orientation								
Note:								
This variable can only be read in synchronized actions, and not directly in the part program.								
unit:								
min.:		-2147483648	max.:		2147483647	std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	-	X	0	X	/	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search			Not classified		link		Not classified	

Channel-specific system variables

DOUBLE	\$AC_CTOL					Active contour tolerance	reference:	
description:								
\$AC_CTOL defines the contour tolerance for compressors and smoothing with which the current main run block was prepared.								
unit: mm								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search				Not classified		link Not classified		

DOUBLE	\$AC_OTOL					Active orientation tolerance	reference:	
description:								
\$AC_OTOL defines the orientation tolerance for compressors and smoothing with which the current main run block was prepared.								
unit: deg.								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search				Not classified		link Not classified		

DOUBLE	\$P_CTOL					Programmed contour tolerance	reference:	
description:								
\$P_CTOL states the contour tolerance for compressors and smoothing programmed with CTOL in the part program. If no value is programmed, the variable returns -1.								
unit: mm								
min.:		-1.0		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search				Not classified		link Not classified		

Channel-specific system variables

DOUBLE	\$P_OTOL		Programmed orientation tolerance		reference:	
description:						
\$P_OTOL states the orientation tolerance for compressors and smoothing programmed with OTOL in the part program. If no value is programmed, the variable returns -1.						
unit:		deg.				
min.:		-1.0		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		
				channel-specific		
block search		Not classified		link		Not classified

INT	\$AC_FGROUP_MASK		Codes of the axes that contribute to the path velocity		reference:	
description:						
The variable returns a bit code for those channel axes programmed with the FGROUP command that are to contribute to the path velocity.						
unit:		-				
min.:		0		max.:		0xFFFF
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		
				channel-specific		
block search		Not classified		link		Not classified

INT	\$P_FGROUP_MASK		Codes of the axes that contribute to the path velocity		reference:	
description:						
The variable returns a bit code for those channel axes programmed with the FGROUP command that are to contribute to the path velocity.						
unit:		-				
min.:		0		max.:		0xFFFF
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		
				channel-specific		
block search		Not classified		link		Not classified

Channel-specific system variables

INT	\$AC_AUXFU_EXT [128]						Extension of the active auxiliary function	reference:	
description:									
The array variable \$AC_AUXFU_EXT[n] is used to read the extension of the last auxiliary function collected for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The index corresponds to the group number decremented by one. The index 0 thus determines the extension of the last output auxiliary function of the 1st group. If an auxiliary function has not yet been output for the specified group, then the variable returns the value -1. The associated value of the auxiliary function can be determined by the variable \$AC_AUXFU_VALUE[n]. The variable \$AC_AUXFU_STATE[n] determines the current output status.									
Index 1: The index corresponds to the auxiliary function group number decremented by one.									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link		Not classified	
INT	\$AC_AUXFU_STATE [128]						Output status of the active auxiliary function	reference:	
description:									
The array variable \$AC_AUXFU_STATE[n] is used to read the output status of the last auxiliary function collected for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The index corresponds to the group number decremented by one. The index 0 thus determines the status of the last output auxiliary function of the 1st group. If an auxiliary function has not yet been output for the specified group, then the variable returns the value 0. If the value is greater than zero, then the value of the associated auxiliary function can be determined by the variable \$AC_AUXFU_VALUE[n]. The variable \$AC_AUXFU_EXT[n] determines the current extension of the auxiliary function.									
The variable returns the following values									
0: Auxiliary function not available									
1: Auxiliary function has been collected by means of a search run									
2: Auxiliary function has been output to the PLC									
3: Auxiliary function has been output to the PLC and the transport acknowledgement has been made.									
4: Auxiliary function has been accepted is being managed by the PLC.									
5: Auxiliary function is being managed by the PLC and the function acknowledgement has been made.									
Index 1: The index corresponds to the auxiliary function group number decremented by one.									
unit:									
min.: 0 max.: 5 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link		Not classified	

Channel-specific system variables

DOUBLE	\$AC_AUXFU_VALUE [128]		value of the active auxiliary function			reference:		
description:								
The array variable \$AC_AUXFU_VALUE[n] is used to read the value of the last auxiliary function collected for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The index corresponds to the group number decremented by one. The index 0 thus determines the value of the last output auxiliary function of the 1st group. If an auxiliary function has not yet been output for the specified group, then the variable returns the value -1. The associated extension can be determined by the variable \$AC_AUXFU_EXT[n]. The variable \$AC_AUXFU_STATE[n] determines the current output status.								
index 1:		The index corresponds to the auxiliary function group number decremented by one.						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:					valuation:			channel-specific
block search			Not classified		link			Not classified
INT	\$AC_AUXFU_TICK [128,2]		Output counter of the active auxiliary function			reference:		
description:								
The array variable \$AC_AUXFU_TICK[groupIndex, n] is used to read the three output counters of the last auxiliary function collected for an auxiliary function group (search run) or output.								
The variable is changed each time an auxiliary function is output through all channels.								
n = 0: Output sequence counter (all outputs within one IPO cycle)								
n = 1: Package counter within an output sequence in the interpolation cycle								
n = 2: Auxiliary function counter within a package								
An auxiliary function package consists of a maximum of 10 auxiliary functions. Two packages per channel can be executed in each IPO cycle during SERUPRO because the synchronized actions are also processed in the same cycle. An output sequence of up to 20 packages can be executed through all channels in one IPO cycle.								
All the auxiliary functions collected in one IPO cycle have the same sequence counter.								
All the auxiliary functions that have been collected in one package (block or synact) have the same package counter.								
The auxiliary function counter is incremented for each auxiliary function collected.								
index 1:		The index corresponds to the auxiliary function group number decremented by one.						
index 2:		The index corresponds to the type of the counter. n=0: sequence-counter n=1: packet-counter in every sequence n=2: auxfu-counter in every packet						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:					valuation:			channel-specific
block search			Not classified		link			Not classified

Channel-specific system variables

CHAR	\$AC_AUXFU_TYPE [128]						Types or active auxiliary function	reference:	
description:									
The array variable \$AC_AUXFU_TYPE[n] is used to read the types M, H, S, T, D, F, L of the last auxiliary function collected for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The index corresponds to the group number decremented by one. The index 0 thus determines the types of the last output auxiliary function of the 1st group. If an auxiliary function has not yet been output for the specified group, then the variable returns the value "". The associated value of the auxiliary function can be determined by the variable \$AC_AUXFU_VALUE[n]. The variable \$AC_AUXFU_STATE[n] determines the current output status.									
Index 1:		The index corresponds to the auxiliary function group number decremented by one.							
unit:									
min.:		0		max.:		255		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:			channel-specific
block search		Not classified				link		Not classified	
INT	\$AC_AUXFU_PREDEF_INDEX [128]						Predefined index of the active auxiliary function	reference:	
description:									
The array variable \$AC_AUXFU_PREDEF_INDEX[n] is used to read the predefined index of the last auxiliary function collected for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The array index corresponds to the group number decremented by one. The index 0 thus determines the predefined index of the last output auxiliary function of the 1st group. If an auxiliary function has not yet been output for the specified group or if the auxiliary function is a user-defined auxiliary function, then the variable returns the value -1. The associated value of the auxiliary function can be determined by the variable \$AC_AUXFU_VALUE[n]. The variable \$AC_AUXFU_STATE[n] determines the current output status.									
Index 1:		The index corresponds to the auxiliary function group number decremented by one.							
unit:									
min.:		-1		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:			channel-specific
block search		Not classified				link		Not classified	

Channel-specific system variables

INT	\$AC_AUXFU_SPEC [128]			Output specification of the active auxiliary function	reference:	
description:						
<p>The array variable \$AC_AUXFU_SPEC[n] is used to read the output specification corresponding to \$MC_AUXFU_PREDEF_SPEC[n], \$MC_AUXFU_ASSIGN_SPEC[n] of the last auxiliary function collected for an auxiliary function group (search run) or output. Auxiliary functions are assigned to groups. The index corresponds to the group number decremented by one. The index 0 thus determines the specification of the last output auxiliary function of the 1st group. The associated value of the auxiliary function can be determined by the variable \$AC_AUXFU_VALUE[n]. The variable \$AC_AUXFU_STATE[n] determines the current output status.</p> <p>The output specification is bit-coded:</p> <p>Bit 0 = 1acknowledgment "normal" after an OB1 cycle</p> <p>Bit 1 = 1acknowledgment "quick" with OB40</p> <p>Bit 2 = 1No predefined auxiliary function</p> <p>Bit 3 = 1No output to the PLC</p> <p>Bit 4 = 1Spindle reaction after acknowledgement by the PLC</p> <p>Bit 5 = 1Output before the motion</p> <p>Bit 6 = 1Output during the motion</p> <p>Bit 7 = 1Output at end of block</p> <p>Bit 8 = 1No output after block search types 1, 2, 4</p> <p>Bit 9 = 1Collection during block search type 5 (SERUPRO)</p> <p>Bit10 = 1 No output during block search type 5 (SERUPRO)</p> <p>Bit 11 = 1Cross-channel auxiliary function (SERUPRO)</p> <p>Bit 12 = 1Output via synchronized action</p> <p>Bit 13 = 1 Implicit auxiliary function</p> <p>Bit 14 = 1 Active M01</p> <p>Bit 15 = 1 No output during running-in test</p> <p>Bit 16 = 1 Nibbling off</p> <p>Bit 17 = 1 Nibbling on</p> <p>Bit 18 = 1 Nibbling</p>						
index 1:		The index corresponds to the auxiliary function group number decremented by one.				
unit:						
min.:		-2147483648	max.:		2147483647	std: 0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified			link	Not classified

Channel-specific system variables

FRAME	\$P_TRAFRAME_P		Frame of the workpiece component of an active orientation transformation	reference:		
description:						
This variable returns the frame, which describes the current rotation and offset of the workpiece part of an active kinematic orientation transformation.						
Here, workpiece part means the kinematic chain defined between machine zero and workpiece reference point.						
unit:						
min.:						
max.:						
std:						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
FRAME	\$P_TRAFRAME_T		Frame of the workpiece component of an active orientation transformation	reference:		
description:						
This variable returns the frame, which describes the current rotation and offset of the tool part of an active kinematic orientation transformation.						
Here, tool part means the kinematic chain defined between machine zero and tool reference point.						
unit:						
min.:						
max.:						
std:						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$P_FZ		Programmed tooth feed	reference:		
description:						
The variable \$P_FZ is used to read the last programmed tooth feed FZ.						
unit: mm/min						
min.: -1,8E308						
max.: 1,8E308						
std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_FZ		Active programmed tooth feed				reference:	
description:								
The variable \$AC_FZ is used to read the active programmed tooth feed FZ.								
unit: mm/min								
min.:		1,8E308		max.:		1,8E308		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search		Not classified			link		Not classified	
INT	\$P_F_TYPE		Types of programmed feed				reference:	
description:								
The variable \$P_F_TYPE is used to read the type of the last programmed feed.								
unit: -								
min.:		0		max.:		31		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search		Not classified			link		Not classified	
INT	\$AC_F_TYPE		Types of active programmed feed				reference:	
description:								
The variable \$AC_F_TYPE is used to read the type of the active programmed feed.								
unit: -								
min.:		0		max.:		31		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search		Not classified			link		Not classified	
DOUBLE	\$P_SVC [1]		Programmed cutting speed				reference:	
description:								
The variable \$P_SVC[n] is used to read the last programmed cutting speed SVC. n: Number of the spindle								

Channel-specific system variables

Index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:	mm/min					
min.:	-1,8E308	max.:	1,8E308	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
DOUBLE	\$AC_SVC [1]			Active programmed cutting speed		reference:
description:						
The variable \$AC_SVC is used to read the active programmed cutting speed SVC.						
n: Number of the spindle						
Index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:	mm/min					
min.:	-1,8E308	max.:	1,8E308	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$P_S_TYPE [1]			Type of spindle programming		reference:
description:						
The variable \$P_S_TYPE is used to read the type of spindle programming.						
0 Spindle not programmed						
1 Spindle speed S in rpm						
2 Cutting speed SVC in m/min or ft/min						
3 Constant cutting speed S in m/min or ft/min						
4 Constant grinding wheel peripheral speed S in m/s or ft/s						
Index 1:	n: Spindle number 0 ... Max. spindle number for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.					
unit:	-					
min.:	0	max.:	31	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Channel-specific system variables

INT	\$AC_S_TYPE [1]						Types of active spindle programming	reference:	
description:									
The variable \$P_S_TYPE is used to read the active type of spindle programming.									
0 Spindle not programmed									
1 Spindle speed S in rpm									
2 Cutting speed SVC in m/min or ft/min									
3 Constant cutting speed S in m/min or ft/min									
4 Constant grinding wheel peripheral speed S in m/s or ft/s									
index 1:	n: Spindle number						0 ... Max. spindle number	for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.	
unit:									
min.:	0		max.:	31		std:	0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:						valuation:	channel-specific		
block search	Not classified					link	Not classified		
INT	\$VC_SGEAR [n]						Currently activated spindle gear stage	reference:	
description:									
The variable \$VC_SGEAR[spino] determines the currently activated spindle gear stage. \$AC_SGEAR[spino] determines the set gear stage in the main run. In the case of the search run, the actual gear stage can vary from the set gear stage, as a gear stage change cannot take place during the search run. Using \$VC_SGEAR[spino] and \$AC_SGEAR[spino], it can be checked whether a gear stage change should take place following a search run.									
The following values are possible:									
1: 1. Gear stage is active									
....									
5: 5. Gear stage is active									
index 1:	0 ... Max. spindle number						for the spindle numbers configured in MD 35000 SPIND_ASSIGN_TO_MACHAX.		
unit:									
min.:	1		max.:	5		std:	0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						valuation:	channel-specific		
block search	Not classified					link	Not classified		

Channel-specific system variables

DOUBLE	\$P_ORI_POS [2,3]		Positions of the orientation axes in the case of orientation programming		reference:	
description:						
The positions of the rotary axes, which result from orientation programming.						
In this case, the first index (0 or 1) refers to the solution, whereas the second index (0..2) refers to the orientation axis, see also \$P_ORI_SOL and \$P_ORI_STAT.						
Index 1:						
-						
Index 2:						
-						
unit:						
-						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	
					No restrictions	
DOUBLE	\$P_ORI_DIFF [2,3]		Deviation of axis positions from theor. value in the case of orientation progr.		reference:	
description:						
The difference between the exact positions of the orientation axes and those provided in \$P_ORI_POS, which result from orientation programming.						
The content may be unequal to zero only if the positions are gridded (Hirth tooth system), i.e if the system data \$NT_HIRTH_INCR of the affected axis is unequal to zero and if this axis is a manual rotary axis.						
In this case, the first index (0 or 1) refers to the solution, whereas the second index (0..2) refers to the orientation axis, see also \$P_ORI_SOL.						
Index 1:						
-						
Index 2:						
-						
unit:						
-						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	
					No restrictions	

Channel-specific system variables

INT	\$P_ORI_SOL	Number of solutions in the case of orientation programming	reference:				
description:							
<p>If the axis positions are calculated in the case of an orientation transformation with more than one orientation axis which results in a specified orientation, generally more than one solution is offered.</p> <p>This system data contains the number of valid solutions along with additional status information.</p> <p>The content of \$P_ORI_SOL is coded as follows:</p> <p>Negative values: General error states.</p> <p>-1: No solutions have been calculated for the active transformation (missing call of ORISOL).</p> <p>-2: No transformation is active or the active transformation is not an orientation transformation, which is able to return positions to a specified orientation programming.</p> <p>Unit place: Number of mathematically possible solutions without considering axis limits and possible error conditions.</p> <p>0: A solution does not exist, i.e. the required orientation cannot be set.</p> <p>1: A solution exists.</p> <p>2: Two solutions exist.</p> <p>9: Numerous solutions exist, i.e. the position of at least one orientation axis is not specified. The unspecified axis can be determined from the hundreds place or from the system variable \$P_ORI_STAT.</p> <p>Ten's place: bit-coded display for damaged axis limits. The exact cause of the error can be determined from the system variable \$P_ORI_STAT.</p> <p>Bit 0 (value 10): at least one axis limit of the 1st orientation axis is damaged for at least one solution.</p> <p>Bit 1 (value 20): at least one axis limit of the 2nd orientation axis is damaged for at least one solution.</p> <p>Bit 2 (value 40): at least one axis limit of the 3rd orientation axis is damaged for at least one solution.</p> <p>Hundreds place: Bit-coded display for non-defined axis positions (can only occur if numerous solutions are available, i.e. if the unit place is equal to 9).</p> <p>Bit 0 (value 100): The position of the 1st orientation axis is not defined.</p> <p>Bit 1 (value 200): The position of the 2nd orientation axis is not defined.</p> <p>Bit 2 (Wert 400): The position of the 3rd orientation axis is not defined.</p> <p>The identifiers 1st, 2nd and 3rd orientation axis refer to the definition of the axes in the transformer data \$NT_ROT_AX_NAME.</p>							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:						Valuation:	channel-specific
block search	Not classified					link	No restrictions

INT	\$P_ORI_STAT [ORIDIM]			Status of the orientation axes	reference:	
description:						
<p>The system variable contains the status of each orientation axis following the call of ORISOL.</p> <p>The index n of \$P_ORI_STAT[n] corresponds to the index of the affected orientation axis in the transformer data \$NT_ROT_AX_NAME[n].</p> <p>The content of \$P_ORI_SOL is coded as follows:</p> <p>Negative values: General error states.</p> <p>-1: The status is not defined (missing call of ORISOL).</p> <p>-2: No transformation is active or the active transformation is not an orientation transformation, which is able to return positions to a specified orientation programming.</p> <p>-3: The axis is not contained in the active transformation.</p> <p>Unit place: Bit-coded display for damaged axis limits of the first solution.</p> <p>Bit 0 (value 1):The first solution damages the lower axis limit.</p> <p>Bit 1 (value 2):The first solution damages the upper axis limit.</p> <p>Ten's place: bit-coded display for damaged axis limits of the second solution.</p> <p>Bit 0 (value 10):The second solution damages the lower axis limit.</p> <p>Bit 1 (value 20):The second solution damages the upper axis limit.</p> <p>Hundreds place: displays a non-defined axis position.</p> <p>Bit 0 (value 100):The position of the orientation axis is not defined, i.e. the required orientation is achieved through any setting of the rotary axis (pole setting). This information is also contained the system variable \$P_ORI_SOL.</p> <p>Several fault codes, which display damage to the axis limits, can occur simultaneously. Since in the case of damage to an axis limit, a position within the permitted axis limits is aimed for through adding or subtracting multiples of 360 degrees, if this is not possible - it is not clearly defined, whether the lower or upper axis limit has been damaged.</p> <p>If a solution is not available for the desired orientation (\$P_ORI_SOL equals 0), the status of the orientation axes 0 is contained in the transformation.</p>						
Index 1:						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link	No restrictions	

Channel-specific system variables

INT	\$P_MTOOLN		Number of defined Multitools		reference:	
description:						
\$P_MTOOLN						
Number of defined Multitools, which are assigned to the channel						
OPI block type= MTV						
unit:						
-						
min.:		-2		max.:		600
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	
					No restrictions	
INT	\$P_MTOOLMT [600]		Multitool number		reference:	
description:						
\$P_MTOOLMT[i]						
i-te Multitool number						
OPI block type= MTV						
Index 1:						
i-th multitool, with i= 1,..., \$P_MTOOLN						
unit:						
-						
min.:		-2		max.:		600
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	
					No restrictions	
INT	\$P_MTOOLNT [32000]		Number of tools in Multitool		reference:	
description:						
\$P_MTOOLNT						
Number of tools in Multitool						
Index 1:						
Number of multitools; 1,..., 32000						
unit:						
-						
min.:		-3		max.:		SLMAXLOCATION SPERMT
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	
					No restrictions	

Channel-specific system variables

INT	\$P_MTOOLT [32000,SLMAXLOCATIONS]	SPERMT	T	number of the i-th tool in MT	reference:	
description:						
\$P_MTOOLT						
T number of the i-th tool in Multitool						
Index 1:		Number of multitools; 1,..., 32000				
Index 2:		i-th tool in the multitool, with i= 1,..., \$P_MTOOLT				
unit:		-				
min.:		-2		max.: 600		
				std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions
INT	\$A_MYMTN [32000]		T	Number of the proprietary Multitool tool location with the T No. t.	reference:	
description:						
\$A_MYMTN[t]						
Number of the proprietary Multitool tool location with the T No. t.						
Index 1:		t: T number 1 - 32000				
unit:		-				
min.:		-3		max.: 32000		
				std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions
INT	\$A_TOOLMTN [32000]		T	Multitool number of tool t	reference:	
description:						
\$A_TOOLMTN[t]						
Multitool number of tool t						
Index 1:		t: T number 1 - 32000				
unit:		-				
min.:		-3		max.: 32000		
				std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions

Channel-specific system variables

INT	\$A_MYMTLN [32000]					reference:	
description:							
\$A_MYMTLN[t]							
Number of the proprietary Multitool tool location with the T No. t.							
Index 1: t: T number 1 - 32000							
unit:							
min.: -3 max.: 32000 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search					link	No restrictions	
INT	\$A_TOOLMTLN [32000]					reference:	
description:							
\$A_TOOLMTLN[t]							
Multitool location number of tool t							
Index 1: t: T number 1 - 32000							
unit:							
min.: -3 max.: 32000 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search					link	No restrictions	
INT	\$AC_TC_TOOLIS			Is a simple tool or a Multitool transported?		reference:	
description:							
\$AC_TC_TOOLIS							
-1: At the time of reading, no tool command is active.							
0: the transported tool is an individual tool.							
1: the transported tool is an MT with a location number as distance coding.							
2: the transported tool is an MT with length distance as distance coding.							
3: the transported tool is an MT with angle distance as distance coding.							
unit:							
min.: -1 max.: 3 std: -1							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search					link	Not classified	

Channel-specific system variables

DOUBLE	\$AC_TC_MTDIST		Distance between tool in Multitool and the reference point			reference:	
description:							
\$AC_TC_MTDIST							
Distance between tool in Multitool and the reference point.							
-1.0: At the time of reading, no tool management command is active.							
unit:							
min.:		-1.0		max.:		1000.0	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
INT	\$AC_TC_MTNLOC		Number of locations for tool change and tool transport contained in the MT			reference:	
description:							
\$AC_TC_MTNLOC							
Number of locations for tool change and tool transport contained in the MT.							
-1: At the time of reading, no tool management command is active.							
0: The new tool of the command at the PLC is a single tool.							
>=2: The new tool of the command at the PLC is an MT with the specified number of locations.							
unit:							
min.:		-1		max.:		SLMAXLOCATION SPERMT	
				std:		-1	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
INT	\$AC_TC_MTTN		Number of the Multitool with the new tool			reference:	
description:							
\$AC_TC_MTTN							
Number of the Multitool with the new tool							
-1: At the time of reading, no tool management command is active.							
0: The new tool of the command at the PLC is a single tool.							
>0: The new tool of the command at the PLC is an MT with this number.							
unit:							
min.:		-1		max.:		32000	
				std:		-1	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			

Channel-specific system variables

INT	\$AC_TC_MTLTN		Number of the Multitool location with the new tool			reference:	
description:							
\$AC_TC_MTLTN Number of the Multitool location with the new tool. -1: At the time of reading, no tool management command is active. 0: The new tool of the command at the PLC is a single tool. >0: MT location number of the target location of the new tool.							
unit:							
min.: -1 max.: 32000 std: -1							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified		link		Not classified	
DOUBLE	\$AC_PRTIME_B		calculated program runtime (block by block)			reference:	
description:							
\$AC_PRTIME_B "ProgramRunTIME-Block" Reading the precalculated program runtime (block by block) During the simulation, the anticipated processing time of the blocks in the part program is calculated by the NCK and made available in this system variable and the OPI variable 'acPRTIMEB'.							
unit:							
min.: 0 max.: 1,8E308 std: 0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	7	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified		link		Not classified	
DOUBLE	\$AC_STOLF		Active G00 tolerance factor			reference:	
description:							
\$AC_STOLF names the G00 tolerance factor for compressors and smoothing, which was used to prepare the current main run record. If a G00 toleranz factor is not programmed with STOLF = <...>, the value of machine data \$MC_G0_TOLERANCE_FACTOR is read. If rapid traverse (G00) is not active, this variable will return the value 1.							
unit:							
min.: -1,8E308 max.: 1,8E308 std: 0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified		link		Not classified	

Channel-specific system variables

DOUBLE	\$P_STOLF			Programmed G00 tolerance factor		reference:	
description:							
<p>\$P_STOLF names the G00 tolerance factor, which is programmed with STOLF in the part program for compressors and smoothing. If a value is not programmed, the variable returns the value of MD \$MC_G0_TOLERANCE_FACTOR. If fast motion (G00) is not active, this variable returns the value 1.</p>							
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		Not classified	

INT	\$P_TMNOIS [32000]			Actual number, 1 number, magazine number or MT number		reference:	
description:							
<p>\$P_TMNOIS[t]</p> <p>3 = Index is the number of a defined tool and the number of a defined magazine</p> <p>2 = Index is the number of a defined magazine</p> <p>1 = Index is the T number of a defined tool</p> <p>0 = Index is the MT number of a defined Multitool</p> <p>-3 = invalid index. Is neither the number of a tool nor the number of a Multitool.</p>							
Index 1:							
The tool/magazine number to be evaluated.							
unit:							
min.:		-3		max.:		3	
				std:		-3	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		No restrictions	

Frames

1.4 Frames

FRAME	\$P_UIFR [n]						Settable data management frames	reference:	
description:									
Array variable \$P_UIFR[n] is used to program settable data management frames. G500, G54 .. G599 can be used to activate the corresponding data management frame. The data management frames are stored in SRAM and can be read in and out using the data backup feature.									
Index 1:									
\$MC_MM_NUM_USER_FRAMES is used to program the number of settable frames. 0: G500 1: G54 2: G55 3: G56 4: G57 5: G505 6: G506 .. 99: G599									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	No restrictions			
FRAME	\$P_CHBFR [n]						Channel-specific basic frames in the data management system	reference:	
description:									
Array variable \$P_CHBFR[n] is used to program channel-specific basic frames in the data management system. G500, G54 .. G599 can be used to activate the data management frames. All active basic frames are chained together to produce the overall basic frame \$P_ACTBFRAME. The data management frames are stored in SRAM and can be read in and out using the data backup feature.									
Index 1:									
\$MC_MM_NUM_BASE_FRAMES is used to program the number of channel basic frames.									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	No restrictions			

FRAME	\$P_SETFR	Data management frame for preset actual value memory					reference:
description:							
Variable \$P_SETFR is used to program the system frame in the data management system for preset actual value memory and scratching. This frame should only be manipulated and activated by the system function. The data management frames are stored in SRAM and can be read in and out using the data backup feature. On a Reset, the system frame can be cleared by configuring Bit 0 in \$MC_CHSFRAME_RESET_CLEAR_MASK.							
unit:							
min.:		max.:			std:		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		No restrictions
FRAME	\$P_EXTFR	Data management frame for external frame					reference:
description:							
Variable \$P_EXTFR is used to program the system frame in the data management system for the external work offset. This frame is activated by the PLC. The data management frames are stored in SRAM and can be read in and out using the data backup feature. On a Reset, the system frame can be cleared by configuring Bit 1 in \$MC_CHSFRAME_RESET_CLEAR_MASK.							
unit:							
min.:		max.:			std:		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		No restrictions
FRAME	\$P_PARTFR	Data management frame for TCARR and PAROT					reference:
description:							
Variable \$P_PARTFR is used to program the system frame in the data management system for TCARR and PAROT. This frame should only be manipulated and activated by the system function. The data management frames are stored in SRAM and can be read in and out using the data backup feature.							
unit:							
min.:		max.:			std:		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		No restrictions

Frames

FRAME	\$P_TOOLFR						Data management frame for TOROT and TOFRAME	reference:	
description:									
Variable \$P_TOOLFR is used to program the system frame in the data management system for TOROT and TOFRAME. This frame should only be manipulated and activated by the system function. The data management frames are stored in SRAM and can be read in and out using the data backup feature.									
unit:									
min.:			max.:			std:			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		
FRAME	\$P_WPFR						Data management frame for workpiece	reference:	
description:									
Variable \$P_WPFR is used to program the system frame in the data management system for workpiece reference points. The data management frames are stored in SRAM and can be read in and out using the data backup feature.									
On a Reset, the system frame can be cleared by configuring Bit 4 in \$MC_CHSFRAME_RESET_CLEAR_MASK.									
unit:									
min.:			max.:			std:			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		
FRAME	\$P_CYCFR						Data management frame for cycles	reference:	
description:									
Variable \$P_CYCFR is used to program the system frame in the data management system for cycles. This frame should only be manipulated and activated by cycles. The data management frames are stored in SRAM and can be read in and out using the data backup feature.									
On a Reset, the system frame can be cleared by configuring Bit 5 in \$MC_CHSFRAME_RESET_CLEAR_MASK.									
unit:									
min.:			max.:			std:			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

FRAME	\$P_TRAFR	Data management frame for transformations					reference:
description:							
Variable \$P_TRAFR is used to program the system frame in the data management system for transformations. This frame should only be manipulated and activated by the system function. The data management frames are stored in SRAM and can be read in and out using the data backup feature.							
unit:							
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified		link		No restrictions	
FRAME	\$P_ISO1FR	Data management frame for ISO G51.1 mirroring					reference:
description:							
Variable \$P_ISO1FR is used to program the system frame in the data management for the ISO G code G51.1 mirroring. This frame should only be manipulated and activated via the system function. The data management frames are stored in SRAM and can be read in and out using the data backup feature.							
On reset, the system frame can be deleted via the configuration of bit 0 in \$MC_CHSFRAME_RESET_CLEAR_MASK.							
unit:							
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified		link		No restrictions	
FRAME	\$P_ISO2FR	Data management frame for ISO G68 2DROT					reference:
description:							
Variable \$P_ISO2FR is used to program the system frame in the data management for the ISO G68 2DROT. This frame should only be manipulated and activated via the system function. The data management frames are stored in SRAM and can be read in and out using the data backup feature.							
On reset, the system frame can be deleted via the configuration of bit 0 in \$MC_CHSFRAME_RESET_CLEAR_MASK.							
unit:							
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified		link		No restrictions	

Frames

FRAME	\$P_ISO3FR						Data management frame for ISO G68 3DROT	reference:	
description:									
Variable \$P_ISO3FR is used to program the system frame in the data management for the ISO G68 3DROT. This frame should only be manipulated and activated via the system function. The data management frames are stored in SRAM and can be read in and out using the data backup feature.									
On reset, the system frame can be deleted via the configuration of bit 0 in \$MC_CHSFRAME_RESET_CLEAR_MASK.									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:							Valuation:	channel-specific	
block search		Not classified				link	No restrictions		
FRAME	\$P_ISO4FR						Data management frame for ISO G51 Scale	reference:	
description:									
Variable \$P_ISO4FR is used to program the system frame in the data management for the ISO G code G51 Scale. This frame should only be manipulated and activated via the system function. The data management frames are stored in SRAM and can be read in and out using the data backup feature.									
On reset, the system frame can be deleted via the configuration of bit 0 in \$MC_CHSFRAME_RESET_CLEAR_MASK.									
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:							Valuation:	channel-specific	
block search		Not classified				link	No restrictions		

FRAME	\$P_RELFR						Data management frame for relative coordinate systems	reference:
description:								
The variable \$P_RELFR is used for programming the system frame in the data management for relative coordinate systems. This frame should only be activated and manipulated via the system function. The data management frames are stored in the SRAM, and can be read in and out via the data backup.								
The system frame is configured in the following machine data:								
Bit 11 in \$MC_MM_SYSTEM_FRAME_MASK								
Bit 11 in \$MC_MM_SYSTEM_DATAFRAME_MASK								
Bit 11 in \$MC_CHSFRAME_RESET_MASK								
Bit 11 in \$MC_CHSFRAME_RESET_CLEAR_MASK								
Bit 11 in \$MC_CHSFRAME_POWERON_MASK								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:			channel-specific	
block search		Not classified			link		No restrictions	
FRAME	\$P_NCBFR [n]						Global basic frames in the data management system	reference:
description:								
Array variable \$P_NCBFR[n] is used to program global basic frames in the data management system. G500, G54 .. G599 can be used to activate the data management frames. All active basic frames are chained together to produce the overall basic frame \$P_ACTBFRAME. The data management frames are stored in SRAM and can be read in and out using the data backup feature.								
Index 1: \$MN_MM_NUM_GLOBAL_BASE_FRAMES is used to program the number of NCU basic frames.								
unit:								
min.:								
max.:								
std:								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:			channel-specific	
block search		Not classified			link		No restrictions	

Tool carrier data

1.5 Tool carrier data

DOUBLE	\$TC_CARR1 [n]			X component of offset vector I1	reference:	
description:						
\$TC_CARR1[n]						
X component of offset vector I1						
Attention! All system parameters beginning with '\$TC_' are parameters belonging to the TOA area.						
The special characteristic of this area is that machine data 28085 = MM_LINK_TOA_UNIT can be set to allow different NCK channels to access these parameters.						
If this type of parameter setting has been selected by the NCK, you must be aware that changing these data can have						
a negative impact on other channels. Before you change any data settings, make sure that the changes will have						
only a local effect on the channel in which they are made.						
Index 1:						
The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.						
unit: mm						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		
DOUBLE	\$TC_CARR2 [n]			Y component of offset vector I1	reference:	
description:						
\$TC_CARR2[n]						
Y component of offset vector I1						
Index 1:						
The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.						
unit: mm						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link No restrictions		

Tool carrier data

DOUBLE	\$TC_CARR3 [n]		Z component of offset vector I1	reference:		
description:						
\$TC_CARR3[n]						
Z component of offset vector I1						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR4 [n]		X component of offset vector I2	reference:		
description:						
\$TC_CARR4[n]						
X component of offset vector I2						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR5 [n]		Y component of offset vector I2	reference:		
description:						
\$TC_CARR5[n]						
Y component of offset vector I2						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Tool carrier data

DOUBLE	\$TC_CARR6 [n]		Z component of offset vector I2	reference:		
description:						
\$TC_CARR6[n]						
Z component of offset vector I2						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR7 [n]		X component of rotary axis v1	reference:		
description:						
\$TC_CARR7[n]						
X component of rotary axis v1						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR8 [n]		Y component of rotary axis v1	reference:		
description:						
\$TC_CARR8[n]						
Y component of rotary axis v1						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Tool carrier data

DOUBLE	\$TC_CARR9 [n]		Z component of rotary axis v1	reference:		
description:						
\$TC_CARR9[n]						
Z component of rotary axis v1						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR10 [n]		X component of rotary axis v2	reference:		
description:						
\$TC_CARR10[n]						
X component of rotary axis v2						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR11 [n]		Y component of rotary axis v2	reference:		
description:						
\$TC_CARR11[n]						
Y component of rotary axis v2						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Tool carrier data

DOUBLE	\$TC_CARR12 [n]		Z component of rotary axis v2	reference:		
description:						
\$TC_CARR12[n]						
Z component of rotary axis v2						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR13 [n]		Angle of rotation alpha1 (in degrees)	reference:		
description:						
\$TC_CARR13[n]						
Angle of rotation alpha1 (in degrees)						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR14 [n]		Angle of rotation alpha2 (in degrees)	reference:		
description:						
\$TC_CARR14[n]						
Angle of rotation alpha2 (in degrees)						
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

DOUBLE	\$TC_CARR15 [n]		X component of offset vector I3			reference:		
description:								
\$TC_CARR15[n]								
X component of offset vector I3								
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_CARR16 [n]		Y component of offset vector I3			reference:		
description:								
\$TC_CARR16[n]								
Y component of offset vector I3								
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_CARR17 [n]		Z component of offset vector I3			reference:		
description:								
\$TC_CARR17[n]								
Z component of offset vector I3								
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Tool carrier data

DOUBLE	\$TC_CARR18 [n]		X component of offset vector I4		reference:	
description:						
\$TC_CARR18[n]						
X component of offset vector I4						
Index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR19 [n]		Y component of offset vector I4		reference:	
description:						
\$TC_CARR19[n]						
Y component of offset vector I4						
Index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR20 [n]		Z component of offset vector I4		reference:	
description:						
\$TC_CARR20[n]						
Z component of offset vector I4						
Index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

AXIS	\$TC_CARR21 [n]					Axis identifier of 1st rotary axis	reference:	
description:								
\$TC_CARR21[n]								
Axis identifier of 1st rotary axis								
index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:								
min.:		max.:		std:	GEOAXISNUM			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
AXIS	\$TC_CARR22 [n]					Axis identifier of 2nd rotary axis	reference:	
description:								
\$TC_CARR22[n]								
Axis identifier of 2nd rotary axis								
index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:								
min.:		max.:		std:	GEOAXISNUM			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
CHAR	\$TC_CARR23 [n]					Kinematic type	reference:	
description:								
\$TC_CARR23[n]								
Type of kinematics: P: Rotatable workpiece (Part)								
M: Rotatable tool and rotatable workpiece (Mixed)								
T or any other character apart from P and M: Rotatable tool								
index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = T, i.e. tool carrier with orientatable tool.							
unit:								
min.:	0	max.:	255	std:	T			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		

Tool carrier data

DOUBLE	\$TC_CARR24 [n]		Offset of 1st rotary axis in degrees			reference:	
description:							
\$TC_CARR24[n]							
Offset of 1st rotary axis in degrees							
Specifies the angle in degrees of the 1st rotary axis at which the axis assumes its initial position.							
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

DOUBLE	\$TC_CARR25 [n]		Offset of 2nd rotary axis in degrees			reference:	
description:							
\$TC_CARR25[n]							
Offset of 2nd rotary axis in degrees							
Specifies the angle in degrees of the 2nd rotary axis at which the axis assumes its initial position.							
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

DOUBLE	\$TC_CARR26 [n]		Offset of 1st rotary axis with Hirth teeth			reference:	
description:							
\$TC_CARR26[n]							
Specifies the offset of the 1st rotary axis if its position is not continuously variable (Hirth tooth system).							
This variable is evaluated only if \$TC_CARR28 is set to a value other than zero.							
For exact meanings, please refer to the description of \$TC_CARR28							
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

DOUBLE	\$TC_CARR27 [n]		Offset of 2nd rotary axis with Hirth teeth		reference:	
description:						
\$TC_CARR27[n]						
Specifies the offset of the 2nd rotary axis if its position is not continuously variable (Hirth tooth system).						
This variable is evaluated only if \$TC_CARR29 is set to a value other than zero.						
For exact meanings, please refer to the description of \$TC_CARR29						
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.				
unit:						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	X	-	7	X	7	-
axis identifier:					Valuation:	channel-specific
block search		Not classified			link	No restrictions
DOUBLE	\$TC_CARR28 [n]		Minimum incremental step of 1st rotary axis		reference:	
description:						
\$TC_CARR28[n]						
Specifies the size of the minimum increment (in degrees) by which the 1st rotary axis can change position (e.g. with Hirth tooth systems).						
A programmed or calculated angle is rounded to the nearest value						
calculated from $\phi = s + n * d$						
when n is an integer.						
In this equation						
s = \$TC_CARR28						
d = \$TC_CARR26						
If \$TC_CARR28 equals zero, \$TC_CARR26 and \$TC_CARR28 are not used.						
The settings in machine data						
\$MC_TOCARR_ROT_ANGLE_INCR[i] and \$MC_TOCARR_ROT_ANGLE_OFFSET[i]						
are applied instead.						
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.				
unit:						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	-
write:	X	-	7	X	7	-
axis identifier:					Valuation:	channel-specific
block search		Not classified			link	No restrictions

Tool carrier data

DOUBLE	\$TC_CARR29 [n]		Minimum incremental step of 2nd rotary axis		reference:	
description:						
\$TC_CARR29[n]						
Specifies the size of the minimum increment (in degrees) by which the 2nd rotary axis can change position (e.g. with Hirth tooth systems).						
A programmed or calculated angle is rounded to the nearest value calculated from $\phi = s + n * d$ when n is an integer.						
In this equation						
s = \$TC_CARR29						
d = \$TC_CARR27						
If \$TC_CARR29 equals zero, \$TC_CARR27 and \$TC_CARR29 are not used.						
The settings in machine data \$MC_TOCARR_ROT_ANGLE_INCR[i] and \$MC_TOCARR_ROT_ANGLE_OFFSET[i] are applied instead.						
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.				
unit:						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	No restrictions
DOUBLE	\$TC_CARR30 [n]		Minimum position of 1st rotary axis		reference:	
description:						
\$TC_CARR30[n]						
Specifies the minimum position of the 1st rotary axis. For full description, see \$TC_CARR32						
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.				
unit:						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	No restrictions

DOUBLE	\$TC_CARR31 [n]		Minimum position of 2nd rotary axis		reference:	
description:						
\$TC_CARR31[n]						
Specifies the minimum position of the 2nd rotary axis. For full description, see \$TC_CARR33						
index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR32 [n]		Maximum position of 1st rotary axis		reference:	
description:						
\$TC_CARR32[n]						
Specifies the maximum position of the 1st rotary axis.						
When the angle of the 1st rotary axis of an orientable tool carrier aligned according to a frame (TCOFR) is calculated, the only acceptable solutions are those which lie within the \$TC_CARR30 to \$TC_CARR32 range. The same applies when the rotary angle is programmed absolutely (TCOABS).						
The limits are not evaluated if both \$TC_CARR30 and \$TC_CARR32 equal zero.						
index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Tool carrier data

DOUBLE	\$TC_CARR33 [n]		Maximum position of 2nd rotary axis		reference:	
description:						
\$TC_CARR33[n]						
Specifies the maximum position of the 2nd rotary axis.						
When the angle of the 2nd rotary axis of an orientable tool carrier aligned according to a frame (TCOFR) is calculated, the only acceptable solutions are those which lie within the \$TC_CARR31 to \$TC_CARR33 range.						
The same applies when the rotary angle is programmed absolutely (TCOABS).						
The limits are not evaluated if both \$TC_CARR31 and \$TC_CARR33 equal zero.						
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.				
unit:						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	No restrictions
STRING	\$TC_CARR34 [n]		Freely usable string (tool carrier name)		reference:	
description:						
\$TC_CARR34[n]						
Contains a freely definable string. This is provided as a free identifier for the orientable tool carrier.						
However, it currently has no significance within the NCK, and is therefore not evaluated.						
This identifier should not be used for other purposes as it may be used in a future upgrade to allow the activation of an orientable tool carrier via a name rather than a number.						
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.				
Index 3:		max. string length				
unit:						
min.:				max.:		""
				std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	No restrictions

STRING	\$TC_CARR35 [n]						Freely available string (1st rotary axis name)	reference:	
description:									
\$TC_CARR35[n]									
Contains a freely definable string. This is provided as a free identifier for the first rotary axis.									
Within the NCK, however, it has no significance at all and is therefore not evaluated.									
It can also be used for any other purpose.									
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.								
Index 3:	max. string length								
unit:									
min.:	max.:		std:						
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search	Not classified			link		No restrictions			
STRING	\$TC_CARR36 [n]						Freely available string (2nd rotary axis name)	reference:	
description:									
\$TC_CARR36[n]									
Contains a freely definable string. This is provided as a free identifier for the second rotary axis.									
Within the NCK, however, it has no significance at all and is therefore not evaluated.									
It can also be used for any other purpose.									
Index 1:	The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.								
Index 3:	max. string length								
unit:									
min.:	max.:		std:						
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search	Not classified			link		No restrictions			

Tool carrier data

INT	\$TC_CARR37 [n]						Freely available numeric identifier (tool carrier number)	reference:	
description:									
\$TC_CARR37[n]									
Contains an integer number for identifying the toolholder.									
Within the NCK, however, it has no significance at all and is therefore not evaluated.									
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:									
-									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:						Valuation:			channel-specific
block search		Not classified				link		No restrictions	
DOUBLE	\$TC_CARR38 [n]						Freely available position value (X position)	reference:	
description:									
\$TC_CARR38[n]									
Contains a position (X component of retraction position)									
Within the NCK, however, it has no significance at all and is therefore not evaluated.									
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:									
mm									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:						Valuation:			channel-specific
block search		Not classified				link		No restrictions	
DOUBLE	\$TC_CARR39 [n]						Freely available position value (Y position)	reference:	
description:									
\$TC_CARR39[n]									
Contains a position (Y component of retraction position)									
Within the NCK, however, it has no significance at all and is therefore not evaluated.									
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:									
mm									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:						Valuation:			channel-specific
block search		Not classified				link		No restrictions	

Tool carrier data

DOUBLE	\$TC_CARR40 [n]						Freely available position value (Z position)	reference:	
description:									
\$TC_CARR40[n]									
Contains a position (Z component of retraction position)									
Within the NCK, however, it has no significance at all and is therefore not evaluated.									
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		
DOUBLE	\$TC_CARR41 [n]						Fine offset X of the offset vector I1	reference:	
description:									
\$TC_CARR41[n]									
X component of fine offset of offset vector I1									
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		
DOUBLE	\$TC_CARR42 [n]						Fine offset Y of the offset vector I1	reference:	
description:									
\$TC_CARR42[n]									
Y component of fine offset of offset vector I1									
Index 1:		The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

Tool carrier data

DOUBLE	\$TC_CARR43 [n]		Fine offset Z of the offset vector I1		reference:	
description:						
\$TC_CARR43[n]						
Z component of fine offset of offset vector I1						
index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308		max.:	1,8E308	std:	0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR44 [n]		Fine offset X of the offset vector I2		reference:	
description:						
\$TC_CARR44[n]						
X component of fine offset of offset vector I2						
index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308		max.:	1,8E308	std:	0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR45 [n]		Fine offset Y of the offset vector I2		reference:	
description:						
\$TC_CARR45[n]						
Y component of fine offset of offset vector I2						
index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308		max.:	1,8E308	std:	0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Tool carrier data

DOUBLE	\$TC_CARR46 [n]		Fine offset Z of the offset vector I2		reference:	
description:						
\$TC_CARR46[n]						
Z component of fine offset of offset vector I2						
Index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR55 [n]		Fine offset X of the offset vector I3		reference:	
description:						
\$TC_CARR55[n]						
X component of fine offset of offset vector I3						
Index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_CARR56 [n]		Fine offset Y of the offset vector I3		reference:	
description:						
\$TC_CARR56[n]						
Y component of fine offset of offset vector I3						
Index 1:			The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Tool carrier data

DOUBLE	\$TC_CARR57 [n]		Fine offset Z of the offset vector I3			reference:	
description:							
\$TC_CARR57[n]							
Z component of fine offset of offset vector I3							
Index 1:	data.			The maximum number of tool carriers can be set in machine			
The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	
DOUBLE	\$TC_CARR58 [n]		Fine offset X of the offset vector I4			reference:	
description:							
\$TC_CARR58[n]							
X component of fine offset of offset vector I4							
Index 1:	data.			The maximum number of tool carriers can be set in machine			
The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	
DOUBLE	\$TC_CARR59 [n]		Fine offset Y of the offset vector I4			reference:	
description:							
\$TC_CARR59[n]							
Y component of fine offset of offset vector I4							
Index 1:	data.			The maximum number of tool carriers can be set in machine			
The default setting is = 0, i.e. no data of this type are configured on the NCK.							
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	

DOUBLE	\$TC_CARR60 [n]		Fine offset Z of the offset vector I4			reference:	
description:							
\$TC_CARR60[n]							
Z component of fine offset of offset vector I4							
Index 1:				The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
DOUBLE	\$TC_CARR64 [n]		Fine offset of 1st rotary axis V1			reference:	
description:							
\$TC_CARR64[n]							
Fine offset of offset (\$TC_CARR24) of 1st rotary axis in degrees							
Index 1:				The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
DOUBLE	\$TC_CARR65 [n]		Fine offset of 2nd rotary axis V2			reference:	
description:							
\$TC_CARR65[n]							
Fine offset of offset (\$TC_CARR25) of 2nd rotary axis in degrees							
Index 1:				The maximum number of tool carriers can be set in machine data. The default setting is = 0, i.e. no data of this type are configured on the NCK.			
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		

Channel-specific protect

1.6 Channel-specific protect

BOOL	\$SSC_PA_ACTIV_IMMED [n]						Protection zone immediately active	reference:	
description:									
\$SSC_PA_ACTIV_IMMED[n]									
Protection zone immediately active after boot									
TRUE: The protection zone is activated immediately the control has booted and the axes have been referenced									
FALSE: The protection zone is not immediately active									
Note: This variable can only be written as a system variable and is not affected by the NC commands between NPROTDEF(..) and EXECUTE(n).									
Note: This variable is not restored during REORG.									
Note: This variable is saved during data backup.									
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI									
Index 1:	n: Number of protection zone						The maximum dimension is defined in		
unit:	MD \$MC_MM_NUM_PROTECT_AREA_CHAN.								
min.:	FALSE		max.:	TRUE		std:	FALSE		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:						Valuation:	channel-specific		
block search	Not classified					link	No restrictions		
CHAR	\$SSC_PA_T_W [n]						Protection zone specific to workpiece/tool	reference:	
description:									
\$SSC_PA_T_W[n]									
Protection zone specific to workpiece/tool									
0: Workpiece-specific protection zone									
3: Tool-specific protection zone									
Note: This variable is not restored during REORG.									
Note: This variable is saved during data backup.									
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI									
CHAx: x=channel no.									
Index 1:	n: Number of protection zone						The maximum dimension is defined in		
unit:	MD \$MC_MM_NUM_PROTECT_AREA_CHAN.								
min.:	0		max.:	3		std:	0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:						Valuation:	channel-specific		
block search	Not classified					link	No restrictions		

INT	\$SC_PA_ORI [n]		Orientation of protection zone		reference:	
description:						
\$SC_PA_ORI[n]						
Orientation of protection zone						
0: Polygon definition in the plane from the 1st and 2nd geo axes (G17)						
1: Polygon definition in the plane from the 3rd and 1st geo axes (G18)						
2: Polygon definition in the plane from the 2nd and 3rd geo axes (G19)						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
CHAx: x=channel no.						
index 1:			n: Number of protection zone		The maximum dimension is defined in	
			MD \$MC_MM_NUM_PROTECT_AREA_CHAN.			
unit:						
min.:	0		max.:	2		std:
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified				link	No restrictions
INT	\$SC_PA_LIM_3DIM [n]		Scope of application-limiting protection zone		reference:	
description:						
\$SC_PA_LIM_3DIM[n]						
Identifier for limitation of protection zone in the axis perpendicular to the polygon definition						
0: No limitation						
1: Limitation in the positive direction						
2: Limitation in the negative direction						
3: Limitation in both directions						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
CHAx: x=channel no.						
index 1:			n: Number of protection zone		The maximum dimension is defined in	
			MD \$MC_MM_NUM_PROTECT_AREA_CHAN.			
unit:						
min.:	0		max.:	3		std:
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified				link	No restrictions

Channel-specific protect

DOUBLE	\$\$SC_PA_PLUS_LIM [n]	Limitation of protection zone applicate plus	reference:			
description:						
\$\$SC_PA_PLUS_LIM[n]						
Positive limitation of protection zones in the axis perpendicular to the polygon definition.						
Effective only if \$\$SC_PA_LIM_3DIM[n]=1 or = 3.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
CHAx: x=channel no.						
Index 1:	n: Number of protection zone		The maximum dimension is defined in			
	MD \$MC_MM_NUM_PROTECT_AREA_CHAN.					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

DOUBLE	\$\$SC_PA_MINUS_LIM [n]	Limitation of protection zone applicate minus	reference:			
description:						
\$\$SC_PA_MINUS_LIM[n]						
Negative limitation of protection zone in minus direction in the axis perpendicular to the polygon definition						
Effective only if \$\$SC_PA_LIM_3DIM[n]=2 or = 3.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
CHAx: x=channel no.						
Index 1:	n: Number of protection zone		The maximum dimension is defined in			
	MD \$MC_MM_NUM_PROTECT_AREA_CHAN.					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

INT	\$SSC_PA_CONT_NUM [n]	Number of valid contour elements	reference:			
description:						
\$SSC_PA_CONT_NUM[n] Number of valid contour elements Protection zones need at least 2 contour elements for a complete description. Note: This variable is not restored during REORG. Note: This variable is saved during data backup. Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI CHAx: x=channel no.						
Index 1:	n: Number of protection zone The maximum dimension is defined in MD \$MC_MM_NUM_PROTECT_AREA_CHAN.					
unit:						
min.:	0	max.: 10	std: 0			
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$SSC_PA_CONT_TYP [n,m]	Type of the contour element	reference:			
description:						
\$SSC_PA_CONT_TYP"[n,m] Type (G1, G2, G3) of contour element =0: Contour not defined =1: Straight =2: Circle element (clockwise) =3: Circle element (counterclockwise) The end point is determined by \$SSC_PA_CONT_ORD or \$SSC_PA_CONT_ABS. With contour types G2 and G3, \$SSC_PA_CENT_ORD or \$SSC_PA_CENT_ABS determines the center point of the circle element. Note: This variable is not restored during REORG. Note: This variable is saved during data backup. Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI CHAx: x=channel no.						
Index 1:	n: Number of protection zone The maximum dimension is defined in MD \$MC_MM_NUM_PROTECT_AREA_CHAN.					
Index 2:	m: Number of the contour element (0 - MAXNUM_CONTOURNO_PROTECTAREA)					
unit:						
min.:	0	max.: 3	std: 0			
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Channel-specific protect

DOUBLE	\$\$SC_PA_CONT_ORD [n,m]		End point of contour element (ordinate)		reference:	
description:						
\$\$SC_PA_CONT_ORD[n,m]						
End point of contour element (ordinate)						
See also description of \$\$SC_PA_CONT_TYP						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
CHAx: x=channel no.						
Index 1:	n: Number of protection zone		The maximum dimension is defined in			
	MD \$MC_MM_NUM_PROTECT_AREA_CHAN.					
Index 2:	m: Number of the contour element		(0 -			
	MAXNUM_CONTOURNO_PROTECTAREA)					
unit:	mm					
min.:	-1,8E308		max.:	1,8E308		std:
	0.0					
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	
DOUBLE	\$\$SC_PA_CONT_ABS [n,m]		End point of contour element (abscissa)		reference:	
description:						
\$\$SC_PA_CONT_ABS[n,m]						
End point of contour element (abscissa)						
See also description of \$\$SC_PA_CONT_TYP						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
CHAx: x=channel no.						
Index 1:	n: Number of protection zone		The maximum dimension is defined in			
	MD \$MC_MM_NUM_PROTECT_AREA_CHAN.					
Index 2:	m: Number of the contour element		(0 -			
	MAXNUM_CONTOURNO_PROTECTAREA)					
unit:	mm					
min.:	-1,8E308		max.:	1,8E308		std:
	0.0					
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	

DOUBLE	\$\$SC_PA_CENT_ORD [n,m]	Center point of contour element (ordinate)	reference:			
description:						
\$\$SC_PA_CENT_ORD[n,m]						
Center point of contour element (ordinate)						
Relevant only if \$\$SC_PA_CONT_TYP[n,m] = 2 or = 3.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
CHAx: x=channel no.						
Index 1:	n: Number of protection zone		The maximum dimension is defined in MD \$MC_MM_NUM_PROTECT_AREA_CHAN.			
Index 2:	m: Number of the contour element		(0 - MAXNUM_CONTOURNO_PROTECTAREA)			
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	
DOUBLE	\$\$SC_PA_CENT_ABS [n,m]	Center point of contour element (abscissa)	reference:			
description:						
\$\$SC_PA_CENT_ABS[n,m]						
Center point of contour element (abscissa)						
Relevant only if \$\$SC_PA_CONT_TYP[n,m] = 2 or = 3.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_CHAx_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
CHAx: x=channel no.						
Index 1:	n: Number of protection zone		The maximum dimension is defined in MD \$MC_MM_NUM_PROTECT_AREA_CHAN.			
Index 2:	m: Number of the contour element		(0 - MAXNUM_CONTOURNO_PROTECTAREA)			
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	

Tool parameters

1.7 Tool parameters

INT	\$TC_DP1 [32000,32000]						reference:	
description:								
\$TC_DP1[t,d]								
Tool type								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP1[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648	max.:		2147483647	std:		0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP2 [32000,32000]						reference:	
description:								
\$TC_DP2[t,d]								
Tool point direction								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP2[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308	max.:		1,8E308	std:		0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_DP3 [32000,32000]						reference:	
description:								
\$TC_DP3[t,d]								
Geometry - length 1								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP3[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP4 [32000,32000]						reference:	
description:								
\$TC_DP4[t,d]								
Geometry - length 2								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP4[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP5 [32000,32000]						reference:	
description:								
\$TC_DP5[t,d]								
Geometry - length 3								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP5[d]								
Index 1:		t: T number 1 - 32000						

Tool parameters

Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DP6 [32000,32000]				reference:	
description:						
\$TC_DP6[t,d]						
Geometry - radius						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DP6[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DP7 [32000,32000]				reference:	
description:						
\$TC_DP7[t,d]						
Slotting saw: Corner radius						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DP7[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

DOUBLE	\$TC_DP8 [32000,32000]						reference:
description:							
\$TC_DP8[t,d]							
Slotting saw: Length							
When the 'flat D number management' function is active, the syntax is as follows:							
\$TC_DP8[d]							
Index 1:		t: T number 1 - 32000					
Index 2:		d: Cutting edge number / D number 1 - 32000					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	No restrictions	
DOUBLE	\$TC_DP9 [32000,32000]						reference:
description:							
\$TC_DP9[t,d]							
Reserved							
When the 'flat D number management' function is active, the syntax is as follows:							
\$TC_DP9[d]							
Index 1:		t: T number 1 - 32000					
Index 2:		d: Cutting edge number / D number 1 - 32000					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	No restrictions	
DOUBLE	\$TC_DP10 [32000,32000]						reference:
description:							
\$TC_DP10[t,d]							
Angle between tool face and toroidal surface							
When the 'flat D number management' function is active, the syntax is as follows:							
\$TC_DP10[d]							
Index 1:		t: T number 1 - 32000					

Tool parameters

Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DP11 [32000,32000]				reference:	
description:						
\$TC_DP11[t,d]						
Angle between tool longitudinal axis and upper end of toroidal surface						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DP11[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DP12 [32000,32000]				reference:	
description:						
\$TC_DP12[t,d]						
Wear - length 1 - \$TC_DP3						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DP12[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

DOUBLE	\$TC_DP13 [32000,32000]						reference:	
description:								
\$TC_DP13[t,d]								
Wear - length 2 - \$TC_DP4								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP13[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP14 [32000,32000]						reference:	
description:								
\$TC_DP14[t,d]								
Wear - length 3 - \$TC_DP5								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP14[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP15 [32000,32000]						reference:	
description:								
\$TC_DP15[t,d]								
Wear - radius - \$TC_DP6								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP15[d]								
Index 1:		t: T number 1 - 32000						

Tool parameters

Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DP16 [32000,32000]				reference:	
description:						
\$TC_DP16[t,d]						
Slotting saw: Wear - corner radius - \$TC_DP7						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DP16[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DP17 [32000,32000]				reference:	
description:						
\$TC_DP17[t,d]						
Slotting saw: Wear length - \$TC_DP8						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DP17[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

DOUBLE	\$TC_DP18 [32000,32000]						reference:	
description:								
\$TC_DP18[t,d]								
Wear - reserved - \$TC_DP9								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP18[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP19 [32000,32000]						reference:	
description:								
\$TC_DP19[t,d]								
Wear - angle between tool face and toroidal surface - \$TC_DP10								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP19[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP20 [32000,32000]						reference:	
description:								
\$TC_DP20[t,d]								
Wear - angle between tool longitudinal axis and upper end of toroidal surface - \$TC_DP11								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP20[d]								
Index 1:		t: T number 1 - 32000						

Tool parameters

Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:						
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DP21 [32000,32000]				reference:	
description:						
\$TC_DP21[t,d]						
Basis - length 1						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DP21[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DP22 [32000,32000]				reference:	
description:						
\$TC_DP22[t,d]						
Basis - length 2						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DP22[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

DOUBLE	\$TC_DP23 [32000,32000]						reference:	
description:								
\$TC_DP23[t,d]								
Basis - length 3								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP23[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP24 [32000,32000]						reference:	
description:								
\$TC_DP24[t,d]								
Clearance angle								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP24[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DP25 [32000,32000]						reference:	
description:								
\$TC_DP25[t,d]								
Reserved								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DP25[d]								
Index 1:		t: T number 1 - 32000						

Tool parameters

Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_DPCE [32000,32000]				reference:	
description:						
\$TC_DPCE[t,d] = 'cutting edge number' of compensation data block t,d						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DPCE[d]						
CE stands for <C>utting<E>dge						
Value range of legal 'cutting edge numbers':						
1 up to value of machine data \$MN_MM_MAX_CUTTING_EDGE_PERTOOL.						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_DPH [32000,32000]				reference:	
description:						
\$TC_DPH[t,d] = 'H cutting edge number' of compensation data block t,d for Fanuc0 M						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DPH[d]						
An alarm is issued if this variable is used with the function "ISO2.1 mode" or "ISO3.1 mode" inactive.						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

INT	\$TC_DPV [32000,32000]						reference:	
description:								
\$TC_DPV[t,d] = tool cutting edge orientation								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPV[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648	max.:		2147483647	std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPV3 [32000,32000]						reference:	
description:								
\$TC_DPV3[t,d] = L1 component of tool cutting edge orientation								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPV3[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPV4 [32000,32000]						reference:	
description:								
\$TC_DPV4[t,d] = L2 component of tool cutting edge orientation								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPV4[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Tool parameters

DOUBLE	\$TC_DPV5 [32000,32000]						reference:	
description:								
\$TC_DPV5[t,d] = L3 component of tool cutting edge orientation								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPV5[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPVN3 [32000,32000]						reference:	
description:								
\$TC_DPVN3[t,d] = L1 component of the orientation normal of the tool cutting edge.								
If the function 'flat D-number management' is active, the syntax is as follows:								
\$TC_DPVN3[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: tool cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPVN4 [32000,32000]						reference:	
description:								
\$TC_DPVN4[t,d] = L2 component of the orientation normal of the tool cutting edge.								
If the function 'flat D-number management' is active, the syntax is as follows:								
\$TC_DPVN4[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: tool cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_DPVN5 [32000,32000]		L3 component of the orientation normal			reference:	
description:							
\$TC_DPVN5[t,d] = L3 component of the orientation normal of the tool cutting edge.							
If the function 'flat D-number management' is active, the syntax is as follows:							
\$TC_DPVN5[d]							
Index 1:		t: T number 1 - 32000					
Index 2:		d: tool cutting edge number / D number 1 - 32000					
unit:		-					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

INT	\$TC_DPNT [32000,32000]		Number of teeth on this cutting edge			reference:	
description:							
\$TC_DPNT[t,d]							
Number of teeth in the cutting edge							
with active function 'flat D number management' the syntax is as follows:							
\$TC_DPNT[d]							
Index 1:		t: T number 1 - 32000					
Index 2:		d: Cutting edge number / D number 1 - 32000					
unit:		-					
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Cutting edge data for OEM users

1.8 Cutting edge data for OEM users

DOUBLE	\$TC_DPC1 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPC1[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPC1[d]								
Index 1:	t: T number 1 - 32000							
Index 2:	d: Cutting edge number / D number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_DPC2 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPC2[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPC2[d]								
Index 1:	t: T number 1 - 32000							
Index 2:	d: Cutting edge number / D number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Cutting edge data for OEM users

DOUBLE	\$TC_DPC3 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPC3[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPC3[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPC4 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPC4[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPC4[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPC5 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPC5[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPC5[d]								
Index 1:		t: T number 1 - 32000						

Cutting edge data for OEM users

Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DPC6 [32000,32000]				reference:	
description:						
The type can be specified by machine data. DOUBLE is the default setting						
\$TC_DPC6[t,d]						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DPC6[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DPC7 [32000,32000]				reference:	
description:						
The type can be specified by machine data. DOUBLE is the default setting						
\$TC_DPC7[t,d]						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DPC7[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

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DOUBLE	\$TC_DPC8 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPC8[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPC8[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPC9 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPC9[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPC9[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPC10 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPC10[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPC10[d]								
Index 1:		t: T number 1 - 32000						

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Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DPCS1 [32000,32000]					reference:
description:						
The type can be specified by machine data. DOUBLE is the default setting						
\$TC_DPCS1[t,d]						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DPCS1[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	1	-
write:	X	-	/	X	1	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DPCS2 [32000,32000]					reference:
description:						
The type can be specified by machine data. DOUBLE is the default setting						
\$TC_DPCS2[t,d]						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DPCS2[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	1	-
write:	X	-	/	X	1	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

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DOUBLE	\$TC_DPCS3 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPCS3[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPCS3[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPCS4 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPCS4[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPCS4[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPCS5 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPCS5[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPCS5[d]								
Index 1:		t: T number 1 - 32000						

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Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	1	-
write:	X	-	7	X	1	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DPCS6 [32000,32000]					reference:
description:						
The type can be specified by machine data. DOUBLE is the default setting						
\$TC_DPCS6[t,d]						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DPCS6[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	1	-
write:	X	-	7	X	1	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_DPCS7 [32000,32000]					reference:
description:						
The type can be specified by machine data. DOUBLE is the default setting						
\$TC_DPCS7[t,d]						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_DPCS7[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	1	-
write:	X	-	7	X	1	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Cutting edge data for OEM users

DOUBLE	\$TC_DPCS8 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPCS8[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPCS8[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPCS9 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPCS9[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPCS9[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_DPCS10 [32000,32000]						reference:	
description:								
The type can be specified by machine data. DOUBLE is the default setting								
\$TC_DPCS10[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_DPCS10[d]								
Index 1:		t: T number 1 - 32000						

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Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	1	-
write:	X	-	/	X	1	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_SCP13 [32000,32000]					reference:
description:						
Offset for \$TC_DP3: \$TC_SCP13[t,d] comparable to \$TC_DP12[t,d]						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_SCP13[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$TC_SCP14 [32000,32000]					reference:
description:						
Offset for \$TC_DP4: \$TC_SCP14[t,d] comparable to \$TC_DP13[t,d]						
When the 'flat D number management' function is active, the syntax is as follows:						
\$TC_SCP14[d]						
Index 1:	t: T number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

DOUBLE	\$TC_SCP15 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_SCP15[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP15[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP16 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_SCP16[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP16[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP17 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_SCP17[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP17[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

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DOUBLE	\$TC_SCP18 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_SCP18[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP18[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		No restrictions

DOUBLE	\$TC_SCP19 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_SCP19[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP19[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		No restrictions

DOUBLE	\$TC_SCP20 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_SCP20[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP20[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		No restrictions

DOUBLE	\$TC_SCP21 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_SCP21[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP21[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP23 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_SCP23[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP23[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP24 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_SCP24[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP24[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

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DOUBLE	\$TC_SCP25 [32000,32000]						reference:		
description:									
Offset for \$TC_DP5: \$TC_SCP25[t,d] comparable to \$TC_DP14[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP25[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

DOUBLE	\$TC_SCP26 [32000,32000]						reference:		
description:									
Offset for \$TC_DP6: \$TC_SCP26[t,d] comparable to \$TC_DP15[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP26[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

DOUBLE	\$TC_SCP27 [32000,32000]						reference:		
description:									
Offset for \$TC_DP7: \$TC_SCP27[t,d] comparable to \$TC_DP16[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP27[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

DOUBLE	\$TC_SCP28 [32000,32000]						reference:	
description:								
\$TC_SCP28[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP28[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_SCP29 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_SCP29[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP29[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_SCP30 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_SCP30[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP30[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

Cutting edge data for OEM users

DOUBLE	\$TC_SCP31 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_SCP31[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP31[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP33 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_SCP33[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP33[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP34 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_SCP34[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP34[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP35 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_SCP35[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP35[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP36 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_SCP36[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP36[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP37 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_SCP37[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP37[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Cutting edge data for OEM users

DOUBLE	\$TC_SCP38 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_SCP38[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP38[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		No restrictions

DOUBLE	\$TC_SCP39 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_SCP39[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP39[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		No restrictions

DOUBLE	\$TC_SCP40 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_SCP40[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP40[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		No restrictions

DOUBLE	\$TC_SCP41 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_SCP41[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP41[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP43 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_SCP43[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP43[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP44 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_SCP44[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP44[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Cutting edge data for OEM users

DOUBLE	\$TC_SCP45 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_SCP45[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP45[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP46 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_SCP46[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP46[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP47 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_SCP47[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP47[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP48 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_SCP48[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP48[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP49 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_SCP49[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP49[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP50 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_SCP50[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP50[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

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DOUBLE	\$TC_SCP51 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_SCP51[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP51[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP53 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_SCP53[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP53[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP54 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_SCP54[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP54[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP55 [32000,32000]						reference:		
description:									
Offset for \$TC_DP5: \$TC_SCP55[t,d] comparable to \$TC_DP14[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP55[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

DOUBLE	\$TC_SCP56 [32000,32000]						reference:		
description:									
Offset for \$TC_DP6: \$TC_SCP56[t,d] comparable to \$TC_DP15[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP56[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

DOUBLE	\$TC_SCP57 [32000,32000]						reference:		
description:									
Offset for \$TC_DP7: \$TC_SCP57[t,d] comparable to \$TC_DP16[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP57[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

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DOUBLE	\$TC_SCP58 [32000,32000]						reference:		
description:									
Offset for \$TC_DP8: \$TC_SCP58[t,d] comparable to \$TC_DP17[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP58[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		
DOUBLE	\$TC_SCP59 [32000,32000]						reference:		
description:									
Offset for \$TC_DP9: \$TC_SCP59[t,d] comparable to \$TC_DP18[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP59[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		
DOUBLE	\$TC_SCP60 [32000,32000]						reference:		
description:									
Offset for \$TC_DP10: \$TC_SCP60[t,d] comparable to \$TC_DP19[t,d]									
When the 'flat D number management' function is active, the syntax is as follows:									
\$TC_SCP60[d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		-							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

DOUBLE	\$TC_SCP61 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_SCP61[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP61[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP63 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_SCP63[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP63[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_SCP64 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_SCP64[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP64[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Cutting edge data for OEM users

DOUBLE	\$TC_SCP65 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_SCP65[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP65[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP66 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_SCP66[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP66[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP67 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_SCP67[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP67[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_SCP68 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_SCP68[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP68[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_SCP69 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_SCP69[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP69[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_SCP70 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_SCP70[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP70[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

Cutting edge data for OEM users

DOUBLE	\$TC_SCP71 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_SCP71[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_SCP71[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP13 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_ECP13[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP13[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP14 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_ECP14[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP14[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP15 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_ECP15[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP15[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP16 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_ECP16[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP16[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP17 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_ECP17[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP17[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Cutting edge data for OEM users

DOUBLE	\$TC_ECP18 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_ECP18[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP18[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP19 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_ECP19[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP19[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP20 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_ECP20[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP20[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP21 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_ECP21[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP21[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP23 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_ECP23[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP23[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP24 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_ECP24[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP24[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

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DOUBLE	\$TC_ECP25 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_ECP25[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP25[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP26 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_ECP26[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP26[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP27 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_ECP27[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP27[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP28 [32000,32000]						reference:	
description:								
\$TC_ECP28[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP28[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP29 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_ECP29[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP29[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP30 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_ECP30[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP30[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

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DOUBLE	\$TC_ECP31 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_ECP31[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP31[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP33 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_ECP33[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP33[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP34 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_ECP34[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP34[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP35 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_ECP35[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP35[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP36 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_ECP36[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP36[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP37 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_ECP37[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP37[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Cutting edge data for OEM users

DOUBLE	\$TC_ECP38 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_ECP38[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP38[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP39 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_ECP39[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP39[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP40 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_ECP40[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP40[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP41 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_ECP41[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP41[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP43 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_ECP43[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP43[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP44 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_ECP44[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP44[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Cutting edge data for OEM users

DOUBLE	\$TC_ECP45 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_ECP45[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP45[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP46 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_ECP46[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP46[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP47 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_ECP47[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP47[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP48 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_ECP48[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP48[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP49 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_ECP49[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP49[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP50 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_ECP50[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP50[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

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DOUBLE	\$TC_ECP51 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_ECP51[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP51[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP53 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_ECP53[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP53[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP54 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_ECP54[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP54[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP55 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_ECP55[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP55[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP56 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_ECP56[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP56[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP57 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_ECP57[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP57[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

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DOUBLE	\$TC_ECP58 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_ECP58[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP58[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP59 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_ECP59[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP59[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP60 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_ECP60[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP60[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

DOUBLE	\$TC_ECP61 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_ECP61[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP61[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP63 [32000,32000]						reference:	
description:								
Offset for \$TC_DP3: \$TC_ECP63[t,d] comparable to \$TC_DP12[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP63[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_ECP64 [32000,32000]						reference:	
description:								
Offset for \$TC_DP4: \$TC_ECP64[t,d] comparable to \$TC_DP13[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP64[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

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DOUBLE	\$TC_ECP65 [32000,32000]						reference:	
description:								
Offset for \$TC_DP5: \$TC_ECP65[t,d] comparable to \$TC_DP14[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP65[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP66 [32000,32000]						reference:	
description:								
Offset for \$TC_DP6: \$TC_ECP66[t,d] comparable to \$TC_DP15[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP66[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP67 [32000,32000]						reference:	
description:								
Offset for \$TC_DP7: \$TC_ECP67[t,d] comparable to \$TC_DP16[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP67[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP68 [32000,32000]						reference:	
description:								
Offset for \$TC_DP8: \$TC_ECP68[t,d] comparable to \$TC_DP17[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP68[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP69 [32000,32000]						reference:	
description:								
Offset for \$TC_DP9: \$TC_ECP69[t,d] comparable to \$TC_DP18[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP69[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_ECP70 [32000,32000]						reference:	
description:								
Offset for \$TC_DP10: \$TC_ECP70[t,d] comparable to \$TC_DP19[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP70[d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Tool management monitoring data

DOUBLE	\$TC_ECP71 [32000,32000]						reference:	
description:								
Offset for \$TC_DP11: \$TC_ECP71[t,d] comparable to \$TC_DP20[t,d]								
When the 'flat D number management' function is active, the syntax is as follows:								
\$TC_ECP71[d]								
Index 1:	t: T number 1 - 32000							
Index 2:	d: Cutting edge number / D number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

1.9 Tool management monitoring data

DOUBLE	\$TC_MOP1 [32000,32000]						reference:	
description:								
\$TC_MOP1[t,d]								
Prewarning limit for downtime								
Index 1:	t: T number 1 - 32000							
Index 2:	d: Cutting edge number / D number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

DOUBLE	\$TC_MOP2 [32000,32000]						reference:	
description:								
\$TC_MOP2[t,d]								
Residual tool life								
Index 1:	t: T number 1 - 32000							

Tool management monitoring data

Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MOP3 [32000,32000]					reference:
description:						
\$TC_MOP3[t,d]						
Prewarning limit for workpiece count						
Index 1:	t: 1 number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MOP4 [32000,32000]					reference:
description:						
\$TC_MOP4[t,d]						
Residual workpieces						
Index 1:	t: 1 number 1 - 32000					
Index 2:	d: Cutting edge number / D number 1 - 32000					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Tool management monitoring data

DOUBLE	\$TC_MOP5 [32000,32000]						reference:	
description:								
\$TC_MOP5[t,d]								
Prewarning limit for wear								
Index 1:	t: T number 1 - 32000							
Index 2:	d: Cutting edge number / D number 1 - 32000							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_MOP6 [32000,32000]						reference:	
description:								
\$TC_MOP6[t,d]								
Residual wear								
Index 1:	t: T number 1 - 32000							
Index 2:	d: Cutting edge number / D number 1 - 32000							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_MOP11 [32000,32000]						reference:	
description:								
\$TC_MOP11[t,d]								
Specified tool life								
Index 1:	t: T number 1 - 32000							
Index 2:	d: Cutting edge number / D number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

INT	\$TC_MOP13 [32000,32000]						reference:		
description:									
\$TC_MOP13[t,d] Specified workpiece count									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
DOUBLE	\$TC_MOP15 [32000,32000]						reference:		
description:									
\$TC_MOP15[t,d] Specified wear									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:		mm							
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

1.10 OEM user monitoring data

INT	\$TC_MOPC1 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MOPC1[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

OEM user monitoring data

INT	\$TC_MOPC2 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MOPC2[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		
						No restrictions		
INT	\$TC_MOPC3 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MOPC3[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		
						No restrictions		
INT	\$TC_MOPC4 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MOPC4[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		
						No restrictions		

INT	\$TC_MOPC5 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MOPC5[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MOPC6 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MOPC6[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MOPC7 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MOPC7[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

OEM user monitoring data

INT	\$TC_MOPC8 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MOPC8[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
INT	\$TC_MOPC9 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MOPC9[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
INT	\$TC_MOPC10 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MOPC10[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

INT	\$TC_MOPCS1 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting \$TC_MOPCS1[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MOPCS2 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting \$TC_MOPCS2[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MOPCS3 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting \$TC_MOPCS3[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

OEM user monitoring data

INT	\$TC_MOPCS4 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting \$TC_MOPCS4[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
INT	\$TC_MOPCS5 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting \$TC_MOPCS5[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
INT	\$TC_MOPCS6 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting \$TC_MOPCS6[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:		-						
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

INT	\$TC_MOPCS7 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting \$TC_MOPCS7[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MOPCS8 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting \$TC_MOPCS8[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MOPCS9 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting \$TC_MOPCS9[t,d]									
Index 1:		t: T number 1 - 32000							
Index 2:		d: Cutting edge number / D number 1 - 32000							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

Tool-related data

INT	\$TC_MOPCS10 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MOPCS10[t,d]								
Index 1:		t: T number 1 - 32000						
Index 2:		d: Cutting edge number / D number 1 - 32000						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

1.11 Tool-related data

STRING	\$TC_TP2 [32000]						reference:	
description:								
\$TC_TP2[t]								
Tool identifier								
Index 1:		t: T number 1 - 32000						
Index 3:		max. string length						
unit:								
min.:				max.:				
				std:				
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

INT	\$TC_TP1 [32000]						reference:	
description:								
\$TC_TP1[t]								
Duplo number								
Index 1:		t: T number 1 - 32000						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

INT	\$TC_TP3 [32000]						reference:	
description:								
\$TC_TP3[t]								
Size on left								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	1			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_TP4 [32000]						reference:	
description:								
\$TC_TP4[t]								
Size on right								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	1			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_TP5 [32000]						reference:	
description:								
\$TC_TP5[t]								
Size at top								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	1			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Tool-related data

INT	\$TC_TP6 [32000]						reference:	
description:								
\$TC_TP6[t]								
Size at bottom								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	1			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_TP7 [32000]						reference:	
description:								
\$TC_TP7[t]								
Magazine location type								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	9999			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_TP8 [32000]						reference:	
description:								
\$TC_TP8[t]								
Status								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

INT	\$TC_TP9 [32000]						reference:	
description:								
\$TC_TP9[t]								
Type of tool monitoring								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_TP11 [32000]						reference:	
description:								
\$TC_TP11[t]								
Replacement-change strategy								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_TP10 [32000]						reference:	
description:								
\$TC_TP10[t]								
Tool info								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Tool-related data

STRING	\$TC_TP_PROTA [32000]		Name for the protection zone			reference:	
description:							
\$TC_TP_PROTA[t]							
Name of the 3-dimensional protection area for the tool, or the name of the file containing the description of the protection area for the tool.							
Index 1:	t: 1 number 1 - 32000						
Index 3:	max. string length						
unit:							
min.:			max.:			std:	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	X	
write:	X	-	7	X	7	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
DOUBLE	\$TC_TP_MAX_VELO [32000]		Maximum speed of the tool			reference:	
description:							
\$TC_TP_MAX_VELO[t]							
Maximum speed of the tool when the value is >0. There is no monitoring if a speed limit has not been defined (=0).							
Index 1:	t: 1 number 1 - 32000						
unit:	rpm						
min.:	0		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	3	X	3	-	
write:	X	-	3	X	3	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
DOUBLE	\$TC_TP_MAX_ACC [32000]		Maximum acceleration of the tool			reference:	
description:							
\$TC_TP_MAX_ACC[t]							
Maximum acceleration of the tool when the value is >0. There is no monitoring if an acceleration limit has not been defined (=0).							
Index 1:	t: 1 number 1 - 32000						
unit:	rps ²						
min.:	0		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	3	X	3	-	
write:	X	-	3	X	3	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		

DOUBLE	\$TC_TPC1 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC1[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPC2 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC2[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPC3 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC3[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Tool-related data

DOUBLE	\$TC_TPC4 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC4[t]								
Index 1:		t: T number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPC5 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC5[t]								
Index 1:		t: T number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPC6 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC6[t]								
Index 1:		t: T number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_TPC7 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC7[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPC8 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC8[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPC9 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC9[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Tool-related data

DOUBLE	\$TC_TPC10 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPC10[t]								
Index 1:		t: T number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPCS1 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS1[t]								
Index 1:		t: T number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPCS2 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS2[t]								
Index 1:		t: T number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_TPCS3 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS3[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPCS4 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS4[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_TPCS5 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS5[t]								
Index 1:		t: 1 number 1 - 32000						
unit:								
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Tool-related data

DOUBLE	\$TC_TPCS6 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS6[t]								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_TPCS7 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS7[t]								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_TPCS8 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS8[t]								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Tool-related grinding data

DOUBLE	\$TC_TPCS9 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS9[t]								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

DOUBLE	\$TC_TPCS10 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_TPCS10[t]								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

1.12 Tool-related grinding data

INT	\$TC_TPG1 [32000]						reference:	
description:								
\$TC_TPG1[t]								
Spindle number								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Tool-related grinding data

INT	\$TC_TPG2 [32000]						reference:	
description:								
\$TC_TPG2[t]								
Chaining rule								
Index 1:	t: 1 number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_TPG3 [32000]						reference:	
description:								
\$TC_TPG3[t]								
Minimum grinding wheel radius								
Index 1:	t: 1 number 1 - 32000							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_TPG4 [32000]						reference:	
description:								
\$TC_TPG4[t]								
Minimum grinding wheel width								
Index 1:	t: 1 number 1 - 32000							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Tool-related grinding data

DOUBLE	\$TC_TPG5 [32000]						reference:	
description:								
\$TC_TPG5[t]								
Current grinding wheel width								
Index 1:	t: T number 1 - 32000							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_TPG6 [32000]						reference:	
description:								
\$TC_TPG6[t]								
Maximum speed								
Index 1:	t: T number 1 - 32000							
unit:	-							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_TPG7 [32000]						reference:	
description:								
\$TC_TPG7[t]								
Max. peripheral speed								
Index 1:	t: T number 1 - 32000							
unit:	m/sec							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Magazine location data

DOUBLE	\$TC_TPG8 [32000]						reference:	
description:								
\$TC_TPG8[t]								
Angle of inclined grinding wheel								
Index 1:	t: T number 1 - 32000							
unit:								
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_TPG9 [32000]						reference:	
description:								
\$TC_TPG9[t]								
Parameter no. f. radius calculation								
Index 1:	t: T number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

1.13 Magazine location data

BOOL	\$TC_MPP3 [32000,32000]						reference:	
description:								
\$TC_MPP3[n,m]								
Consider adjacent location On/Off								
Index 1:	n: Physical magazine number							
Index 2:	m: Physical location number							
unit:								
min.:	FALSE	max.:	TRUE	std:	FALSE			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Magazine location data

INT	\$TC_MPP1 [32000,32000]						reference:	
description:								
\$TC_MPP1[n,m]								
Location type								
Index 1:	n: Physical magazine number							
Index 2:	m: Physical location number							
unit:								
min.:	-2147483648		max.:	2147483647		std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
INT	\$TC_MPP2 [32000,32000]						reference:	
description:								
\$TC_MPP2[n,m]								
Location type								
Index 1:	n: Physical magazine number							
Index 2:	m: Physical location number							
unit:								
min.:	-2147483648		max.:	2147483647		std:	9999	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
INT	\$TC_MPP6 [32000,32000]						reference:	
description:								
\$TC_MPP6[n,m]								
T no. of tool in this location								
Index 1:	n: Physical magazine number							
Index 2:	m: Physical location number							
unit:								
min.:	-2147483648		max.:	2147483647		std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		

Magazine location data

INT	\$TC_MPP4 [32000,32000]						reference:	
description:								
\$TC_MPP4[n,m]								
Location state								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:								
min.:		2147483648	max.:		2147483647	std:	2	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	
INT	\$TC_MPP5 [32000,32000]						reference:	
description:								
\$TC_MPP5[n,m]								
Buffer magazine: Location type index								
Real magazines:Wear group number								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:								
min.:		2147483648	max.:		2147483647	std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	
INT	\$TC_MPP7 [32000,32000]						reference:	
description:								
\$TC_MPP7[n,m]								
Adapter number of tool adapter in this location								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:								
min.:		2147483648	max.:		2147483647	std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	

INT	\$TC_MPP66 [32000,32000]						reference:	
description:								
\$TC_MPP66[n,m]								
T no. of tool stored in buffer								
for which the location defined by n,m is reserved.								
A write operation is meaningful only when a backup file is loaded to the NCK.								
The name assignment is based on \$TC_MPP6 - T no. of tool stored in the magazine location.								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:		-						
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
INT	\$TC_MPP_SP [32000,32000]						reference:	
description:								
\$TC_MPP_SP[n,m]								
Only of significance if								
- Working with tool holders (\$MC_TOOLHOLDER_MANAGEMENT > 0)								
- The magazine location "m" belongs to a buffer magazine "n"								
- The magazine location describes a tool holder (\$TC_MPP1[n,m]=2)								
In this case, the system variable contains the spindle number whose speed is to be monitored for the maximum tool speed.								
When not working with tool holders (\$MC_TOOLHOLDER_MANAGEMENT = 0), the variable contains the value of the spindle index from \$TC_MPP5.								
This variable contains the value =0 if the magazine location "n,m" is not a buffer magazine location for a spindle or tool holder.								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:		-						
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

1.14 Magazine location data for OEM users

INT	\$TC_MPPC1 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MPPC1[n,m]								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:		-						
min.:		-2147483648	max.:		2147483647	std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
INT	\$TC_MPPC2 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MPPC2[n,m]								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:		-						
min.:		-2147483648	max.:		2147483647	std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
INT	\$TC_MPPC3 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MPPC3[n,m]								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:		-						
min.:		-2147483648	max.:		2147483647	std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

Magazine location data for OEM users

INT	\$TC_MPPC4 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MPPC4[n,m]								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
<hr/>								
INT	\$TC_MPPC5 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MPPC5[n,m]								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
<hr/>								
INT	\$TC_MPPC6 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MPPC6[n,m]								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

Magazine location data for OEM users

INT	\$TC_MPPC7 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPC7[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MPPC8 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPC8[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MPPC9 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPC9[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

Magazine location data for OEM users

INT	\$TC_MPPC10 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPC10[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MPPCS1 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPCS1[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MPPCS2 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPCS2[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

Magazine location data for OEM users

INT	\$TC_MPPCS3 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPCS3[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MPPCS4 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPCS4[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MPPCS5 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPCS5[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

Magazine location data for OEM users

INT	\$TC_MPPCS6 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPCS6[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MPPCS7 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPCS7[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		
INT	\$TC_MPPCS8 [32000,32000]						reference:		
description:									
The type can be specified by machine data. INT is the default setting									
\$TC_MPPCS8[n,m]									
Index 1:		n: Physical magazine number							
Index 2:		m: Physical location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		No restrictions		

Magazine location data for OEM users

INT	\$TC_MPPCS9 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MPPCS9[n,m]								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:		-						
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
INT	\$TC_MPPCS10 [32000,32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MPPCS10[n,m]								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:		-						
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		
INT	\$TC_MDP1 [32000,32000]						reference:	
description:								
\$TC_MDP1[n,m]								
Distance to tool change point								
betw. magazine n and location m								
of 1st internal magazine								
internal mag. 1 distance parameter								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:		-						
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified		link		No restrictions		

Magazine location data for OEM users

INT	\$TC_MDP2 [32000,32000]						reference:	
description:								
\$TC_MDP2[n,m] Distance to tool change point betw. magazine n and location m of 2nd internal magazine internal mag. 2 distance parameter								
Index 1:		n: Physical magazine number						
Index 2:		m: Physical location number						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	
INT	\$TC_MLSR [32000,32000]						reference:	
description:								
\$TC_MLSR[n,m]=0 Assignment of buffer location n to buffer location m m must identify a location of type 'Spindle'. n must identify a location which is not a 'Spindle' type location. In this way it is possible, for example, to define which grippers, spindles, etc. are assigned. The default parameter setting is 0. The write operation defines a relationship, the read operation checks whether a particular relationship exists. If it does not exist, the read operation generates an alarm. define links of grippers,... to spindles.								
Index 1:		n: Physical magazine location number of location type other than SPINDLE						
Index 2:		m: Physical magazine location number of location type SPINDLE						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				channel-specific
block search		Not classified			link		No restrictions	

Magazine description data for tool management

INT	\$TC_MPTH [32,32]					reference:	
description:							
\$TC_MPTH[n,m]							
Magazine location type hierarchy							
mag.location (place)types hierarchy parameter							
Index 1:		n: Hierarchy 0 - SLMAXHIERARCHYNUMBER-1					
Index 2:		m: Location type 0 - SLMAXHIERARCHYENTRIES - 1					
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

1.15 Magazine description data for tool management

STRING	\$TC_MAP2 [32000]					reference:	
description:							
\$TC_MAP2[n]							
Identifier of magazine							
Index 1:		n: Magazine number 1 - ..					
Index 3:		max. string length					
unit:							
-							
min.:				std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

INT	\$TC_MAP1 [32000]					reference:	
description:							
\$TC_MAP1[n]							
Type of magazine							

Magazine description data for tool management

Index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MAP3 [32000]				reference:	
description:						
\$TC_MAP3[n]						
Status of magazine						
Index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	2	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MAP4 [32000]				reference:	
description:						
\$TC_MAP4[n]						
Chaining to next magazine						
Index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	-1	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MAP5 [32000]				reference:	
description:						
\$TC_MAP5[n]						
Chaining to previous magazine						

Magazine description data for tool management

index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	-1	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MAP6 [32000]				reference:	
description:						
\$TC_MAP6[n]						
Number of lines						
index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	1	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MAP7 [32000]				reference:	
description:						
\$TC_MAP7[n]						
Number of columns						
index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MAP8 [32000]				reference:	
description:						
\$TC_MAP8[n]						
Current magazine position in relation to tool change position						

Magazine description data for tool management

Index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MAP9 [32000]				reference:	
description:						
\$TC_MAP9[n]						
Current wear group number						
Index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$TC_MAP10 [32000]				reference:	
description:						
\$TC_MAP10[n]						
Current search strategies of magazine.						
- Tool search strategy						
- Empty location search strategy						
The NCK enters the value of \$TC_MAMP2 per default.						
Index 1:	n: Magazine number 1 - ..					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

1.16 Magazine description data for OEM user tool management

INT	\$TC_MAPC1 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC1[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPC2 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC2[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPC3 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC3[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Magazine description data for OEM user tool management

INT	\$TC_MAPC4 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC4[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPC5 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC5[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPC6 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC6[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Magazine description data for OEM user tool management

INT	\$TC_MAPC7 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC7[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPC8 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC8[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPC9 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC9[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Magazine description data for OEM user tool management

INT	\$TC_MAPC10 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPC10[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPCS1 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPCS1[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPCS2 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPCS2[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Magazine description data for OEM user tool management

INT	\$TC_MAPCS3 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPCS3[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPCS4 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPCS4[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPCS5 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPCS5[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Magazine description data for OEM user tool management

INT	\$TC_MAPCS6 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPCS6[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPCS7 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPCS7[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPCS8 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting								
\$TC_MAPCS8[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Magazine block parameters

INT	\$TC_MAPCS9 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting \$TC_MAPCS9[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAPCS10 [32000]						reference:	
description:								
The type can be specified by machine data. INT is the default setting \$TC_MAPCS10[n]								
Index 1:	n: Magazine number 1 - ..							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

1.17 Magazine block parameters

STRING	\$TC_MAMP1 [-1]						reference:	
description:								
\$TC_MAMP1 Identifier of magazine block								
Index 1:	Scalar variable							
Index 3:	max. string length							
unit:								
min.:				max.:			std:	"n"
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

INT	\$TC_MAMP2 [-1]						reference:	
description:								
\$TC_MAMP2								
Type of tool search								
Index 1:	Scalar variable							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MAMP3 [-1]						reference:	
description:								
\$TC_MAMP3								
Handling of tools in wear groups								
Index 1:	Scalar variable							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

1.18 Adapter data

INT	\$TC_ADPTT [32000]						reference:	
description:								
\$TC_ADPTT[a]								
Adapter transformation number								
Index 1:	a: Adapter number 1 - 32000							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

Adapter data

DOUBLE	\$TC_ADPT1 [32000]						reference:	
description:								
\$TC_ADPT1[a]								
Adapter geometry: Length 1								
Index 1:	a: Adapter number 1 - 32000							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_ADPT2 [32000]						reference:	
description:								
\$TC_ADPT2[a]								
Adapter geometry: Length 2								
Index 1:	a: Adapter number 1 - 32000							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
DOUBLE	\$TC_ADPT3 [32000]						reference:	
description:								
\$TC_ADPT3[a]								
Adapter geometry: Length 3								
Index 1:	a: Adapter number 1 - 32000							
unit:	mm							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

1.19 MultiTool data

INT	\$TC_MTPN [32000]						reference:	
description:								
\$TC_MTPN[n]								
Number loc.								
Index 1:	n: Multitool number							
unit:								
min.:	0	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
STRING	\$TC_MTP2 [32000]						reference:	
description:								
\$TC_MAP2[n]								
Identifier of Multitool								
Index 1:	n: Multitool number							
Index 3:	max. string length							
unit:								
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTP3 [32000]						reference:	
description:								
\$TC_MTP3[n]								
Size to the left								
Index 1:	n: Multitool number							
unit:								
min.:	1	max.:	/	std:	1			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

MultiTool data

INT	\$TC_MTP4 [32000]						reference:	
description:								
\$TC_MTP4[n]								
Size to the right								
Index 1:	n: Multitool number							
unit:								
min.:	1	max.:	/	std:		1		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTP5 [32000]						reference:	
description:								
\$TC_MTP5[n]								
Upward size								
Index 1:	n: Multitool number							
unit:								
min.:	1	max.:	/	std:		1		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTP6 [32000]						reference:	
description:								
\$TC_MTP6[n]								
Downward size								
Index 1:	n: Multitool number							
unit:								
min.:	1	max.:	/	std:		1		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

INT	\$TC_MTP7 [32000]						reference:	
description:								
\$TC_MTP7[n]								
Multitool location type								
Index 1:		n: Multitool number						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		9999		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
INT	\$TC_MTP8 [32000]						reference:	
description:								
\$TC_MTP8[n]								
State								
Index 1:		n: Multitool number						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	
INT	\$TC_MTP_POS [32000]						reference:	
description:								
\$TC_MTP_POS[n]								
Position								
Index 1:		n: Multitool number						
unit:								
min.:		0		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		No restrictions	

MultiTool data

INT	\$TC_MTP_KD [32000]		Type or distance coding			reference:	
description:							
\$TC_MTP_KD[n]							
Type of distance coding							
Index 1:		n: Multitool number					
unit:							
min.:		1		max.:		3	
std:		1					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
STRING	\$TC_MTP_PROTA [32000]		Name for the protection zone			reference:	
description:							
\$TC_MTP_PROTA[n]							
Name of the 3-dimensional protection area for the Multitool, or the name of the file, which contains the description of the protection area for the Multitool.							
Index 1:		n: Multitool number					
Index 3:		max. string length					
unit:							
min.:				max.:			
std:		"					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$TC_MTPC1 [32000]					reference:	
description:							
The type can be specified by the machine data. Default setting is INT							
\$TC_MTPC1[n]							
Index 1:		n: Multitool number					
unit:							
min.:		2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

INT	\$TC_MTPC2 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC2[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPC3 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC3[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPC4 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC4[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

MultiTool data

INT	\$TC_MTPC5 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC5[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPC6 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC6[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPC7 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC7[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

INT	\$TC_MTPC8 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC8[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPC9 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC9[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPC10 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPC10[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

MultiTool data

INT	\$TC_MTPCS1 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS1[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPCS2 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS2[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPCS3 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS3[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

INT	\$TC_MTPCS4 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS4[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPCS5 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS5[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPCS6 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS6[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

MultiTool data

INT	\$TC_MTPCS7 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS7[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPCS8 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS8[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			
INT	\$TC_MTPCS9 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS9[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648	max.:	2147483647	std:	0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	No restrictions			

INT	\$TC_MTPCS10 [32000]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPCS10[n]								
Index 1:	n: Multitool number							
unit:								
min.:	-2147483648		max.:	2147483647		std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	1	-		
write:	X	-	/	X	1	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
INT	\$TC_MTPP2 [32000,SLMAXLOCATIONS PERMT]						reference:	
description:								
\$TC_MTPP2[n,m]								
Multitool location type								
Index 1:	n: Multitool number							
Index 2:	m: Multitool location number							
unit:								
min.:	0		max.:	32000		std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
INT	\$TC_MTPP4 [32000,SLMAXLOCATIONS PERMT]						reference:	
description:								
\$TC_MTPP4[n,m]								
Multitool location state								
Index 1:	n: Multitool number							
Index 2:	m: Multitool location number							
unit:								
min.:	0		max.:	3		std:	2	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		

MultiTool data

INT	\$TC_MTPP6 [32000,SLMAXLOCATIONS]						reference:	
description:								
\$TC_MTPP6[n,m]								
T No. of the tool on this Multitool location								
Index 1:		n: Multitool number						
Index 2:		m: Multitool location number						
unit:		-						
min.:		0		max.:		32000		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified			link		No restrictions	
INT	\$TC_MTPP7 [32000,SLMAXLOCATIONS]						reference:	
description:								
\$TC_MTPP7[n,m]								
Adapter number of the tool adapter on this Multitool location								
Index 1:		n: Multitool number						
Index 2:		m: Multitool location number						
unit:		-						
min.:		0		max.:		32000		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified			link		No restrictions	
DOUBLE	\$TC_MTPPL [32000,SLMAXLOCATIONS]						reference:	
description:								
\$TC_MTPPL[n,m]								
Distance from reference location, length								
Index 1:		n: Multitool number						
Index 2:		m: Multitool location number						
unit:		mm						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified			link		No restrictions	

DOUBLE	\$TC_MTPPA [32000,SLMAXLOCATIONS]						reference:	
description:								
\$TC_MTPPA[n,m]								
Distance from reference location, angle								
Index 1:		n: Multitool number						
Index 2:		m: Multitool location number						
unit:		deg.						
min.:		0.0		max.:		360.0		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified			link		No restrictions	
INT	\$TC_MTPPC1 [32000,SLMAXLOCATIONS]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPPC1[n,m]								
Index 1:		n: Multitool number						
Index 2:		m: Multitool location number						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified			link		No restrictions	
INT	\$TC_MTPPC2 [32000,SLMAXLOCATIONS]						reference:	
description:								
The type can be specified by the machine data. Default setting is INT								
\$TC_MTPPC2[n,m]								
Index 1:		n: Multitool number						
Index 2:		m: Multitool location number						
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	X	/	-		
write:	X	-	/	X	/	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified			link		No restrictions	

MultiTool data

INT	\$TC_MTPPC3 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPC3[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions
INT	\$TC_MTPPC4 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPC4[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions
INT	\$TC_MTPPC5 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPC5[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions

INT	\$TC_MTPPC6 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPC6[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions
INT	\$TC_MTPPC7 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPC7[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions
INT	\$TC_MTPPC8 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPC8[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions

MultiTool data

INT	\$TC_MTPPC9 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPC9[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions
INT	\$TC_MTPPC10 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPC10[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions
INT	\$TC_MTPPCS1 [32000,SLMAXLOCATIONS]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS1[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions

INT	\$TC_MTPPCS2 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS2[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		
INT	\$TC_MTPPCS3 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS3[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		
INT	\$TC_MTPPCS4 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS4[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		No restrictions		

MultiTool data

INT	\$TC_MTPPCS5 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS5[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:		channel-specific			
block search				Not classified		link		No restrictions	
INT	\$TC_MTPPCS6 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS6[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:		channel-specific			
block search				Not classified		link		No restrictions	
INT	\$TC_MTPPCS7 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS7[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:		channel-specific			
block search				Not classified		link		No restrictions	

INT	\$TC_MTPPCS8 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS8[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions
INT	\$TC_MTPPCS9 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS9[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions
INT	\$TC_MTPPCS10 [32000,SLMAX-LOCATIONS PERMT]						reference:		
description:									
The type can be specified by the machine data. Default setting is INT									
\$TC_MTPPCS10[n,m]									
Index 1:		n: Multitool number							
Index 2:		m: Multitool location number							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	1	-			
write:	X	-	/	X	1	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions

Measuring system compensation values

1.20 Measuring system compensation values

DOUBLE	\$AA_ENC_COMP [n,m]						EEC table: Compensation value	reference:		
description:										
\$AA_ENC_COMP[n,m,a]										
Compensation values										
a: Machine axes										
Index 1:			n: Encoder no. 0-1							
Index 2:			m: Point no. 0 - <MD value>							
Index 3:			-							
unit:			Linear / angular position							
min.:			-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	/	-	0	-				
write:	X	-	/	-	0	-				
axis identifier:						Valuation:			channel-specific	
block search			Not classified			link		No restrictions		
DOUBLE	\$AA_ENC_COMP_STEP [n,31]						EEC table: Distance between interpolation points	reference:		
description:										
\$AA_ENC_COMP_STEP[n,a]										
Increment										
a: Machine axes										
Index 1:			n: Encoder no. 0-1							
Index 2:			-							
unit:			Linear / angular position							
min.:			-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	/	-	0	-				
write:	X	-	/	-	0	-				
axis identifier:						Valuation:			channel-specific	
block search			Not classified			link		No restrictions		
DOUBLE	\$AA_ENC_COMP_MIN [n,31]						EEC table: Starting position	reference:		
description:										
\$AA_ENC_COMP_MIN[n,a]										
Start position of compensation										
a: Machine axes										
Index 1:			n: Encoder no. 0-1							

Measuring system compensation values

Index 2:	-					
unit:	Linear / angular position					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$AA_ENC_COMP_MAX [n,31]			EEC table: End position		reference:
description:						
\$AA_ENC_COMP_MAX[n,a] End position of compensation a: Machine axes						
Index 1:	n: Encoder no. 0-1					
Index 2:	-					
unit:	Linear / angular position					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
BOOL	\$AA_ENC_COMP_IS_MODULO [n,31]			EEC table: Modulo functionality		reference:
description:						
\$AA_ENC_COMP_IS_MODULO[n,a] Compensation is modulo a: Machine axes						
Index 1:	n: Encoder no. 0-1					
Index 2:	-					
unit:	-					
min.:	FALSE	max.:	TRUE	std:	FALSE	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Quadrant error compensation

1.21 Quadrant error compensation

DOUBLE	\$AA_QEC [n,m]		QEC compensation value				reference:	
description:								
\$AA_QEC[n,m,a]								
Result of learning process								
a: Machine axes								
Index 1:		n: 0						
Index 2:		m: No. of point: 0 - \$MA_MM_QEC_MAX_POINTS						
Index 3:		-						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:						Valuation:	channel-specific	
block search			Not classified			link	No restrictions	
INT	\$AA_QEC_COARSE_STEPS [n,31]		QEC coarse quantizing				reference:	
description:								
\$AA_QEC_COARSE_STEPS[n,a]								
Compensation values: Rough quantization of characteristic								
a: Machine axes								
Index 1:		n: 0						
Index 2:		-						
unit:		-						
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:						Valuation:	channel-specific	
block search			Not classified			link	No restrictions	
INT	\$AA_QEC_FINE_STEPS [n,31]		QEC fine quantizing				reference:	
description:								
\$AA_QEC_FINE_STEPS[n,a]								
Fine quantization of characteristic								
a: Machine axes								
Index 1:		n: 0						

Quadrant error compensation

Index 2:							-	
unit:							-	
min.:		-2147483648		max.:		2147483647	std:	0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	
DOUBLE	\$AA_QEC_ACCEL_1 [n,31]			QEC acceleration limit range 1			reference:	
description:								
\$AA_QEC_ACCEL_1[n,a]								
Acceleration at 1st knee point according to definition [mm/s2 or inch/s2 or degree/s2]								
a: Machine axes								
Index 1:		n: 0						
Index 2:		-						
unit:		Linear / angular position						
min.:		-1,8E308		max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	
DOUBLE	\$AA_QEC_ACCEL_2 [n,31]			QEC acceleration limit range 2			reference:	
description:								
\$AA_QEC_ACCEL_2[n,a]								
Acceleration at 2nd knee point according to definition [mm/s2 or inch/s2 or degree/s2]								
a: Machine axes								
Index 1:		n: 0						
Index 2:		-						
unit:		Linear / angular position						
min.:		-1,8E308		max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	

Quadrant error compensation

DOUBLE	\$AA_QEC_ACCEL_3 [n,31]		QEC acceleration limit range 3			reference:	
description:							
\$AA_QEC_ACCEL_3[n,a]							
Acceleration at 3rd knee point according to definition [mm/s2 or inch/s2 or degree/s2]							
a: Machine axes							
Index 1:		n: 0					
Index 2:		-					
unit:		Linear / angular position					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

DOUBLE	\$AA_QEC_MEAS_TIME_1 [n,31]		QEC measuring time range 1			reference:	
description:							
\$AA_QEC_MEAS_TIME_1[n,a]							
Measuring time for range \$AA_QEC_ACCEL_1							
a: Machine axes							
Index 1:		n: 0					
Index 2:		-					
unit:		s					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

DOUBLE	\$AA_QEC_MEAS_TIME_2 [n,31]		QEC measuring time range 2			reference:	
description:							
\$AA_QEC_MEAS_TIME_2[n,a]							
Measuring time for range \$AA_QEC_ACCEL_2							
a: Machine axes							
Index 1:		n: 0					
Index 2:		-					
unit:		s					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Quadrant error compensation

DOUBLE	\$AA_QEC_MEAS_TIME_3 [n,31]		QEC measuring time range 3			reference:	
description:							
\$AA_QEC_MEAS_TIME_3[n,a]							
Measuring time for range \$AA_QEC_ACCEL_3							
a: Machine axes							
Index 1:		n: 0					
Index 2:		-					
unit:		s					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

DOUBLE	\$AA_QEC_TIME_1 [n,31]		QEC decay time 1			reference:	
description:							
\$AA_QEC_TIME_1[n,a]							
1. Filtering time for feedforward element							
a: Machine axes							
Index 1:		n: 0					
Index 2:		-					
unit:		s					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

DOUBLE	\$AA_QEC_TIME_2 [n,31]		QEC decay time 2			reference:	
description:							
\$AA_QEC_TIME_2[n,a]							
2. Filtering time for feedforward element							
a: Machine axes							
Index 1:		n: 0					
Index 2:		-					
unit:		s					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Quadrant error compensation

DOUBLE	\$AA_QEC_LEARNING_RATE [n,31]	QEC learning rate	reference:			
description:						
\$AA_QEC_LEARNING_RATE[n,a]						
Learning rate for network						
a: Machine axes						
Index 1:		n: 0				
Index 2:		-				
unit:		-				
min.:		-1,8E308	max.:	1,8E308		
			std:	0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search		Not classified		link	No restrictions	
BOOL	\$AA_QEC_DIRECTIONAL [n,31]	QEC direction-dependence	reference:			
description:						
\$AA_QEC_DIRECTIONAL[n,a]						
TRUE: Direction-dependent compensation						
FALSE: No direction-dependent compensation						
a: Machine axes						
Index 1:		n: 0				
Index 2:		-				
unit:		-				
min.:		FALSE	max.:	TRUE		
			std:	FALSE		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:	channel-specific	
block search		Not classified		link	No restrictions	

1.22 Interpolatory compensation

DOUBLE	\$AN_CEC [n,m]		CEC table: Compensation value			reference:		
description:								
\$AN_CEC[n,m]								
Compensation value								
Index 1:		n: Number of compensation table 0 - (maximum value can be set in MD)						
Index 2:		m: Number of interpolation point 0 - (maximum value can be set in MD)						
unit:		-						
min.:		-1,8E308	max.:		1,8E308	std:		0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	
INT	\$AN_CEC_INPUT_NCU [n]		CEC table: Basic axis on NCU			reference:		
description:								
\$AN_CEC_INPUT_NCU[n]:								
NCU on which the basic axis is calculated								
Index 1:		n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:		-						
min.:		-2147483648	max.:		2147483647	std:		0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	
AXIS	\$AN_CEC_INPUT_AXIS [n]		CEC table: Basic axis			reference:		
description:								
\$AN_CEC_INPUT_AXIS[n]:								
Name of axis whose setpoint is used as the compensation table input								
Index 1:		n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:		-						
min.:		max.:		std:		GEOAXISNUM		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	/	-	0	-		
write:	X	-	/	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search			Not classified		link		No restrictions	

Interpolatory compensation

INT	\$AN_CEC_OUTPUT_NCU [n]		CEC table: Compensation axis on NCU			reference:	
description:							
\$AN_CEC_OUTPUT_NCU[n]:							
NCU on which the compensation axis is calculated							
index 1:	n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:							
min.:	-2147483648		max.:	2147483647		std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified				link	No restrictions	
AXIS	\$AN_CEC_OUTPUT_AXIS [n]		CEC table: Compensation axis			reference:	
description:							
\$AN_CEC_OUTPUT_AXIS[n]:							
Name of axis to which the output of the compensation table is applied							
index 1:	n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:							
min.:			max.:			std:	GEOAXISNUM
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified				link	No restrictions	
DOUBLE	\$AN_CEC_STEP [n]		CEC table: Distance between interpolation points			reference:	
description:							
\$AN_CEC_STEP[n]							
Distance of offset values							
index 1:	n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified				link	No restrictions	

DOUBLE	\$AN_CEC_MIN [n]			CEC table: Starting position		reference:	
description:							
AN_CEC_MIN[n]							
Start position of compensation table							
Index 1:	n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified				link	No restrictions	
DOUBLE	\$AN_CEC_MAX [n]			CEC table: End position		reference:	
description:							
AN_CEC_MAX[n]							
End position of compensation table							
Index 1:	n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:	-						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified				link	No restrictions	
INT	\$AN_CEC_DIRECTION [n]			CEC table: Direction-dependence		reference:	
description:							
\$AN_CEC_DIRECTION[n]							
Activates direction-dependent action of compensation table							
Index 1:	n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:	-						
min.:	-2147483648		max.:	2147483647		std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified				link	No restrictions	

Interpolatory compensation

INT	\$AN_CEC_MULT_BY_TABLE [n]		CEC table: Multiplication		reference:		
description:							
\$AN_CEC_MULT_BY_TABLE[n]							
Number of table whose output value is to be multiplied by the output value of the compensation table							
0: Both travel directions of basic axis							
1: Positive travel direction of basic axis							
-1: Negative travel direction of basic axis							
index 1:	n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:	-						
min.:	-1		max.:	1		std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	-	0	-	
write:	X	-	1	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
BOOL	\$AN_CEC_IS_MODULO [n]		CEC table: Modulo functionality		reference:		
description:							
\$AN_CEC_IS_MODULO[n]							
TRUE: Cyclical repetition of compensation table							
FALSE: No cyclical repetition of compensation table							
index 1:	n: Number of compensation table 0 - (maximum value can be set in MD)						
unit:	-						
min.:	FALSE		max.:	TRUE		std:	FALSE
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	-	0	-	
write:	X	-	1	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		

1.23 NCK-specific protection areas

BOOL	\$SN_PA_ACTIV_IMMED [n]						Protection zone immediately active	reference:	
description:									
\$SN_PA_ACTIV_IMMED[n]									
Protection zone immediately active after boot									
TRUE: The protection zone is activated immediately									
the control has booted and the axes have been referenced									
FALSE: The protection zone is not immediately active									
Note: This variable can only be written as a system variable and is not affected by									
the NC commands between NPROTDEF(..) and EXECUTE(n).									
Note: This variable is not restored during REORG.									
Note: This variable is saved during data backup.									
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI									
index 1:		n: Number of protection zone						The maximum dimension is defined in	
		MD \$MN_MM_NUM_PROTECT_AREA_NCK.							
unit:									
min.:		FALSE		max.:		TRUE		std:	
								FALSE	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:						Valuation:			channel-specific
block search		Not classified				link		No restrictions	
CHAR	\$SN_PA_T_W [n]						Protection zone specific to workpiece/tool	reference:	
description:									
\$SN_PA_T_W[n]									
Protection zone specific to workpiece/tool									
0: Workpiece-specific protection zone									
3: Tool-specific protection zone									
Note: This variable is not restored during REORG.									
Note: This variable is saved during data backup.									
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI									
index 1:		n: Number of protection zone						The maximum dimension is defined in	
		MD \$MN_MM_NUM_PROTECT_AREA_NCK.							
unit:									
min.:		0		max.:		3		std:	
								0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	X	/	-			
write:	X	-	/	X	/	-			
axis identifier:						Valuation:			channel-specific
block search		Not classified				link		No restrictions	

NCK-specific protection areas

INT	\$\$SN_PA_ORI [n]		Orientation of protection zone		reference:	
description:						
\$\$SN_PA_ORI[n]						
Orientation of protection zone						
0: Polygon definition in the plane from the 1st and 2nd geo axes (G17)						
1: Polygon definition in the plane from the 3rd and 1st geo axes (G18)						
2: Polygon definition in the plane from the 2nd and 3rd geo axes (G19)						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
index 1:	n: Number of protection zone		The maximum dimension is defined in			
	MD \$MN_MM_NUM_PROTECT_AREA_NCK.					
unit:						
min.:	0	max.:	2	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

INT	\$\$SN_PA_LIM_3DIM [n]		Scope of application-limiting protection zone		reference:	
description:						
\$\$SN_PA_LIM_3DIM[n]						
Identifier for limitation of protection zone in the axis perpendicular to the polygon definition						
0: No limitation						
1: Limitation in the positive direction						
2: Limitation in the negative direction						
3: Limitation in both directions						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
index 1:	n: Number of protection zone		The maximum dimension is defined in			
	MD \$MN_MM_NUM_PROTECT_AREA_NCK.					
unit:						
min.:	0	max.:	3	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

NCK-specific protection areas

DOUBLE	\$SN_PA_PLUS_LIM [n]		Limitation of protection zone applicate plus		reference:	
description:						
\$SN_PA_PLUS_LIM[n]						
Positive limitation of protection zones in the axis perpendicular to the polygon definition						
Effective only if \$SN_PA_LIM_3DIM[n]=1 or = 3.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
index 1:			n: Number of protection zone		The maximum dimension is defined in MD \$MN_MM_NUM_PROTECT_AREA_NCK.	
unit:	mm					
min.:	-1,8E308		max.:	1,8E308		std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$SN_PA_MINUS_LIM [n]		Limitation of protection zone applicate minus		reference:	
description:						
\$SN_PA_MINUS_LIM[n]						
Negative limitation of protection zone in minus direction in the axis perpendicular to the polygon definition						
Effective only if \$SN_PA_LIM_3DIM[n]=2 or = 3.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
index 1:			n: Number of protection zone		The maximum dimension is defined in MD \$MN_MM_NUM_PROTECT_AREA_NCK.	
unit:	mm					
min.:	-1,8E308		max.:	1,8E308		std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				valuation:	channel-specific	
block search	Not classified			link	No restrictions	

NCK-specific protection areas

INT	\$SN_PA_CONT_NUM [n]		Number of valid contour elements		reference:	
description:						
\$SN_PA_CONT_NUM[n]						
Number of valid contour elements						
Protection zones need at least 2 contour elements for a complete description.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
index 1:		n: Number of protection zone		The maximum dimension is defined in		
		MD \$MN_MM_NUM_PROTECT_AREA_NCK.				
unit:						
min.:		0		max.:		10
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				valuation:		channel-specific
block search			Not classified		link	No restrictions
INT	\$SN_PA_CONT_TYP [n,m]		Type of the contour element		reference:	
description:						
\$SN_PA_CONT_TYP[n,m]						
Type (G1, G2, G3) of contour element						
=0: Contour not defined						
=1: Straight						
=2: Circle element (clockwise)						
=3: Circle element (counterclockwise)						
The end point is determined by \$SN_PA_CONT_ORD or \$SN_PA_CONT_ABS. With contour types G2 and G3, \$SN_PA_CENT_ORD or \$SN_PA_CENT_ABS determines the center point of the circle element.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
index 1:		n: Number of protection zone		The maximum dimension is defined in		
		MD \$MN_MM_NUM_PROTECT_AREA_NCK.				
index 2:		m: Number of the contour element		(0 -		
		MAXNUM_CONTOURNO_PROTECTAREA)				
unit:						
min.:		0		max.:		3
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				valuation:		channel-specific
block search			Not classified		link	No restrictions

NCK-specific protection areas

DOUBLE	\$SN_PA_CONT_ORD [n,m]	End point of contour element (ordinate)	reference:			
description:						
\$SN_PA_CONT_ORD[n,m]						
End point of contour element (ordinate)						
See also description of \$SN_PA_CONT_TYP						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
Index 1:	n: Number of protection zone The maximum dimension is defined in MD \$MN_MM_NUM_PROTECT_AREA_NCK.					
Index 2:	m: Number of the contour element (0 - MAXNUM_CONTOURNO_PROTECTAREA)					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$SN_PA_CONT_ABS [n,m]	End point of contour element (abscissa)	reference:			
description:						
\$SN_PA_CONT_ABS[n,m]						
End point of contour element (abscissa)						
See also description of \$SN_PA_CONT_TYP						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
Index 1:	n: Number of protection zone The maximum dimension is defined in MD \$MN_MM_NUM_PROTECT_AREA_NCK.					
Index 2:	m: Number of the contour element (0 - MAXNUM_CONTOURNO_PROTECTAREA)					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

NCK-specific protection areas

DOUBLE	\$SN_PA_CENT_ORD [n,m]	Center point of contour element (ordinate)	reference:			
description:						
\$SN_PA_CENT_ORD[n,m]						
Center point of contour element (ordinate)						
Relevant only if \$SN_PA_CONT_TYP[n,m] = 2 or = 3.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
Index 1:	n: Number of protection zone The maximum dimension is defined in MD \$MN_MM_NUM_PROTECT_AREA_NCK.					
Index 2:	m: Number of the contour element (0 - MAXNUM_CONTOURNO_PROTECTAREA)					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$SN_PA_CENT_ABS [n,m]	Center point of contour element (abscissa)	reference:			
description:						
\$SN_PA_CENT_ABS[n,m]						
Center point of contour element (abscissa)						
Relevant only if \$SN_PA_CONT_TYP[n,m] = 2 or = 3.						
Note: This variable is not restored during REORG.						
Note: This variable is saved during data backup.						
Blocks: _N_NCK_PRO, _N_COMPLETE_PRO and _N_INITIAL_INI						
Index 1:	n: Number of protection zone The maximum dimension is defined in MD \$MN_MM_NUM_PROTECT_AREA_NCK.					
Index 2:	m: Number of the contour element (0 - MAXNUM_CONTOURNO_PROTECTAREA)					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

1.24 Cycle parameterization

DOUBLE	\$C_A						ISO cycle parameter for address A	reference:	
description:									
\$C_A									
Value of programmed address A in ISO2/3 mode for cycle parameterization									
unit:									
-									
min.:			-1,8E308		max.:		1,8E308		
std:			0.0						
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:							Valuation:	channel-specific	
block search		Not classified				link	No restrictions		
DOUBLE	\$C_B						ISO cycle parameter for address B	reference:	
description:									
\$C_B									
Value of programmed address B in ISO2/3 mode for cycle parameterization									
unit:									
-									
min.:			-1,8E308		max.:		1,8E308		
std:			0.0						
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:							Valuation:	channel-specific	
block search		Not classified				link	No restrictions		
DOUBLE	\$C_C						ISO cycle parameter for address C	reference:	
description:									
\$C_C									
Value of programmed address C in ISO2/3 mode for cycle parameterization									
unit:									
-									
min.:			-1,8E308		max.:		1,8E308		
std:			0.0						
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:							Valuation:	channel-specific	
block search		Not classified				link	No restrictions		

Cycle parameterization

DOUBLE	\$C_D		ISO cycle parameter for address D			reference:	
description:							
\$C_D							
Value of programmed address D in ISO2/3 mode for cycle parameterization							
unit:							
-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		
DOUBLE	\$C_E		ISO cycle parameter for address E			reference:	
description:							
\$C_E							
Value of programmed address E in ISO2/3 mode for cycle parameterization							
unit:							
-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		
DOUBLE	\$C_F		ISO cycle parameter for address F			reference:	
description:							
\$C_F							
Value of programmed address F in ISO2/3 mode for cycle parameterization							
unit:							
-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		

DOUBLE	\$C_G		ISO cycle parameter for address G				reference:	
description:								
\$C_G								
Value of programmed address G in ISO2/3 mode for cycle parameterization								
unit:								
-								
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
DOUBLE	\$C_H		ISO cycle parameter for address H				reference:	
description:								
\$C_H								
Value of programmed address H in ISO2/3 mode for cycle parameterization								
unit:								
-								
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
DOUBLE	\$C_I [10]		ISO cycle parameter for address I				reference:	
description:								
\$C_I[]								
Value of programmed address I in ISO2/3 mode for cycle parameterization and macro programming with G65/G66.								
index 1:	Up to 10 entries with address K can be made in the block for macro programming with G65/G66. The values are stored in the array in the sequence in which they were programmed.							
unit:								
-								
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		

Cycle parameterization

DOUBLE	\$C_J [10]						ISO cycle parameter for address J	reference:	
description:									
\$C_J[]									
Value of programmed address J in ISO2/3 mode for cycle parameterization and macro programming with G65/G66.									
Index 1:									
Up to 10 entries with address K can be made in the block for macro programming with G65/G66. The values are stored in the array in the sequence in which they were programmed.									
unit:									
-									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			No restrictions		
Not classified									
DOUBLE	\$C_K [10]						ISO cycle parameter for address K	reference:	
description:									
\$C_K[]									
Value of programmed address K in ISO2/3 mode for cycle parameterization and macro programming with G65/G66.									
Index 1:									
Up to 10 entries with address K can be made in the block for macro programming with G65/G66. The values are stored in the array in the sequence in which they were programmed.									
unit:									
-									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			No restrictions		
Not classified									
DOUBLE	\$C_L						ISO cycle parameter for address L	reference:	
description:									
\$C_L									
Value of programmed address L in ISO2/3 mode for cycle parameterization									
unit:									
-									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			No restrictions		
Not classified									

Cycle parameterization

DOUBLE	\$C_M						ISO cycle parameter for address M	reference:	
description:									
\$C_M									
Value of programmed address M in ISO2/3 mode for cycle parameterization									
unit:									
-									
min.:	-1,8E308		max.:	1,8E308		std:	0.0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:						Valuation:	channel-specific		
block search	Not classified				link	No restrictions			
DOUBLE	\$C_N						ISO cycle parameter for address N	reference:	
description:									
\$C_N									
Value of programmed address N in ISO2/3 mode for cycle parameterization									
unit:									
-									
min.:	-1,8E308		max.:	1,8E308		std:	0.0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:						Valuation:	channel-specific		
block search	Not classified				link	No restrictions			
DOUBLE	\$C_O						ISO cycle parameter for address O	reference:	
description:									
\$C_O									
Value of programmed address O in ISO2/3 mode for cycle parameterization									
unit:									
-									
min.:	-1,8E308		max.:	1,8E308		std:	0.0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	/	-	0	-			
write:	X	-	/	-	0	-			
axis identifier:						Valuation:	channel-specific		
block search	Not classified				link	No restrictions			

Cycle parameterization

DOUBLE	\$C_P						ISO cycle parameter for address P	reference:		
description:										
\$C_P										
Value of programmed address P in ISO2/3 mode for cycle parameterization										
unit:										
-										
min.:			-1,8E308			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	/	-	0	-				
write:	X	-	/	-	0	-				
axis identifier:						Valuation:		channel-specific		
block search		Not classified				link		No restrictions		
DOUBLE	\$C_Q						ISO cycle parameter for address Q	reference:		
description:										
\$C_Q										
Value of programmed address Q in ISO2/3 mode for cycle parameterization										
unit:										
-										
min.:			-1,8E308			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	/	-	0	-				
write:	X	-	/	-	0	-				
axis identifier:						Valuation:		channel-specific		
block search		Not classified				link		No restrictions		
DOUBLE	\$C_R						ISO cycle parameter for address R	reference:		
description:										
\$C_R										
Value of programmed address R in ISO2/3 mode for cycle parameterization										
unit:										
-										
min.:			-1,8E308			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	/	-	0	-				
write:	X	-	/	-	0	-				
axis identifier:						Valuation:		channel-specific		
block search		Not classified				link		No restrictions		

Cycle parameterization

DOUBLE	\$C_S		ISO cycle parameter for address S				reference:	
description:								
\$C_S								
Value of programmed address S in ISO2/3 mode for cycle parameterization								
unit:								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Not classified				No restrictions				
DOUBLE	\$C_T		Cycle parameter for address T				reference:	
description:								
\$C_T								
Value of programmed address T for cycle parameterization (ISO2/3 mode) and T function substitution (ISO2/3 and standard modes)								
unit:								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Not classified				No restrictions				
DOUBLE	\$C_U		ISO cycle parameter for address U				reference:	
description:								
\$C_U								
Value of programmed address U in ISO2/3 mode for cycle parameterization								
unit:								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Not classified				No restrictions				

Cycle parameterization

DOUBLE	\$C_V						ISO cycle parameter for address V	reference:		
description:										
\$C_V										
Value of programmed address V in ISO2/3 mode for cycle parameterization										
unit:										
-										
min.:			-1,8E308			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	/	-	0	-				
write:	X	-	/	-	0	-				
axis identifier:						Valuation:		channel-specific		
block search			Not classified			link		No restrictions		
DOUBLE	\$C_W						ISO cycle parameter for address W	reference:		
description:										
\$C_W										
Value of programmed address W in ISO2/3 mode for cycle parameterization										
unit:										
-										
min.:			-1,8E308			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	/	-	0	-				
write:	X	-	/	-	0	-				
axis identifier:						Valuation:		channel-specific		
block search			Not classified			link		No restrictions		
DOUBLE	\$C_X						ISO cycle parameter for address X	reference:		
description:										
\$C_X										
Value of programmed address X in ISO2/3 mode for cycle parameterization										
unit:										
-										
min.:			-1,8E308			max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	/	-	0	-				
write:	X	-	/	-	0	-				
axis identifier:						Valuation:		channel-specific		
block search			Not classified			link		No restrictions		

Cycle parameterization

DOUBLE	\$C_Y		ISO cycle parameter for address Y			reference:	
description:							
\$C_Y							
Value of programmed address Y in ISO2/3 mode for cycle parameterization							
unit:							
-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		
DOUBLE	\$C_Z		ISO cycle parameter for address Z			reference:	
description:							
\$C_Z							
Value of programmed address Z in ISO2/3 mode for cycle parameterization							
unit:							
-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		
DOUBLE	\$C_DL		ISO parameter for address DL			reference:	
description:							
Value of programmed address DL (additive tool offset) in the case of a subprogram call by M/T function substitution							
unit:							
-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		

Cycle parameterization

DOUBLE	\$C_PI		ISO cycle parameter for address P				reference:	
description:								
Program number of interrupt routine programmed with M96 Pxx in ISO2/3 mode								
unit:								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified				link		
						No restrictions		
STRING	\$C_TS [-1]		Tool identifier for T function substitution				reference:	
description:								
\$C_TS								
String of the tool identifier programmed under address T for								
T function substitution (with active tool monitoring only)								
Index 1:		The tool name appears once only in the block.						
Index 3:		Maximum string length						
unit:								
min.:				max.:				
std:		""						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified				link		
						No restrictions		
INT	\$C_A_PROG		ISO cycle parameter for address A				reference:	
description:								
\$C_A_PROG								
Address A is programmed in a block with cycle call								
0 = Not programmed								
1 = Programmed								
3 = Programmed incrementally								
Bit 0 is set if the address is programmed absolutely or incrementally.								
Bit 1 is set in addition if the address is programmed incrementally.								
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified				link		
						No restrictions		

INT	\$C_B_PROG			ISO cycle parameter for address B		reference:	
description:							
\$C_B_PROG							
Address B is programmed in a block with cycle call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$C_C_PROG			ISO cycle parameter for address C		reference:	
description:							
\$C_C_PROG							
Address C is programmed in a block with cycle call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Cycle parameterization

INT	\$C_D_PROG			ISO cycle parameter for address D		reference:	
description:							
\$C_D_PROG							
Address D is programmed in a block with cycle call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		No restrictions	
INT	\$C_E_PROG			ISO cycle parameter for address E		reference:	
description:							
\$C_E_PROG							
Address E is programmed in a block with cycle call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		No restrictions	

INT	\$C_F_PROG			ISO cycle parameter for address F		reference:	
description:							
\$C_F_PROG							
Address F is programmed in a block with cycle call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$C_G_PROG			ISO cycle parameter for address G		reference:	
description:							
\$C_G_PROG							
G function for cycle call is programmed in this block							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Cycle parameterization

INT	\$C_H_PROG			ISO cycle parameter for address H		reference:	
description:							
\$C_H_PROG							
Address H is programmed in a block with cycle call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$C_I_PROG			ISO cycle parameter for address I		reference:	
description:							
\$C_I_PROG							
Address I is programmed in a block with cycle macro call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

INT	\$C_J_PROG			ISO cycle parameter for address J			reference:
description:							
\$C_J_PROG							
Address J is programmed in a block with cycle macro call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$C_K_PROG			ISO cycle parameter for address K			reference:
description:							
\$C_K_PROG							
Address K is programmed in a block with cycle macro call							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Cycle parameterization

INT	\$C_L_PROG			ISO cycle parameter for address L	reference:	
description:						
\$C_L_PROG						
Address L is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
INT	\$C_M_PROG			ISO cycle parameter for address M	reference:	
description:						
\$C_M_PROG						
Address M is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

INT	\$C_N_PROG			ISO cycle parameter for address N	reference:	
description:						
\$C_N_PROG						
Address N is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions
INT	\$C_O_PROG			ISO cycle parameter for address O	reference:	
description:						
\$C_O_PROG						
Address O is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions

Cycle parameterization

INT	\$C_P_PROG			ISO cycle parameter for address P	reference:	
description:						
\$C_P_PROG						
Address P is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions
INT	\$C_Q_PROG			ISO cycle parameter for address Q	reference:	
description:						
\$C_Q_PROG						
Address Q is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions

INT	\$C_R_PROG			ISO cycle parameter for address R	reference:	
description:						
\$C_R_PROG						
Address R is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
INT	\$C_S_PROG			ISO cycle parameter for address S	reference:	
description:						
\$C_S_PROG						
Address S is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

Cycle parameterization

INT	\$C_T_PROG			ISO cycle parameter for address T		reference:	
description:							
\$C_T_PROG							
Address T is programmed in a block with cycle call or T function substitution							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		No restrictions	
INT	\$C_U_PROG			ISO cycle parameter for address U		reference:	
description:							
\$C_U_PROG							
Address U is programmed in the current block							
0 = Not programmed							
1 = Programmed							
3 = Programmed incrementally							
Bit 0 is set if the address is programmed absolutely or incrementally.							
Bit 1 is set in addition if the address is programmed incrementally.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		No restrictions	

INT	\$C_V_PROG			ISO cycle parameter for address V	reference:	
description:						
\$C_V_PROG						
Address V is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
INT	\$C_W_PROG			ISO cycle parameter for address W	reference:	
description:						
\$C_W_PROG						
Address W is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

Cycle parameterization

INT	\$C_X_PROG			ISO cycle parameter for address X	reference:	
description:						
\$C_X_PROG						
Address X is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified			link	No restrictions
INT	\$C_Y_PROG			ISO cycle parameter for address Y	reference:	
description:						
\$C_Y_PROG						
Address Y is programmed in a block with cycle call						
0 = Not programmed						
1 = Programmed						
3 = Programmed incrementally						
Bit 0 is set if the address is programmed absolutely or incrementally.						
Bit 1 is set in addition if the address is programmed incrementally.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified			link	No restrictions

INT	\$C_Z_PROG			ISO cycle parameter for address Z			reference:		
description:									
\$C_Z_PROG									
Address Z is programmed in a block with cycle call									
0 = Not programmed									
1 = Programmed									
3 = Programmed incrementally									
Bit 0 is set if the address is programmed absolutely or incrementally.									
Bit 1 is set in addition if the address is programmed incrementally.									
unit:									
-									
min.:			-2147483648		max.:		2147483647		
					std:		0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:						Valuation:			
						channel-specific			
block search		Not classified				link		No restrictions	
INT	\$C_PI_PROG			ISO cycle parameter for address P			reference:		
description:									
0 = Not programmed									
1 = M96 Pxx interrupt routine programmed									
unit:									
-									
min.:			-2147483648		max.:		2147483647		
					std:		0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:						Valuation:			
						channel-specific			
block search		Not classified				link		No restrictions	
INT	\$C_G60_PROG			ISO cycle parameters programmed for G60 in block			reference:		
description:									
0 = not programmed									
1 = G60 is programmed in the cycle call block									
unit:									
-									
min.:			-2147483648		max.:		2147483647		
					std:		0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	X	-	7	-	0	-			
axis identifier:						Valuation:			
						channel-specific			
block search		Not classified				link		No restrictions	

Cycle parameterization

INT	\$C_DL_PROG		ISO cycle parameter for address DL			reference:	
description:							
Interrogation as to whether address DL (additive tool offset) has been programmed for a subprogram call per M/T function substitution.							
0 = Not programmed							
1 = An additive tool offset has been programmed under address DL.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search		Not classified			link	No restrictions	
INT	\$C_TS_PROG		Parameter for tool name as string			reference:	
description:							
Interrogation as to whether a tool identifier has been programmed under address T for a subprogram call per T function substitution.							
(with active tool monitoring only)							
0 = Not programmed							
1 = Programmed							
unit:							
min.: -2147483648 max.: 1 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search		Not classified			link	No restrictions	
INT	\$C_ALL_PROG		Bit pattern specifying which addresses are programmed			reference:	
description:							
\$C_ALL_PROG							
Bit pattern of all programmed addresses in a block with cycle call							
Bit0 = Address "A" Bit25 = Address "Z"							
Bit = 1 -> Address programmed							
Bit = 0 -> Address not programmed							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	X	-	7	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search		Not classified			link	No restrictions	

INT	\$C_INC_PROG						Bit pattern specifying whether addresses are programmed incr.	reference:			
description:											
\$C_INC_PROG											
Bit pattern of all incrementally programmed addresses in a block with cycle call											
Bit0 = Address "A" Bit25 = Address "Z"											
Bit = 1 -> Address incrementally programmed											
Bit = 0 -> Address absolutely programmed											
unit:											
min.:		-2147483648		max.:		2147483647		std:		0	
Properties with regard to reading/writing:											
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM					
read:	X	-	/	-	0	-					
write:	X	-	/	-	0	-					
axis identifier:				Valuation:				channel-specific			
block search		Not classified				link		No restrictions			
INT	\$C_TYP_PROG						Bit pattern specifying whether addresses are progr. as INT/REAL	reference:			
description:											
\$C_TYP_PROG											
Bit pattern of all addresses programmed with value INT or REAL											
Bit0 = Address "A" Bit25 = Address "Z"											
Bit = 1 -> Address programmed with real value											
Bit = 0 -> Address programmed with int value											
unit:											
min.:		-2147483648		max.:		2147483647		std:		0	
Properties with regard to reading/writing:											
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM					
read:	X	-	/	-	0	-					
write:	X	-	/	-	0	-					
axis identifier:				Valuation:				channel-specific			
block search		Not classified				link		No restrictions			

Cycle parameterization

INT	\$C_I_NUM		Number of "I" addresses programmed in block		reference:	
description:						
\$C_I_NUM						
The number of "I" addresses programmed in the block is stored in \$C_I_NUM.						
This value is always 1 for cycle programming if bit 0 is set in \$C_I_PROG.						
In the case of macro programming with G65/G66, this variable contains the number of "I" addresses programmed in the block (max. 10).						
unit:						
min.: -2147483648 max.: 10 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions
INT	\$C_J_NUM		Number of "J" addresses programmed in block		reference:	
description:						
\$C_J_NUM						
The number of "J" addresses programmed in the block is stored in \$C_J_NUM.						
This value is always 1 for cycle programming if bit 0 is set in \$C_J_PROG.						
In the case of macro programming with G65/G66, this variable contains the number of "J" addresses programmed in the block (max. 10).						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		No restrictions

INT	\$C_K_NUM		Number of "K" addresses programmed in block			reference:	
description:							
\$C_K_NUM							
The number of "K" addresses programmed in the block is stored in \$C_K_NUM.							
This value is always 1 for cycle programming if bit 0 is set in \$C_K_PROG.							
In the case of macro programming with G65/G66, this variable contains the number of "K" addresses programmed in the block (max. 10).							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$C_I_ORDER [10]		Block number of address I for IJK blocks			reference:	
description:							
\$C_I_ORDER[]							
Number of I J K block in which I has been programmed							
Up to 10 entries with address I can be made in the block for macro programming with G65/G66. This allows the sequence of IJK blocks to be evaluated							
The association between IJK blocks is always noted.							
index 1: Up to 10 entries with address K can be made in the block for macro programming with G65/G66. This allows the sequence of IJK blocks to be evaluated							
The association between I J K blocks is always noted.							
unit:							
min.: -2147483648 max.: 2147483647 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Cycle parameterization

INT	\$C_J_ORDER [10]			Block number or address J for IJK blocks	reference:	
description:						
\$C_J_ORDER[]						
Number of IJK block in which J has been programmed.						
Up to 10 entries with address J can be made in the block for macro programming with G65/G66. This allows the sequence of IJK blocks to be evaluated						
The association between IJK blocks is always noted.						
Index 1:						
Up to 10 entries with address K can be made in the block for macro programming with G65/G66. This allows the sequence of IJK blocks to be evaluated						
The association between I J K blocks is always noted.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions
INT	\$C_K_ORDER [10]			Block number or address K for IJK blocks	reference:	
description:						
\$C_K_ORDER[]						
Number of IJK block in which K has been programmed.						
Up to 10 entries with address K can be made in the block for macro programming with G65/G66. This allows the sequence of IJK blocks to be evaluated						
The association between IJK blocks is always noted.						
Index 1:						
Up to 10 entries with address K can be made in the block for macro programming with G65/G66. This allows the sequence of IJK blocks to be evaluated						
The association between I J K blocks is always noted.						
unit:						
-						
min.:		-2147483648		max.:		2147483647
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	X	-	7	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

INT	\$C_ME		Address extension for subprogram calls via M function		reference:	
description:						
\$C_ME						
Address extension for address M for subprogram call per M function						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	No restrictions
INT	\$C_TE		Address extension for subprogram calls via T function		reference:	
description:						
\$C_TE						
Address extension for address T for subprogram call per M function						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	No restrictions
DOUBLE	\$C_MACPAR [33]		Auxiliary variable for implementing # macros		reference:	
description:						
\$MAC_PAR[n]						
Macro variable in Iso2/3 mode programmed in the original program with #<number>						
Index 1: The maximum number of ISO macroparameters is 33						
unit:						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	No restrictions

Cycle parameterization

DOUBLE	\$C_AUX_VALUE [1]		Parameter for auxiliary function replacement.			reference:		
description:								
Parameter for auxiliary function replacement. It contains the value of the auxiliary function that is to be replaced. Currently, only M functions can be replaced by appropriate configuration of \$MN_M_NO_FCT_CYCLE.								
Index 1:								
unit:								
min.:		-1,8E308	max.:		1,8E308	std:		0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:			Valuation:					channel-specific
block search		Not classified			link		No restrictions	
INT	\$C_AUX_EXT [1]		Parameter for auxiliary function replacement.			reference:		
description:								
Parameter for auxiliary function replacement. It contains the address extension of the auxiliary function that is to be replaced. Currently, only M functions can be replaced by appropriate configuration of \$MN_M_NO_FCT_CYCLE.								
Index 1:								
unit:								
min.:		0	max.:		2147483647	std:		0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:			Valuation:					channel-specific
block search		Not classified			link		No restrictions	
BOOL	\$C_AUX_IS_QUICK [1]		Parameter for auxiliary function replacement.			reference:		
description:								
Parameter for auxiliary function replacement. It contains the information whether the auxiliary function that is to be replaced is to be output with a fast (TRUE) or normal (FALSE) acknowledgment. Currently, only M functions can be replaced by appropriate configuration of \$MN_M_NO_FCT_CYCLE.								
Index 1:								
unit:								
min.:		FALSE	max.:		TRUE	std:		FALSE
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	X	-	7	-	0	-		
axis identifier:			Valuation:					channel-specific
block search		Not classified			link		No restrictions	

DOUBLE	\$C_T_VALUE		Cycle parameter for address T		reference:		
description:							
\$C_T_VALUE							
Value of the programmed, non-split address T for							
T function replacement and M function replacement (ISO3 mode).							
unit:							
-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	-	0	-	
write:	X	-	/	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		

1.25 System data

DOUBLE	\$AN_SETUP_TIME		Time since booting with default values		reference:		
description:							
The \$AN_SETUP_TIME timer counts the time elapsed since the control last booted with default values (in minutes).							
The timer is automatically reset each time the control boots with default data.							
Use in NC program:							
IF \$AN_SETUP_TIME > 60000 GOTOF MARK01							
unit:							
s							
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:					Valuation:	channel-specific	
block search	Current value			link	No restrictions		

System data

DOUBLE	\$AN_POWERON_TIME		Time since control last booted			reference:	
description:							
The \$AN_POWERON_TIME timer counts the time elapsed since the control last booted (in minutes). The timer is automatically reset each time the control boots. Use in NC program: IF \$AN_POWERON_TIME == 480 GOTOF MARK02							
unit: s							
min.:		1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation: channel-specific			
block search		Current value			link		No restrictions
DOUBLE	\$AN_NCK_VERSION		NCK version			reference:	
description:							
NCK version NCK version: only the integer places in the floating-point number are evaluated, the decimal places can contain identifiers for intermediate versions used by the development department. The integer places contain the official software version identifier of the NCK: For example, the value for NCK version 20.00.00 is variable 200000.0 compare OPI N/Y nckVersion							
unit: -							
min.:		0.0		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Independent			link		No restrictions
BOOL	\$AN_IPO_LOAD_LIMIT		IPO utilization limit reached			reference:	
description:							
Variable \$AN_IPO_LOAD_LIMIT returns TRUE when the interpolator load limit is reached. Machine data \$MN_IPO_MAX_LOAD is used to specify the gross interpolator operating time (in % of the interpolation cycle) at which variable \$AN_IPO_LOAD_LIMIT is set to TRUE. If the value falls below the limit again, the variable is reset to FALSE.							
unit: -							
min.:		FALSE		max.:		TRUE	
				std:		FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	-	0	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified

DOUBLE	\$AN_IPO_ACT_LOAD		Current IPO runtime			reference:	
description:							
\$AN_IPO_ACT_LOAD supplies the current interpolator runtime including the runtime of the synchronized actions in all channels.							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	

DOUBLE	\$AN_IPO_MAX_LOAD		Maximum IPO runtime			reference:	
description:							
\$AN_IPO_MAX_LOAD supplies the longest interpolator runtime of one interpolation cycle (including the runtime of the synchronized actions).							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	

DOUBLE	\$AN_IPO_MIN_LOAD		Shortest IPO runtime			reference:	
description:							
\$AN_IPO_MIN_LOAD supplies the shortest interpolator runtime including the runtime of the synchronized actions per interpolation cycle in all channels.							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	

System data

DOUBLE	\$AN_IPO_LOAD_PERCENT		Ratio of current IPO runtime to IPO cycle		reference:	
description:						
\$AN_IPO_LOAD_PERCENT supplies the current interpolator load percentage across all channels. Is calculated from the ratio of the interpolator runtime across all channels in the last interpolation cycle to the interpolation cycle.						
unit:						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link		Not classified
DOUBLE	\$AN_SYNC_ACT_LOAD		Current runtime for synchronized actions		reference:	
description:						
\$AN_SYNC_ACT_LOAD supplies the current runtime for synchronized actions of the last interpolation cycle across all channels.						
unit:						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search		Not classified		link		Not classified
DOUBLE	\$AN_SYNC_MAX_LOAD		Longest runtime for synchronized actions		reference:	
description:						
\$AN_SYNC_MAX_LOAD supplies the longest runtime for synchronized actions of one interpolation cycle across all channels.						
unit:						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	X	X	7	-	0	X
axis identifier:					Valuation:	channel-specific
block search		Not classified		link		Not classified

DOUBLE	\$AN_SYNC_TO_IPO		Synact / IPO computing time percentage			reference:	
description:							
\$AN_SYNC_TO_IPO supplies the percentage proportion of the synchronized action runtime measured against the overall interpolation runtime of the last interpolation cycle across all channels.							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	
DOUBLE	\$AN_SERVO_ACT_LOAD		Current runtime of position controller			reference:	
description:							
\$AN_SERVO_ACT_LOAD supplies the current runtime of the position controller.							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	
DOUBLE	\$AN_SERVO_MAX_LOAD		Longest runtime of position controller			reference:	
description:							
\$AN_SERVO_MAX_LOAD supplies the longest runtime of the position controller.							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	
DOUBLE	\$AN_SERVO_MIN_LOAD		Shortest runtime of position controller			reference:	
description:							
\$AN_SERVO_MIN_LOAD supplies the shortest runtime of the position controller.							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	-	0	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	

System data

DOUBLE	\$AN_REBOOT_DELAY_TIME		Time until reboot		reference:	
description:						
A value higher than zero indicates that the NCK has received the "NCK Reset" signal from the HMI and displays the time period (in seconds) programmed on the NCK for rebooting (Power Off followed by Power ON).						
The user can thus identify a reboot operation in a synchronized action and prepare his application accordingly.						
\$AN_REBOOT_DELAY_TIME is 0.0 provided that no "NCK Reset" has been received.						
Example:						
A synchronized action reacts to the variable and switches the axes to "Safe standstill" in a Safety Integrated application.						
Comments:						
- See also: \$MN_REBOOT_DELAY_TIME						
- The "NCK Reset" is implemented on the OPI by means of PI " _N_IBN_SS".						
unit:		s				
min.:		0.0		max.: 1,8E308		std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	Cross-channel
block search		Independent			link	No restrictions
DOUBLE	\$AN_TIMER [n]		System variable for global NCK time measurement		reference:	
description:						
\$AN_TIMER[n]						
Timer unit in seconds						
The time is counted in multiples of an interpolation cycle.						
The timers are started by \$AN_TIMER[n]=<start value>.						
The timers are stopped by \$AN_TIMER[n]=-1.						
When a timer is stopped, the last current time value is stored.						
Index 1:		The dimension is defined in MD \$MN_MM_NUM_AN_TIMER.				
unit:		-				
min.:		-1,8E308		max.: 1,8E308		std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	runin stp	X	7	-	0	X
axis identifier:					Valuation:	Cross-channel
block search		Not classified			link	Not classified

INT	\$A_PROBE [2]		Probe status		reference:	
description:						
\$A_PROBE[1]: Status of first probe						
\$A_PROBE[2]: Status of second probe						
0 => not deflected						
1 => deflected						
Index 1:	n: Number of probe					
unit:						
min.:	0	max.:	1	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
DOUBLE	\$AN_PERSDIAG [4,6]		Diagnostics data for data persistence		reference:	
description:						
Diagnostics data for data persistence (frequency, time required); e.g. CompactFlash card						
The time values indicate how long it took from the viewpoint of the NC software to achieve data persistence						
The following values can be read:						
Index1Meaning						
0Always sums on all sub-functions						
1Sub-function 'Passive file system'						
2Sub-function 'Active file system'						
3Sub-function 'Machine data'						
Index2Meaning						
0Number of all persistence operations						
1Number of failed persistence operations (system deficiency)						
2Summed up time of all persistence operations in seconds						
3Minimum time required for a persistence operation in seconds						
4Average time (averaged across all persistence operations) in seconds						
5Maximum time required for a persistence operation in seconds						
Application in NC program:						
IF \$AN_PERSDIAG[0, 1] > 0 GOTOF check card						
Index 1:	-					
Index 2:	-					
unit:	s					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Current value			link	No restrictions	

System data

INT	\$AN_VMODEL_STATUS		System variable for status of VRML model			reference:	
description:							
TO DO!							
unit:							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	3	X	3	X	
write:	runin stp	X	3	X	3	X	
axis identifier:				Valuation:		Cross-channel	
block search		Not classified			link		Not classified
INT	\$A_DPSB_IN [16,128]		PROFIBUS/PROFINET input byte (signed)			reference:	
description:							
The field variable \$A_DPSB_IN[n,m] is used to read a data byte (8 bits) from PROFIBUS/PROFINET IO.							
n:= Index for the input data area							
m:= Byte Index for the data							
The value is shown as signed.							
The data area to be read can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case, the old value or initial value 0 is always read.							
Whether a data area is valid can be queried with the variables \$A_DP_IN_STATE[n] or \$A_DP_IN_VALID.							
Index 1:		-					
Index 2:		-					
unit:							
min.:		-128		max.:		127	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		Cross-channel	
block search		Not classified			link		Not classified

INT	\$A_DPB_IN [16,128]		PROFIBUS/PROFINET input byte (unsigned)			reference:	
description:							
The field variable \$A_DPB_IN[n,m] is used to read a data byte (8 bits) from PROFIBUS/PROFINET IO. n:= Index for the input data area m:= Byte Index for the data The value is shown as unsigned. The data area to be read can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case, the old value or initial value 0 is always read. Whether a data area is valid can be queried with the variables \$A_DP_IN_STATE[n] or \$A_DP_IN_VALID.							
index 1:		-					
index 2:		-					
unit:		-					
min.:		0		max.:		255	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stop	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				valuation:		Cross-channel	
block search		Not classified			link		Not classified
INT	\$A_DP_IN_VALID		PROFIBUS/PROFINET valid input data areas			reference:	
description:							
The variable \$A_DP_IN_VALID is used to read all valid input data areas of the PROFIBUS/PROFINET IO. The value is coded as a bit array. The assignment of the bits corresponds to the indices of the input data areas. The input data area is invalid if the input data area could not be logged on during power on or the communications with the PROFIBUS/PROFINET has been interrupted during normal operation. The status of an input data area can be queried with the variable \$A_DP_IN_STATE[n].							
unit:		-					
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stop	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				valuation:		Cross-channel	
block search		Not classified			link		Not classified

System data

INT	\$A_DP_IN_STATE [16]			PROFIBUS/PROFINET status of input data area	reference:	
description:						
The variable \$A_DP_IN_STATE[n] is used to read the status of the input data area.						
n:= Index for the input data area						
The following states can be read:						
0: Data area has not been configured						
1: Data area could not be activated yet						
2: Data area is available						
3: Data area is currently not available						
Whether an input data area is available can be queried with the variable \$A_DP_IN_VALID.						
Index 1:						
-						
unit:						
-						
min.: 0 max.: 3 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		Cross-channel
block search				link		Not classified
Not classified						Not classified
INT	\$A_DP_OUT_STATE [16]			PROFIBUS/PROFINET status of output data area	reference:	
description:						
The variable \$A_DP_OUT_STATE[n] is used to read the status of the output data area.						
n:= Index for the output data area						
The following states can be read:						
0: Data area has not been configured						
1: Data area could not be activated yet						
2: Data area is available						
3: Data area is currently not available						
Whether a data area is available can be queried with the variable \$A_DP_OUT_VALID.						
Index 1:						
-						
unit:						
-						
min.: 0 max.: 3 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		Cross-channel
block search				link		Not classified
Not classified						Not classified

INT	\$A_DP_OUT_VALID						PROFIBUS/PROFINET valid output data areas	reference:	
description:									
The variable \$A_DP_OUT_VALID_IN is used to read all valid output data areas of the PROFIBUS/PROFINET IO.									
The value is coded as a bit array. The assignment of the bits corresponds to the indices of the output data areas. The output data area is invalid if the output data area could not be logged on during power up or the communications with the PROFIBUS/PROFINET has been interrupted during normal operation. The status of an output data area can be queried with the variable \$A_DP_OUT_STATE[n].									
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				Cross-channel	
block search				Not classified				link	Not classified
INT	\$A_DP_IN_CONF						PROFIBUS/PROFINET configured input data areas	reference:	
description:									
The variable \$A_DP_IN_CONF is used to read all configured input data areas of the PROFIBUS/PROFINET IO. The value is coded as a bit field. The assignment of the bits corresponds to the indices of the input data areas. A configured input data area is present if a logical starting address has been entered in an input data area via machine data \$MN_DPIO_LOGIC_ADDRESS_IN. The status of an input data area can be queried with the variable \$A_DP_IN_STATE[n].									
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				Cross-channel	
block search				Not classified				link	Not classified
INT	\$A_DP_OUT_CONF						PROFIBUS/PROFINET configured output data areas	reference:	
description:									
The variable \$A_DP_OUT_CONF is used to read all configured output data areas of the PROFIBUS/PROFINET IO. The value is coded as a bit field. The assignment of the bits corresponds to the indices of the output data areas. A configured data area is present if a logical starting address has been entered in an output data area via machine data \$MN_DPIO_LOGIC_ADDRESS_OUT. The status of an output data area can be queried with the variable \$A_DP_OUT_STATE[n].									
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				Cross-channel	
block search				Not classified				link	Not classified

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INT	\$A_DP_IN_LENGTH [16]	PROFIBUS/PROFINET length of input data area	reference:			
description:						
The variable \$A_DP_IN_LENGTH[n] is used to read the length of the input data area. n:= Index for the input data area Whether an input data area is available can be queried with the variables \$A_DP_IN_VALID and \$A_DP_IN_STATE[n].						
Index 1:						
unit: -						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	Cross-channel
block search					link	Not classified
INT	\$A_DP_OUT_LENGTH [16]	PROFIBUS/PROFINET length of output data area	reference:			
description:						
The variable \$A_DP_OUT_LENGTH[n] is used to read the length of the output data area. n:= Index for the output data area Whether an output data area is available can be queried with the variables \$A_DP_OUT_VALID and \$A_DP_OUT_STATE[n].						
Index 1:						
unit: -						
min.: 0 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	Cross-channel
block search					link	Not classified
INT	\$A_DPW_IN [16,128]	PROFIBUS/PROFINET input word (unsigned)	reference:			
description:						
The field variable \$A_DPW_IN[n,m] is used to read a data word (16 bits) from PROFIBUS/PROFINET IO. n:= Index for the input data area m:= Byte Index for the data The value is shown as unsigned. The data area to be read can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case, the old value or initial value 0 is always read. Whether a data area is valid can be queried with the variables \$A_DP_IN_STATE[n] or \$A_DP_IN_VALID.						
Index 1:						
-						

Index 2:	-					
unit:	-					
min.:	0	max.:	65535	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	Cross-channel	
block search	Not classified			link	Not classified	
DOUBLE	\$A_DPR_OUT [16,128]			PROFIBUS/PROFINET output data (4 bytes)		reference:
description:						
The field variable \$A_DPR_OUT[n,m] is used to write output data (32 bits REAL) to PROFIBUS/PROFINET IO.						
n:= Index for the output data area						
m:= Byte Index for the data						
The value is compressed to 4 bytes IEEE (real).						
The data area to be written can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case the transfer of the value cannot be guaranteed.						
Whether a data area is valid can be queried with the variables \$A_DP_OUT_STATE[n] or \$A_DP_OUT_VALID.						
Index 1:	-					
Index 2:	-					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	runin stp	X	7	-	0	X
axis identifier:				Valuation:	Cross-channel	
block search	Not classified			link	Not classified	
INT	\$A_DPB_OUT [16,128]			PROFIBUS/PROFINET output byte (unsigned)		reference:
description:						
The field variable \$A_DPB_OUT[n,m] is used to write a data byte (8 bits) to PROFIBUS/PROFINET IO.						
n:= Index for the output data area						
m:= Byte Index for the data						
The value is shown as unsigned.						
The data area to be written can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case the transfer of the value cannot be guaranteed.						
Whether a data area is valid can be queried with the variables \$A_DP_OUT_STATE[n] or \$A_DP_OUT_VALID.						
Index 1:	-					

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Index 2:	-					
unit:	-					
min.:	0	max.:	255	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	runin stp	X	/	-	0	X
axis identifier:				Valuation:	Cross-channel	
block search	Not classified			link	Not classified	
INT	\$A_DPW_OUT [16,128]			PROFIBUS/PROFINET output word (unsigned)		reference:
description:						
The field variable \$A_DPW_OUT[n,m] is used to write a data word (16 bits) to PROFIBUS/PROFINET IO.						
n:= Index for the output data area						
m:= Byte Index for the data						
The value is shown as unsigned.						
The data area to be written can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case the transfer of the value cannot be guaranteed.						
Whether a data area is valid can be queried with the variables \$A_DP_OUT_STATE[n] or \$A_DP_OUT_VALID.						
Index 1:	-					
Index 2:	-					
unit:	-					
min.:	0	max.:	65535	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	runin stp	X	/	-	0	X
axis identifier:				Valuation:	Cross-channel	
block search	Not classified			link	Not classified	
DOUBLE	\$A_DPR_IN [16,128]			PROFIBUS/PROFINET input data (4 bytes)		reference:
description:						
The field variable \$A_DPR_IN[n,m] is used to read input data (32 bits REAL) from PROFIBUS/PROFINET IO.						
n:= Index for the input data area						
m:= Byte Index for the data						
The value is expanded to 8 bytes IEEE (double).						
The data area to be read can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case, the old value or initial value 0.0 is always read.						
Whether a data area is valid can be queried with the variables \$A_DP_IN_STATE[n] or \$A_DP_IN_VALID.						
Index 1:	-					

Index 2:		-					
unit:		-					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		Cross-channel	
block search		Not classified		link		Not classified	
INT	\$A_DPSW_IN [16,128]			PROFIBUS/PROFINET input word (signed)		reference:	
description:							
The field variable \$A_DPSW_IN[n,m] is used to read a data word (16 bits) from PROFIBUS/PROFINET IO.							
n:= Index for the input data area							
m:= Byte Index for the data							
The value is shown as signed.							
The data area to be read can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case, the old value or initial value 0 is always read.							
Whether a data area is valid can be queried with the variables \$A_DP_IN_STATE[n] or \$A_DP_IN_VALID.							
Index 1:		-					
Index 2:		-					
unit:		-					
min.:		-32768		max.:		32767	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		Cross-channel	
block search		Not classified		link		Not classified	
INT	\$A_DPSD_IN [16,128]			PROFIBUS/PROFINET input data double word DBD (signed)		reference:	
description:							
The field variable \$A_DPSD_IN[n,m] is used to read a data double word (32 bits) from PROFIBUS/PROFINET IO.							
n:= Index for the input data area							
m:= Byte Index for the data							
The value is shown as signed.							
The data area to be read can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case, the old value or initial value 0 is always read.							
Whether a data area is valid can be queried with the variables \$A_DP_IN_STATE[n] or \$A_DP_IN_VALID.							
Index 1:		-					

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Index 2:	-						
unit:	-						
min.:	-2147483648		max.:	2147483647		std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		Cross-channel	
block search	Not classified			link		Not classified	
INT	\$A_DPSB_OUT [16,128]			PROFIBUS/PROFINET output byte (signed)		reference:	
description:							
The field variable \$A_DPSB_IN[n,m] is used to write a data byte (8 bits) to PROFIBUS/PROFINET IO.							
n:= Index for the output data area							
m:= Byte Index for the data							
The value is shown as signed.							
The data area to be written can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case the transfer of the value cannot be guaranteed.							
Whether a data area is valid can be queried with the variables \$A_DP_OUT_STATE[n] or \$A_DP_OUT_VALID.							
Index 1:	-						
Index 2:	-						
unit:	-						
min.:	-128		max.:	127		std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	7	X	7	X	
write:	runin stop	X	7	-	0	X	
axis identifier:				Valuation:		Cross-channel	
block search	Not classified			link		Not classified	
INT	\$A_DPSW_OUT [16,128]			PROFIBUS/PROFINET output word (signed)		reference:	
description:							
The field variable \$A_DPSW_IN[n,m] is used to write a data word (16 bits) to PROFIBUS/PROFINET IO.							
n:= Index for the output data area							
m:= Byte Index for the data							
The value is shown as signed.							
The data area to be written can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case the transfer of the value cannot be guaranteed.							
Whether a data area is valid can be queried with the variables \$A_DP_OUT_STATE[n] or \$A_DP_OUT_VALID.							
Index 1:	-						

Index 2:								-	
unit:								-	
min.:		-32768		max.:		32767		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	runin stp	X	7	-	0	X			
axis identifier:				Valuation:				Cross-channel	
block search				Not classified				link	Not classified
INT	\$A_DPSPD_OUT [16,128]			PROFIBUS/PROFINET output data double word (signed)			reference:		
description:									
The field variable \$A_DPSPD_OUT[n,m] is used to write a data double word (32 bits) to PROFIBUS/PROFINET IO.									
n:= Index for the output data area									
m:= Byte Index for the data									
The value is shown as signed.									
The data area to be written can become invalid during power up or even during operation as connected devices may not yet have been detected or are already no longer connected to the PROFIBUS/PROFINET. In this case the transfer of the value cannot be guaranteed.									
Whether a data area is valid can be queried with the variables \$A_DP_OUT_STATE[n] or \$A_DP_OUT_VALID.									
Index 1:								-	
Index 2:								-	
unit:								-	
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	runin stp	X	7	-	0	X			
axis identifier:				Valuation:				Cross-channel	
block search				Not classified				link	Not classified
DOUBLE	\$AN_COLL_MEM_AVAILABLE			Memory available for collision monitoring in KB			reference:		
description:									
Collision calculation requires internal memory. The amount required is either calculated automatically from the number of available protection areas, protection area elements, facets and the number of machine axes, or it can be explicitly defined by machine data \$MN_MM_MAXNUM_3D_COLLISION.									
The size of the reserved memory area can be read in kbytes with the system variable \$AN_COLL_MEM_AVAILABLE.									
unit:								-	
min.:		0		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				Not classified				link	No restrictions

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DOUBLE	\$AN_COLL_MEM_USE_MIN			Minimum memory requirement for collision monitoring	reference:	
description:						
Collision calculation requires internal memory. The amount required is either calculated automatically from the number of available protection areas, protection area elements, facets and the number of machine axes, or it can be explicitly defined by machine data \$MN_MM_MAXNUM_3D_COLLISION.						
The size of the reserved memory area can be read in kbytes with the system variable \$AN_COLL_MEM_AVAILABLE.						
The system variable \$AN_COLL_MEM_USE_MIN returns the minimum memory space required for collision calculation as a percentage of the reserved memory area.						
It can be reset by writing it to the value 0. Each attempt to write a value other than 0 is rejected with an error message.						
unit:						
-						
min.:		0		max.:		100.
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

DOUBLE	\$AN_COLL_MEM_USE_MAX			Maximum memory requirement for collision monitoring in percent	reference:	
description:						
Collision calculation requires internal memory. The amount required is either calculated automatically from the number of available protection areas, protection area elements, facets and the number of machine axes, or it can be explicitly defined by machine data \$MN_MM_MAXNUM_3D_COLLISION.						
The size of the reserved memory area can be read in kbytes with the system variable \$AN_COLL_MEM_AVAILABLE.						
The system variable \$AN_COLL_MEM_USE_MAX returns the minimum memory space required for collision calculation as a percentage of the reserved memory area.						
It can be reset by writing it to the value 0. Each attempt to write a value other than 0 is rejected with an error message.						
unit:						
-						
min.:		0		max.:		100
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		No restrictions

DOUBLE	\$AN_COLL_MEM_USE_ACT		Current memory requirement for collision monitoring			reference:	
description:							
Collision calculation requires internal memory. The amount required is either calculated automatically from the number of available protection areas, protection area elements, facets and the number of machine axes, or it can be explicitly defined by machine data \$MN_MM_MAXNUM_3D_COLLISION.							
The size of the reserved memory area can be read in kbytes with the system variable \$AN_COLL_MEM_AVAILABLE.							
The system variable \$AN_COLL_MEM_USE_ACT returns the memory space currently required for collision calculation (that is for the last calculation) as a percentage of the reserved memory area.							
It can be reset by writing it to the value 0. Each attempt to write a value other than 0 is rejected with an error message.							
unit:							
min.: 0 max.: 100. std: 0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	X	X	7	X	7	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	No restrictions	
DOUBLE	\$AN_PREP_ACT_LOAD		Current preprocessing runtime			reference:	
description:							
\$AN_PREP_ACT_LOAD returns the current net preprocessing runtime across all channels.							
unit:							
min.: -1,8E308 max.: 1,8E308 std: 0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	
DOUBLE	\$AN_PREP_MAX_LOAD		Longest preprocessing runtime			reference:	
description:							
\$AN_PREP_MAX_LOAD returns the longest net preprocessing runtime across all channels.							
unit:							
min.: -1,8E308 max.: 1,8E308 std: 0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	X	X	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link	Not classified	

System data

DOUBLE	\$AN_PREP_MIN_LOAD		Shortest preprocessing runtime			reference:	
description:							
\$AN_PREP_MIN_LOAD returns the shortest net preprocessing runtime across all channels.							
unit:							
min.:		1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	X	X	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AN_PREP_ACT_LOAD_GROSS		Current preprocessing runtime			reference:	
description:							
\$AN_PREP_ACT_LOAD_GROSS returns the current gross preprocessing runtime across all channels.							
unit:							
min.:		1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AN_PREP_MAX_LOAD_GROSS		Longest preprocessing runtime			reference:	
description:							
\$AN_PREP_MAX_LOAD_GROSS returns the longest gross preprocessing runtime across all channels.							
unit:							
min.:		1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	X	X	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AN_PREP_MIN_LOAD_GROSS		Shortest preprocessing runtime			reference:	
description:							
\$AN_PREP_MIN_LOAD_GROSS returns the shortest gross preprocessing runtime across all channels.							
unit:							
min.:		1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	-	
write:	X	X	7	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified

INT	\$AN_AUXFU_LIST_GROUPINDEX [MD_MAXNUM_AUXFU_LIST_INDEX]						Global list of auxiliary functions - group index	reference:	
description: The array variable \$AN_AUXFU_LIST_GROUPINDEX[n] is used to read the group index of the auxiliary function collected in the channel. The variable is only valid in conjunction with search run type 5 (SERUPRO). After the search target has been found, the auxiliary functions collected in groups in the individual channels in accordance with \$AC_AUXFU_TICK[n] are entered in the cross-channel list with channel number \$AN_AUXFU_LIST_CHANNO[n] and group index. The auxiliary functions collected in the channel can be accessed by the group index.									
Index 1: index = 0 .. MD_MAXNUM_AUXFU_LIST_INDEX									
unit: -									
min.: -1 max.: MD_MAXNUM_AUXFU_GROUPS - 1 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	3	X	3	X			
write:	runin stp	X	3	X	3	X			
axis identifier:									
						Valuation:	channel-specific		
block search		Not classified			link	Not classified			
INT	\$AN_AUXFU_LIST_CHANNO [MD_MAXNUM_AUXFU_LIST_INDEX]						Global list of auxiliary functions - channel number	reference:	
description: The array variable \$AN_AUXFU_LIST_CHANNO[n] is used to read the channel number of the auxiliary function collected in the channel. The variable is only valid in conjunction with search run type 5 (SERUPRO). After the search target has been found, the auxiliary functions collected in groups in the individual channels in accordance with \$AC_AUXFU_TICK[n] are entered in the cross-channel list with channel number and group index \$AN_AUXFU_LIST_GROUPINDEX[n].									
Index 1: index = 0 .. MD_MAXNUM_AUXFU_LIST_INDEX									
unit: -									
min.: -1 max.: 10 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	3	X	3	X			
write:	runin stp	X	3	X	3	X			
axis identifier:									
						Valuation:	channel-specific		
block search		Not classified			link	Not classified			

System data

INT	\$AN_AUXFU_LIST_ENDINDEX		Last valid index of the global auxiliary function list		reference:	
description:						
The variable \$AN_AUXFU_LIST_ENDINDEX determines the last valid index for the global auxiliary function list.						
unit:						
-						
min.:		-1		max.:		MD_MAXNUM_AUXFU_LIST_INDEX
std:		0				
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search			Not classified			
link			Not classified			
INT	\$AN_AXCTSWE [31]		Axis container rotation slot enabled		reference:	
description:						
Is the rotation enabled for a slot of an axis container?						
Bit mask, every bit corresponds to a slot, e.g. 0x5 corresponds to the slots 1 and 3.						
Bit == 1: the slot of an axis container is enabled for rotation.						
Bit == 0: the slot of an axis container is not enabled for rotation.						
Example: Axis container with 4 slots: whenever (\$AN_AXCTSWE[ct1] and 'Hfff') == 'Hfff5' do DO M99.						
As soon as a slot has been enabled for the axis container rotation, bit == 1 is recorded for unused slots. In the example 'Hfff0'.						
If the slots of an axis container are distributed over several NCUs, the current status of the slots is only displayed on the other NCUs, if all slots for the axis container rotation have been enabled on the other NCU. In the case of a direct axis container rotation (AXCTSED), nothing is displayed.						
Notice: The most significant bit is not a sign bit, but stands for the 32nd slot of an axis container. Therefore do not check variables with >0 but to != 0 in order to establish whether a slot has actually been enabled for rotation purposes.						
Index 1:						
-						
unit:						
-						
min.:		0		max.:		0xffffffff
std:		0				
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search			Not classified			
link			No restrictions			

INT	\$AN_LAI_AX_IS_AXCTAX		Bit mask shows whether an LAI axis is an axis in an axis container			reference:	
description:							
Bit mask shows whether an axis in the logical NCK machine axis image (machine data 10002 \$MN_AXCONF_LOGIC_MACHAX_TAB) is an axis in an axis container (machine data 1270x/1271x \$MN_AXCT_AXCONF_ASSIGN_TABI).							
unit:							
min.:		0		max.:		0x/ffffff	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$AN_LAI_AX_IS_LINKAX		Bit mask shows whether an LAI axis is a link axis.			reference:	
description:							
Bit mask shows whether an axis in the logical NCK machine axis image (machine data 10002 \$MN_AXCONF_LOGIC_MACHAX_TAB) is a link axis (axis physically connected to another NCU).							
unit:							
min.:		0		max.:		0x/ffffff	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$AN_LAI_AX_IS_LEADLINKAX		Bit mask shows whether an LAI axis is a leading link axis.			reference:	
description:							
Bit mask shows whether an axis in the logical NCK machine axis image (machine data 10002 \$MN_AXCONF_LOGIC_MACHAX_TAB) is a leading link axis, i.e. several NCUs refer to the same machine axis through MD10002 \$MN_AXCONF_LOGIC_MACHAX_TAB and the axial MD30554 \$MA_AXCONF_ASSIGN_MASTER_NCU is used to establish which NCU is the master NCU, which creates the setpoint values for the position controller following booting.							
unit:							
min.:		0		max.:		0x/ffffff	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not for lead link axes

System data

INT	\$AN_LAI_AX_TO_MACHAX [31]		Assignment of the physical axis to an LAI axis.		reference:	
description:						
The NCU and machine axis are recorded for an LAI axis, this illustrates the physical image of the axis. In this case, the NCU Id is reported from the 10000 location, e.g. 20005: NCU 2 axis 5. Without NCU link, i.e. if there is only one NCU, then only the number of the machine axis is reported. In this case, the NCU Id equals zero. If the LAI axis is not used, 0 is returned.						
index 1:		maximum axis number in logical machine image				
unit:						
min.:		0	max.:		0x/ffffff	std:
						0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			valuation:			
			channel-specific			
block search		Not classified			link	
					No restrictions	
INT	\$AN_LAI_AX_TO_IPO_NC_CHANAX [31]		Assignment of an LAI axis to the interpolator (NCU or channel, channel axis).		reference:	
description:						
If the LAI axis is currently interpolated on this NCU, the channel and the channel axis number are reported in such a way, which defines the interpolator of the axis. In this case, the channel is recorded from the hundred place and the channel axis number is recorded from the unit place, e.g. 1005 - channel 10 channel axis 5. These values are always lower than 10000.						
If the LAI axis is currently interpolated on another NCU, the NCU Identifier of the interpolating NCU and the global axis number of the machine axis is recorded. In this case, the NCU is recorded from the 10000 place, e.g. 20203: NCU 2 and the global axis number is 203. This global axis number can be used to determine the interpolating channel and the channel axis number on the other NCU with NCU Id 2, with \$AN_IPO_CHANAX[203].						
If the LAI axis is not used, 0 is returned.						
index 1:		Maximum axis number in logical machine image.				
unit:						
min.:		0	max.:		0x/ffffff	std:
						0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			valuation:			
			channel-specific			
block search		Not classified			link	
					No restrictions	

INT	\$AN_IPO_CHANAX [n]		Assignment of the global axis to the interpolator (channel, channel axis).		reference:	
description:						
For a global axis number, such as the one reported by \$VA_IPO_NC_CHANAX, the channel and channel axis number are reported, which define the writing interpolator of the axis. In this case, the channel is reported from the hundred place and the channel axis number from the unit place e.g. 1005 ? channel 10 channel axis 5.						
If the axis is not used on this NCU with the specified global axis number, 0 is returned.						
Index 1:		Global axisnumber, as returned from \$VA_IPO_NC_CHANAX.				
unit:		-				
min.:		0	max.:		0x/ffffff	std:
						0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		No restrictions

1.26 Axial system variables

DOUBLE	\$P_EP [31]		Programmed end position		reference:	
description:						
\$P_EP[X]						
System variable \$P_EP supplies the current WCS setpoint position in the interpreter. The numerical value is not necessarily identical to the value programmed in the part program. The two values differ in the following situations:						
- with incremental programming						
- when the WCS is changed by a frame or tool selection						
If an ASUB is started after a block search with calculation, the positions in the interpreter are synchronized with this operation. \$P_EP then supplies						
the actual standstill positions of the axes in the Asub. The collected search position can be interrogated via system variable \$AC_RETPOINT.						
Index 1:		-				
unit:		Linear / angular position				
min.:		-1,8E308	max.:		1,8E308	std:
						0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		Not classified

Axial system variables

DOUBLE	\$P_EPM [31]		Programmed MCS target position		reference:	
description:						
Axial variable \$P_EPM[ax] determines the current programmed MCS target position in the preprocessor for the specified axis (see also \$P_EP).						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:			Valuation:		channel-specific	
block search		Not classified		link		Not classified
DOUBLE	\$P_APR [31]		Axis position in the starting point with SAR in the WCS		reference:	
description:						
\$P_APR[X] Position of axis in workpiece coordinate system at starting point of approach movement on smooth approach to the contour						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:			Valuation:		channel-specific	
block search		Not classified		link		Not classified
DOUBLE	\$P_AEP [31]		1st contour point with SAR in the WCS		reference:	
description:						
\$P_AEP[X] Approach point: First contour point in workpiece coordinate system on smooth approach to contour						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:			Valuation:		channel-specific	
block search		Not classified		link		Not classified

DOUBLE	\$P_POLF [31]						Programmed retraction position of the axis	reference:	
description:									
\$P_POLF[X] supplies the programmed retraction position of the axis									
X: Axis									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
INT	\$P_POLF_VALID [31]						Status of the value of \$P_POLF	reference:	
description:									
\$P_POLF_VALID[X] Supplies the status of \$P_POLF[X]									
X: Axis									
Return values:									
0: No retraction programmed									
1: Retraction programmed Position programmed									
2: Retraction programmed as distance									
Index 1:									
unit: -									
min.: 0 max.: 2 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
DOUBLE	\$AA_IW [31]						Current WCS setpoint of an axis	reference:	
description:									
Axial variable \$AA_IW[ax] determines the current setpoint in the workpiece coordinate system (WCS) for the specified axis. The setpoint is equivalent to the interpolator output value for the current interpolation cycle. The WCS value contains no axial offset components (DRF, AA_OFF, ext. work offset, etc.).									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		

Axial system variables

BOOL	\$AA_REPOS_DELAY [31]						reference:	
description:								
\$AA_REPOS_DELAY[X]								
TRUE: Repos suppression is currently active for this axis.								
FALSE: otherwise								
Index 1:								
-								
unit:								
-								
min.:		TRUE		max.:		FALSE		
				std:		FALSE		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Program sensitive				Not for lead link axes				
DOUBLE	\$AA_IEN [31]						reference:	
Current SZS setpoint of an axis								
description:								
Axial variable \$AA_IEN[ax] determines the current setpoint in the settable zero coordinate system (SZS) for the specified axis. See also \$AA_IW[ax]. The SZS value contains no axial offset components (DRF, AA_OFF, ext. work offset, etc.).								
Index 1:								
-								
unit:								
Linear / angular position								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Not classified				Not classified				
DOUBLE	\$AA_IBN [31]						reference:	
Current BZS setpoint of an axis								
description:								
Axial variable \$AA_IBN[ax] determines the current setpoint in the basic zero coordinate system (BZS) for the specified axis. See also \$AA_IW[ax]. The BZS value contains no axial offset components (DRF, \$AA_OFF, ext. work offset, etc.).								
Index 1:								
-								
unit:								
Linear / angular position								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Not classified				Not classified				

Axial system variables

DOUBLE	\$AA_IB [31]		Current BCS setpoint of an axis			reference:	
description:							
Axial variable \$AA_IB[ax] determines the current setpoint in the basic coordinate system (BCS) for the specified axis. See also \$AA_IW[ax]. The BCS value contains no axial offset components (DRF, \$AA_OFF, ext. work offset, etc.).							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
block search				channel-specific			
Not classified				link			
				Not classified			
DOUBLE	\$AA_ENC_AMPL [n,31]		Gain factor for closed-loop amplitude control			reference:	
description:							
Available only for SIMODRIVE 611D:							
\$AA_ENC_AMPL[n,ax] supplies the percentage gain factor of the amplitude control for diagnostic and monitoring purposes. The standard encoder voltage is 1V = 100%, the gain can fluctuate between 0.5V and 1.3V schwanken.							
The meaning of the indices are as follows:							
n: Encoder number							
ax: Machine axis							
Index 1:							
n: Encoder number							
Index 2:							
unit: -							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	-	0	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
block search				channel-specific			
Not classified				link			
				No restrictions			
DOUBLE	\$AA_IM [31]		Current MCS setpoint of an axis			reference:	
description:							
Axial variable \$AA_IM[ax] determines the current setpoint in the machine coordinate system (MCS) for the specified axis. See also \$AA_IW[ax]. The MCS value contains all axial offset components (DRF, \$AA_OFF, ext. work offset, etc.).							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
block search				channel-specific			
Program sensitive				link			
				Not classified			

Axial system variables

INT	\$AA_ACT_INDEX_AX_POS_NO [31]	Current indexing position					reference:	
description:								
\$AA_ACT_INDEX_AX_POS_NO[X]								
0: Not an indexing axis, no indexing position is thus available.								
> 0: Number of last reached or last crossed indexing position								
Index 1:								
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
block search				Not classified				
link				Not classified				
INT	\$AA_PROG_INDEX_AX_POS_NO [31]	Programmed indexing position					reference:	
description:								
\$AA_PROG_INDEX_AX_POS_NO[X]								
0: Not an indexing axis, no indexing position is thus available or the indexing axis is not currently approaching an indexing position								
> 0: Number of programmed indexing position								
Index 1:								
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
block search				Not classified				
link				Not classified				
BOOL	\$AA_ENC_ACTIVE [31]	Measuring system is active					reference:	
description:								
Axial variable \$AA_ENC_ACTIVE[ax] determines whether the active measuring system is operating below the encoder limit frequency.								
Index 1:								
unit:								
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
block search				Not classified				
link				Not classified				

BOOL	\$AA_ENC1_ACTIVE [31]		1. Measuring system is active		reference:	
description:						
Axial variable \$AA_ENC1_ACTIVE[ax] determines whether the first measuring system is operating below the encoder limit frequency.						
Index 1:						
unit:						
min.:		FALSE	max.:		TRUE	std:
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	-	0	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search		Not classified		link		Not classified
BOOL	\$AA_ENC2_ACTIVE [31]		2. Measuring system is active		reference:	
description:						
Axial variable \$AA_ENC2_ACTIVE[ax] determines whether the second measuring system is operating below the encoder limit frequency.						
Index 1:						
unit:						
min.:		FALSE	max.:		TRUE	std:
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	-	0	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search		Not classified		link		Not classified
DOUBLE	\$VA_IM [31]		Current MCS actual value of an axis		reference:	
description:						
Axial variable \$VA_IM[ax] determines the encoder actual value (measured by active measuring system) in the machine coordinate system (MCS). All actual value compensations are corrected (leadscrew error compensation, backlash compensation, quadrant error compensation).						
When a spindle or axis disable is active, this variable returns the current setpoint by definition. If it is preferred to return the actual value in this situation, BIT3 in \$MA_MISC_FUNCTION_MASK must be set.						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308	max.:		1,8E308	std: 0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search		Not classified		link		Not classified

Axial system variables

DOUBLE	\$VA_IM1 [31]						Current MCS actual value of an axis	reference:	
description:									
Axial variable \$VA_IM1[ax] determines the encoder actual value (measured by encoder 1) in the machine coordinate system (MCS). All actual value compensations are corrected (leadscrew error compensation, backlash compensation, quadrant error compensation).									
When a spindle or axis disable is active, this variable returns the current setpoint by definition. If it is preferred to return the actual value in this situation, BIT3 in \$MA_MISC_FUNCTION_MASK must be set.									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		
DOUBLE	\$VA_IM2 [31]						Current MCS actual value of an axis	reference:	
description:									
Axial variable \$VA_IM2[ax] determines the encoder actual value (measured by encoder 2) in the machine coordinate system (MCS). All actual value compensations are corrected (leadscrew error compensation, backlash compensation, quadrant error compensation).									
When a spindle or axis disable is active, this variable returns the current setpoint by definition. If it is preferred to return the actual value in this situation, BIT3 in \$MA_MISC_FUNCTION_MASK must be set.									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		
DOUBLE	\$VA_LAG_ERROR [31]						Axis following error	reference:	
description:									
Variable \$VA_LAG_ERROR[X] supplies the contour-related following error, i.e. position setpoint after fine interpolator actual position value.									
Index 1:									
unit:									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		

DOUBLE	\$AA_MW [31]		Measured probe position (WCS)			reference:	
description:							
\$AA_MW[X]							
Probe measured value in workpiece coordinate system							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AA_MM [31]		Measured probe position (MCS)			reference:	
description:							
\$AA_MM[X]							
Probe measured value in machine coordinate system							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
DOUBLE	\$AA_MW1 [31]		Probe position trigger 1 (WCS)			reference:	
description:							
\$AA_MW1[X]							
Measurement result axial measurement							
Trigger event 1 in WCS							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified

Axial system variables

DOUBLE	\$AA_MW2 [31]		Probe position trigger 2 (WCS)			reference:	
description:							
\$AA_MW2[X]							
Measurement result axial measurement							
Trigger event 2 in WCS							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AA_MW3 [31]		Probe position trigger 3 (WCS)			reference:	
description:							
\$AA_MW3[X]							
Measurement result axial measurement							
Trigger event 3 in WCS							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AA_MW4 [31]		Probe position trigger 4 (WCS)			reference:	
description:							
\$AA_MW4[X]							
Measurement result axial measurement							
Trigger event 4 in WCS							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			

DOUBLE	\$AA_MM1 [31]		Probe position trigger 1 (MCS)			reference:	
description:							
\$AA_MM1[X]							
Measurement result axial measurement							
Trigger event 1 in MCS							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation: channel-specific			
block search Not classified				link Not classified			
DOUBLE	\$AA_MM2 [31]		Probe position trigger 2 (MCS)			reference:	
description:							
\$AA_MM2[X]							
Measurement result axial measurement							
Trigger event 2 in MCS							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation: channel-specific			
block search Not classified				link Not classified			
DOUBLE	\$AA_MM3 [31]		Probe position trigger 3 (MCS)			reference:	
description:							
\$AA_MM3[X]							
Measurement result axial measurement							
Trigger event 3 in MCS							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation: channel-specific			
block search Not classified				link Not classified			

Axial system variables

DOUBLE	\$AA_MM4 [31]						Probe position trigger 4 (MCS)	reference:	
description:									
\$AA_MM4[X] Measurement result axial measurement Trigger event 4 in MCS									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308			max.: 1,8E308			std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	runin stp	X	/	X	/	X			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
BOOL	\$AA_MEAAct [31]						Axial measurement active	reference:	
description:									
\$AA_MEAAct[X] Value is exactly then TRUE if axial measurement active for X Corresponds with NC/PLC interface signal DB31, ... DBX62.3 (measurement active)									
Index 1:									
unit: -									
min.: FALSE			max.: TRUE			std:		FALSE	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	-	0	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
DOUBLE	\$AC_DRF [31]						Handwheel override of an axis	reference:	
description:									
Axial variable \$AC_DRF[ax] determines the axial override value caused by the handwheel (DRF offset).									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308			max.: 1,8E308			std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		

DOUBLE	\$AC_PRESET [31]		PRESET value of an axis			reference:	
description:							
Axial variable \$AC_PRESET[ax] determines the last defined PRESET value.							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	/	X	/	X	
write:	-	-	0	X	/	-	
axis identifier:				Valuation: channel-specific			
block search				Not classified			
link				Not classified			
DOUBLE	\$AA_ETRANS [31]		External zero offset			reference:	
description:							
Axial variable \$AA_ETRANS[ax] is used to enter an external work offset which can be activated by the PLC. After activation by the PLC, the offset value is traversed as an axial override in the next block.							
If Bit 1 is set in \$MC_MM_SYSTEM_FRAME_MASK, an active movement is stopped immediately, on activation by the PLC, the preprocessor is reorganized, and the system frame is initialized with the axis value of \$AA_ETRANS[ax] and is activated. The offset is traversed before resuming the interrupted movement. The external work offset has an absolute effect on the translation of the current system frame. Multiple activation is thus not additive; only the coarse component of the translation (not the fine offset) is overwritten with the value from \$AA_ETRANS[ax].							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation: channel-specific			
block search				Not classified			
link				Not classified			
INT	\$AA_MEAS_P1_VALID [31]		Unlatch 1st measuring point of an axis			reference:	
description:							
Variable for workpiece and tool measurement.							
Axial variable \$AA_MEAS_P1_VALID[ax] is used to unlatch the current axis position with reference to a selected coordinate system. Variable \$AC_MEAS_P1_COORD is used to select the coordinate system.							
Application:							
\$AA_MEAS_P1_VALID[ax] = 0 ; 1st measuring point of axis is invalid							
\$AA_MEAS_P1_VALID[ax] = 1 ; Determining 1st measuring point of axis							
The unlatched measuring point is stored in \$AA_MEAS_POINT1[ax].							

Axial system variables

Index 1:							
unit:							
min.:		0		max.:		1	
std:				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		Not classified	
INT	\$AA_MEAS_P2_VALID [31]			Unlatch 2nd measuring point of an axis			reference:
description:							
Variable for workpiece and tool measurement.							
Axial variable \$AA_MEAS_P2_VALID[ax] is used to unlatch the current axis position with reference to a selected coordinate system. Variable \$AC_MEAS_P2_COORD is used to select the coordinate system.							
Application:							
\$AA_MEAS_P2_VALID[ax] = 0 ; 2nd measuring point of axis is invalid							
\$AA_MEAS_P2_VALID[ax] = 1 ; Determining 2nd measuring point of axis							
The unlatched measuring point is stored in \$AA_MEAS_POINT2[ax].							
Index 1:							
unit:							
min.:		0		max.:		1	
std:				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		Not classified	
INT	\$AA_MEAS_P3_VALID [31]			Unlatch 3rd measuring point of an axis			reference:
description:							
Variable for workpiece and tool measurement.							
Axial variable \$AA_MEAS_P3_VALID[ax] is used to unlatch the current axis position with reference to a selected coordinate system. Variable \$AC_MEAS_P3_COORD is used to select the coordinate system.							
Application:							
\$AA_MEAS_P3_VALID[ax] = 0 ; 3rd measuring point of axis is invalid							
\$AA_MEAS_P3_VALID[ax] = 1 ; Determining 3rd measuring point of axis							
The unlatched measuring point is stored in \$AA_MEAS_POINT3[ax].							
Index 1:							
unit:							
min.:		0		max.:		1	
std:				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	runin stp	X	/	X	/	X	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		Not classified	

INT	\$AA_MEAS_P4_VALID [31]		Unlatch 4th measuring point of an axis		reference:	
description:						
Variable for workpiece and tool measurement.						
Axial variable \$AA_MEAS_P4_VALID[ax] is used to unlatch the current axis position with reference to a selected coordinate system. Variable \$AC_MEAS_P4_COORD is used to select the coordinate system.						
Application:						
\$AA_MEAS_P4_VALID[ax] = 0 ; 4th measuring point of axis is invalid						
\$AA_MEAS_P4_VALID[ax] = 1 ; Determining 4th measuring point of axis						
The unlatched measuring point is stored in \$AA_MEAS_POINT4[ax].						
Index 1:						
unit:						
min.: 0 max.: 1 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	run in stp	X	/	X	/	X
axis identifier:			Valuation: channel-specific			
block search		Not classified		link		Not classified
DOUBLE	\$AA_MEAS_POINT1 [31]		1. measuring point		reference:	
description:						
Variable for workpiece and tool measurement.						
Axial variable \$AA_MEAS_POINT1[ax] is used to write the 1st measuring point for workpiece and tool measurement. The measuring point can be either written directly or unlatched with variables \$AC_MEAS_LATCH[0], \$AA_MEAS_P1_VALID[ax].						
Application:						
\$AA_MEAS_POINT1[x] = \$AA_IW[x]						
\$AA_MEAS_POINT1[y] = \$AA_IW[y]						
\$AA_MEAS_POINT1[z] = \$AA_IW[z]						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:			Valuation: channel-specific			
block search		Not classified		link		Not classified

Axial system variables

DOUBLE	\$AA_MEAS_POINT2 [31]	2. measuring point	reference:			
description:						
Variable for workpiece and tool measurement.						
Axial variable \$AA_MEAS_POINT2[ax] is used to write the 2nd measuring point for workpiece and tool measurement. The measuring point can be either written directly or unlatched with variables \$AC_MEAS_LATCH[1], \$AA_MEAS_P2_VALID[ax].						
Application:						
\$AA_MEAS_POINT2[x] = \$AA_IW[x]						
\$AA_MEAS_POINT2[y] = \$AA_IW[y]						
\$AA_MEAS_POINT2[z] = \$AA_IW[z]						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:						
Valuation: channel-specific						
block search Not classified link Not classified						
DOUBLE	\$AA_MEAS_POINT3 [31]	3. measuring point	reference:			
description:						
Variable for workpiece and tool measurement.						
Axial variable \$AA_MEAS_POINT3[ax] is used to write the 3rd measuring point for workpiece and tool measurement. The measuring point can be either written directly or unlatched with variables \$AC_MEAS_LATCH[2], \$AA_MEAS_P3_VALID[ax].						
Application:						
\$AA_MEAS_POINT3[x] = \$AA_IW[x]						
\$AA_MEAS_POINT3[y] = \$AA_IW[y]						
\$AA_MEAS_POINT3[z] = \$AA_IW[z]						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:						
Valuation: channel-specific						
block search Not classified link Not classified						

DOUBLE	\$AA_MEAS_POINT4 [31]	4. measuring point	reference:			
description:						
Variable for workpiece and tool measurement.						
Axial variable \$AA_MEAS_POINT4[ax] is used to write the 4th measuring point for workpiece and tool measurement. The measuring point can be either written directly or unlatched with variables \$AC_MEAS_LATCH[3], \$AA_MEAS_P4_VALID[ax].						
Application:						
\$AA_MEAS_POINT4[x] = \$AA_IW[x]						
\$AA_MEAS_POINT4[y] = \$AA_IW[y]						
\$AA_MEAS_POINT4[z] = \$AA_IW[z]						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:			Valuation:			channel-specific
block search			link			Not classified
INT	\$AA_MEAS_SP_VALID [31]	validity of position setpoint	reference:			
description:						
Variable for workpiece and tool measurement.						
Axial variable \$AA_MEAS_SP_VALID[ax] is used to set the defined setpoint of an axis to valid or invalid.						
Application:						
\$AA_MEAS_SP_VALID[ax] = 0 ; Position setpoint of axis is invalid						
\$AA_MEAS_SP_VALID[ax] = 1 ; Position setpoint of axis is valid						
The position setpoint is stored in \$AA_MEAS_SETPOINT[ax]						
Index 1:						
unit: -						
min.: 0 max.: 1 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:			Valuation:			channel-specific
block search			link			Not classified

Axial system variables

DOUBLE	\$AA_MEAS_SETPOINT [31]			Position setpoint of an axis	reference:	
description:						
Variable for workpiece and tool measurement.						
Axial variable \$AA_MEAS_SETPOINT[ax] is used to define a position setpoint for an axis. This position setpoint is considered when calculating the workpiece position or the tool length.						
Application:						
\$AA_MEAS_SETPOINT[x] = 0.0						
\$AA_MEAS_SETPOINT[y] = 0.0						
\$AA_MEAS_SETPOINT[z] = 0.0						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	Not classified
DOUBLE	\$AA_MEAS_SETANGLE [31]			Angle setpoint of an axis	reference:	
description:						
Variable for workpiece and tool measurement.						
Axial variable \$AA_MEAS_SETANGLE[ax] is used to define an angle setpoint for an axis. This angle setpoint is considered when calculating the workpiece position or the tool length.						
Application:						
\$AA_MEAS_SETANGLE[x] = 0.0						
\$AA_MEAS_SETANGLE[y] = 0.0						
\$AA_MEAS_SETANGLE[z] = 0.0						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link	Not classified

DOUBLE	\$AA_OFF [31]						Overlaid movement of an axis	reference:	
description:									
Axial variable \$AA_OFF[ax] is used to overlay a movement for the programmed axis. The behavior of the overlaid movement can be configured with \$MA_AA_OFF_MODE.									
Index 1:									
unit: Linear / angular position									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	X			
write:	-	X	0	X	7	X			
axis identifier:						Valuation:	channel-specific		
block search		Not classified				link	Not classified		
INT	\$AA_OFF_LIMIT [31]						Limit value reached for axis offset	reference:	
description:									
Axial variable \$AA_OFF_LIMIT[ax] is used to interrogate a limit value for the axis offset \$AA_OFF[ax].									
The following values are possible:									
0:Limit value not reached									
1:Limit value reached in positive axis direction									
-1:Limit value reached in negative axis direction									
Index 1:									
unit: -									
min.:		-1		max.:		1		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:	channel-specific		
block search		Not classified				link	Not classified		
DOUBLE	\$AA_OFF_VAL [31]						Integrated path or axis offset	reference:	
description:									
Axial variable \$AA_OFF_VAL[ax] determines the integrated value of the overlaid movement for an axis.									
An overlaid movement can be canceled again by means of the negative value of this variable.									
e.g. \$AA_OFF[axis] = -\$AA_OFF_VAL[axis]									
Index 1:									
unit: -									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:	channel-specific		
block search		Not classified				link	Not classified		

Axial system variables

DOUBLE	\$AC_RETPOINT [31]		Repositioning point in Asub		reference:	
description:						
\$AC_RETPOINT[X]						
\$AC_RETPOINT[] supplies the WCS position of an axis at which an ASUB has been started. The axis can then be repositioned at this point in the Asub.						
If an Asub is started immediately after a block search with calculation, \$AC_RETPOINT then supplies the collected search position.						
For a modulo axis \$AC_RETPOINT[] supplies the position as modulo converted.						
System variable \$AC_RPVALID[] can be used to check whether \$AC_RETPOINT[] is supplying a valid repositioning point within the current program context (see documentation for \$AC_RPVALID[]).						
Note about application in synchronized actions:						
The points generated by REPOS are supplied while the REPOS approach blocks are being processed. The current parameter settings for the REPOS operation (approach to interruption point, block start point, etc.) defined by G codes RMI, RMB, RME, RMN or VDI signal are also taken into account.						
Index 1:						
-						
unit:						
Linear / angular position						
min.:						
-1,8E308						
max.:						
1,8E308						
std:						
0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:						
Valuation:						
channel-specific						
block search						
Not classified						
link						
Not classified						
DOUBLE	\$AA_TOFF [31]		Offset in tool direction		reference:	
description:						
Variable \$AA_TOFF[geo axis] is used to overlay a movement in the corresponding tool direction. The behavior of the overlaid movement can be configured with \$MC_TOFF_MODE.						
Activation in the part program is performed using the TOFFON instruction.						
The TOFFOF instruction can be used to reset the offset values.						
The velocity for the offset can be defined with MD 21194 TOFF_VELO; the acceleration can be defined with MD21196 TOFF_ACCEL.						
The variable is only appropriate in conjunction with an active orientation transformation or an active toolholder.						
Index 1:						
-						
unit:						
mm						
min.:						
-1,8E308						
max.:						
1,8E308						
std:						
0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	runin stp	X	/	X	/	X
axis identifier:						
Valuation:						
channel-specific						
block search						
Not classified						
link						
Not classified						

DOUBLE	\$AA_TOFF_VAL [31]		Integrated value or onset in TCS		reference:	
description:						
Variable \$AA_TOFF_VAL[geo axis] determines the integrated value of the overlaid movement in the corresponding tool direction.						
The variable is only appropriate in conjunction with an active orientation transformation or an active toolholder.						
Index 1:						
unit: mm						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search			Not classified		link Not classified	
INT	\$AA_TOFF_LIMIT [31]		Limit value for onset in TCS reached		reference:	
description:						
Axial variable \$AA_TOFF_LIMIT[ax] is used to interrogate a limit value for the offset in the tool direction (TCS) via \$AA_TOFF[geo axis].						
The following values are possible:						
0: Limit value not reached						
1: Limit value reached in positive axis direction						
-1: Limit value reached in negative axis direction						
The limit values can be defined with SD 42970 TOFF_LIMIT.						
The variable is only appropriate in conjunction with an active orientation transformation or an active toolholder.						
Index 1:						
unit: -						
min.:		-1		max.:		1
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search			Not classified		link Not classified	
DOUBLE	\$AA_TOFF_PREP_DIFF [31]		Difference value of main run/preprocessing run in TCS		reference:	
description:						
Variable \$AA_TOFF_PREP_DIFF[geo axis] determines the difference value of the overlaid movement in the corresponding tool direction between the main run and preprocessing run.						
The variable is only appropriate in conjunction with an active orientation transformation or an active toolholder.						

Axial system variables

Index 1:	-					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
DOUBLE	\$AA_SOFTENDP [31]			Software limit position, positive direction		reference:
description:						
\$AA_SOFTENDP[X]						
Current software limit position, positive direction						
Index 1:	-					
unit:	Linear / angular position					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
DOUBLE	\$AA_SOFTENDN [31]			Software limit position, negative direction		reference:
description:						
\$AA_SOFTENDN[X]						
Software limit position, negative direction						
Index 1:	-					
unit:	Linear / angular position					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Axial system variables

DOUBLE	\$AA_DTBW [31]		Distance from block start in WCS			reference:	
description:							
Axial variable \$AA_DTBW[ax] determines the axial distance from the start of the block in the workpiece coordinate system for positioning and synchronized axes. The programmed position is the only factor used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified

DOUBLE	\$AA_DTBB [31]		Distance from block start in BCS			reference:	
description:							
Axial variable \$AA_DTBB[ax] determines the axial distance from the start of the block in the basic coordinate system for positioning and synchronized axes. The programmed position is the only factor used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified

DOUBLE	\$AA_DTEW [31]		Distance from block end in WCS			reference:	
description:							
Axial variable \$AA_DTEW[ax] determines the axial distance to the end of the block in the workpiece coordinate system for positioning and synchronized axes. The programmed position is the only factor used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified

Axial system variables

DOUBLE	\$AA_DTEB [31]		Distance from block end in BCS			reference:	
description:							
Axial variable \$AA_DTEB[ax] determines the axial distance to the end of the block in the basic coordinate system for positioning and synchronized axes.							
The programmed position is the only factor used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AA_DTEPW [31]		Distance to go of a reciprocating axis in WCS			reference:	
description:							
Axial variable \$AA_DTEPW[ax] determines the axial distance to go for the infeed reciprocation in the workpiece coordinate system.							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AA_DTEPB [31]		Distance to go of a reciprocating axis in BCS			reference:	
description:							
Axial variable \$AA_DTEPB[ax] determines the axial distance to go for the infeed reciprocation in the basic coordinate system.							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			

DOUBLE	\$AA_OSCILL_REVERSE_POS1 [31]	Reciprocation reversal position 1	reference:			
description:						
\$AA_OSCILL_REVERSE_POS1[X] Supplies current reversal position 1 for reciprocation. In synchronized actions, the value of setting data \$SA_OSCILL_REVERSE_POS1 is evaluated online. The variable can be accessed only from synchronized actions.						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation: channel-specific	
block search Not classified					link Not classified	
DOUBLE	\$AA_OSCILL_REVERSE_POS2 [31]	Reciprocation reversal position 2	reference:			
description:						
\$AA_OSCILL_REVERSE_POS2[X] Supplies current reversal position 2 for reciprocation. In synchronized actions, the value of setting data \$SA_OSCILL_REVERSE_POS2 is evaluated online. The variable can be accessed only from synchronized actions.						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation: channel-specific	
block search Not classified					link Not classified	
DOUBLE	\$AA_DELT [31]	Stored axial distance to go after DDTG	reference:			
description:						
\$AA_DELT[X] Stored axial distance to go in workpiece coordinate system after axial delete distance to go by a motion-synchronous action.						

Axial system variables

Index 1:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	
DOUBLE \$P_FA [31]								Programmed axial feedrate	reference:
description:									
\$P_FA[X]									
Last programmed axial feedrate									
Index 1:								-	
unit:								Linear / angular speed	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	
DOUBLE \$AA_OVR [31]								Axial override	reference:
description:									
\$AA_OVR[<axis>]									
Axial override for motion-synchronous actions.									
Multiplicative override component, applied in addition to operator override, programmed override and transformational override.									
The value is limited to max. 200%. If a value of < 0.0 is entered, it is assumed to be 0 and alarm 14756 is output.									
\$AA_OVR[<axis>] must be rewritten in every lpo cycle or else a value of 100% is applied.									
Variable \$AA_OVR[<spindle>] alters the spindle override.									
The variable can be accessed only from motion-synchronous actions.									
Index 1:								-	
unit:								-	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	X			
write:	-	X	0	-	0	X			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	

DOUBLE	\$AA_PLC_OVR [31]		Axial override from PLC			reference:	
description:							
\$AA_PLC_OVR[ax] supplies the axial override defined by the PLC.							
Index 1:							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
block search				link			
Not classified				Not classified			
DOUBLE	\$AA_TOTAL_OVR [31]		Overall axial override			reference:	
description:							
\$AA_TOTAL_OVR[ax] supplies the overall axial override (PLC_OVR*NC_OVR).							
Index 1:							
unit:							
min.:		-1,8E308	max.:		1,8E308	std:	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
block search				link			
Not classified				Not classified			

Axial system variables

DOUBLE	\$AA_VC [31]		Additive axial feedrate override			reference:	
description:							
\$AA_VC[X]							
Additive axial feedrate override for motion-synchronous actions.							
The override value must be rewritten in every lpo cycle or else a value of 0 is applied.							
A setting of 0 makes the override inoperative and is not applied to the override value.							
The total feedrate cannot be made negative by an override value.							
An upper limit is applied to ensure that the maximum axis velocities and acceleration rates cannot be exceeded.							
The calculation of other feed components is not affected by \$AA_VC.							
The override values defined by machine data: \$MN_OVR_FACTOR_LIMIT_BIN, \$MN_OVR_FACTOR_FEEDRATE[30], \$MN_OVR_FACTOR_AX_SPEED[30] and \$MN_OVR_FACTOR_SPIND_SPEED cannot be exceeded. The additive feedrate override is limited such that the resultant feedrate does not exceed the maximum override value of the programmed feedrate.							
The variable can be accessed only from synchronized actions.							
Index 1:							
-							
unit:							
Linear / angular speed							
min.:							
-1,8E308							
max.:							
1,8E308							
std:							
0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	X	0	-	0	X	
axis identifier:							
Valuation:							
channel-specific							
block search							
Not classified							
link							
Not classified							
DOUBLE	\$AA_VACTB [31]		Axis velocity in the BCS			reference:	
description:							
Axial variable \$AA_VACTB[ax] determines the axis velocity in the basic coordinate system.							
Index 1:							
-							
unit:							
Linear / angular speed							
min.:							
-1,8E308							
max.:							
1,8E308							
std:							
0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:							
Valuation:							
channel-specific							
block search							
Not classified							
link							
Not classified							

DOUBLE	\$AA_VACTW [31]		Axis velocity in the WCS			reference:	
description:							
Axial variable \$AA_VACTW[ax] determines the axis velocity in the workpiece coordinate system.							
Index 1:							
unit: Linear / angular speed							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AA_VACTM [31]		Axis velocity in the MCS			reference:	
description:							
Axial variable \$AA_VACTM[ax] determines the axis velocity on the setpoint side in the machine coordinate system. The variable also returns valid values for replacement and PLC axes.							
Index 1:							
unit: Linear / angular speed							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$VA_VACTM [31]		Axis velocity actual value in the MCS			reference:	
description:							
Axial variable \$VA_VACTM[ax] determines the axis velocity actual value in the machine coordinate system. The variable supplies an undefined value if the encoder limit frequency is exceeded. When a spindle/axis disable is active, this variable returns the current velocity setpoint. If it is preferred to return the actual velocity in this situation, BIT3 in \$MA_MISC_FUNCTION_MASK must be set.							
Index 1:							
unit: Linear / angular speed							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			

Axial system variables

DOUBLE	\$AA_LOAD [31]						Drive load	reference:	
description:									
\$AA_LOAD[X]									
Drive utilization in %									
Only available for SIMODRIVE 611D and PROFIdrive drives.									
On the PROFIdrive, the value must be explicitly provided by the drive, and transmitted through the bus by variable telegram configuration.									
Index 1:									
-									
unit:									
-									
min.: -100 max.: 100 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				Current value			link Not classified		
DOUBLE	\$VA_LOAD [31]						Drive load	reference:	
description:									
\$VA_LOAD[X]									
Drive load in %									
Available only for SIMODRIVE 611D and PROFIdrive drives.									
On the PROFIdrive, the value must be explicitly provided by the drive, and transmitted through the bus by variable telegram configuration.									
Index 1:									
-									
unit:									
-									
min.: -100 max.: 100 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				Current value			link Not classified		

DOUBLE	\$AA_TORQUE [31]		Drive torque setpoint		reference:	
description:						
\$AA_TORQUE[X]						
Drive torque setpoint in Nm						
or actual force in N (only for SIMODRIVE 611D HLA)						
Available only for SIMODRIVE 611D and PROFIdrive drives.						
On the PROFIdrive, the value must be explicitly provided by the drive, and transmitted through the bus by variable message frame configuration.						
Index 1:						
unit:						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search			Current value		link	Not classified
DOUBLE	\$VA_TORQUE [31]		Drive torque setpoint		reference:	
description:						
\$VA_TORQUE[X]						
Drive torque setpoint in Nm						
or actual force in N (only for SIMODRIVE 611D HLA)						
Available only for SIMODRIVE 611D and PROFIdrive drives.						
On the PROFIdrive, the value must be explicitly provided by the drive, and transmitted through the bus by variable telegram configuration.						
Index 1:						
unit:						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search			Current value		link	Not classified

Axial system variables

DOUBLE	\$AA_POWER [31]						Drive active power	reference:	
description:									
\$AA_POWER[x]									
Drive active power in W									
Available only for SIMODRIVE 611D and PROFIdrive drives.									
On the PROFIdrive, the value must be explicitly provided by the drive, and transmitted through the bus by variable telegram configuration.									
Index 1:									
-									
unit:									
-									
min.:			-1,8E308			max.:		1,8E308	
						std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:			
						channel-specific			
block search						Current value		link	Not classified
<hr/>									
DOUBLE	\$VA_POWER [31]						Drive active power	reference:	
description:									
\$VA_POWER[x]									
Drive active power in W									
Available only for SIMODRIVE 611D and PROFIdrive drives.									
On the PROFIdrive, the value must be explicitly provided by the drive, and transmitted through the bus by variable telegram configuration.									
Index 1:									
-									
unit:									
-									
min.:			-1,8E308			max.:		1,8E308	
						std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:			
						channel-specific			
block search						Current value		link	Not classified
<hr/>									
DOUBLE	\$AA_CURR [31]						Drive actual current	reference:	
description:									
\$AA_CURR[X]									
Actual current of axis or spindle in A									
Available only for SIMODRIVE 611D and PROFIdrive drives.									
On the PROFIdrive, the value must be explicitly provided by the drive, and transmitted through the bus by variable telegram configuration.									

Index 1:							-	
unit:							-	
min.:		-1,8E308		max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:			channel-specific	
block search				Current value			link	Not classified
DOUBLE \$VA_CURR [31]							Drive actual current	reference:
description:								
\$VA_CURR[X]								
Actual current of axis or spindle in A								
Only available for SIMODRIVE 611D and PROFIdrive drives.								
On the PROFIdrive, the value must be explicitly provided by the drive, and transmitted through the bus by variable telegram configuration.								
Index 1:							-	
unit:							-	
min.:		-1,8E308		max.:		1,8E308	std:	0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:			channel-specific	
block search				Current value			link	Not classified
DOUBLE \$VA_DIST_TORQUE [31]							Disturbing torque	reference:
description:								
\$VA_DIST_TORQUE[X]								
Normalized disturbing torque (disturbing torque/max. motor torque) = output signal of disturbance monitor in the drive - only available on PROFIdrive drives with telegram 203								
Index 1:							-	
unit:							-	
min.:		-100		max.:		100	std:	0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:			channel-specific	
block search				Current value			link	Not classified

Axial system variables

DOUBLE	\$VA_VALVELIFT [31]		Hydraulic valve lift			reference:	
description:							
\$VA_VALVELIFT[X]							
Actual valve lift in mm (for SIMODRIVE611D hydraulic module only)							
Index 1:							
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	7	-	0	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Current value			link		Not classified
DOUBLE	\$VA_PRESSURE_A [31]		Pressure at the A end of the hydraulic cylinder			reference:	
description:							
\$VA_PRESSURE_A[X]							
Pressure at A end of cylinder in bar (for SIMODRIVE611D hydraulic module only)							
Index 1:							
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Current value			link		Not classified
DOUBLE	\$VA_PRESSURE_B [31]		Pressure at the B end of the hydraulic cylinder			reference:	
description:							
\$VA_PRESSURE_B[X]							
Pressure at B end of cylinder in bar (for SIMODRIVE611D hydraulic module only)							
Index 1:							
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	7	-	0	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Current value			link		Not classified

INT	\$VA_DP_ACT_TEL [20,31]		PROFIBUS/PROFINET actual telegram from drive to NC		reference:	
description:						
\$VA_DP_ACT_TEL[b,a]						
b: Word index (16-bit access) in the PROFIBUS/PROFINET telegram						
a: Machine axis						
Actual value telegram contents - only available for PROFIBUS/PROFINET.						
For details, please see telegram configuration in PROFIdrive or drive documentation						
Index 1:		b: Word index in PROFIBUS/PROFINET actual value telegram				
Index 2:		-				
unit:		-				
min.:		-2147483648		max.: 65535		
				std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		Not classified
INT	\$AA_STAT [31]		Axis status		reference:	
description:						
The axial variable \$AA_STAT[<axis>] determines the axis status. The status "Exact stop fine" is derived from the servo status. See also \$AA_INPOS_STAT[<axis>]. The following values are possible:						
0: No axis status available						
1: Traversing movement pending						
2: Axis has reached IPO end						
3: Axis in position (exact stop coarse)						
4: Axis in position (exact stop fine)						
Note:						
With a position default setting for an axis / spindle, the variable can still indicate the statuses 'Exact stop coarse / fine' during block change although the axis / spindle is starting to traverse.						
Remedy: Also query \$AC_TIMEC.						
Index 1:		-				
unit:		-				
min.:		0		max.: 4		
				std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		Cross-channel
block search		Not classified		link		Not classified

Axial system variables

INT	\$AA_SNGLAX_STAT [31]		Status of single axis			reference:	
description:							
\$AA_SNGLAX_STAT[X]							
Axis status:							
0: Axis is not a single axis							
1: Single axis in Reset							
2: Single axis has ended							
3: Single axis is interrupted							
4: Single axis is active							
5: Single axis alarm is active							
Index 1:							
-							
unit:							
-							
min.: 0 max.: 4 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
INT	\$AA_REF [31]		Axis is homed			reference:	
description:							
\$AA_REF[X]							
Axis status:							
0: Axis is not homed							
1: Axis is homed							
Index 1:							
-							
unit:							
-							
min.: 0 max.: 1 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		Cross-channel	
block search		Not classified		link		Not classified	

INT	\$AA_TYP [31]			Axis type	reference:	
description:						
\$AA_TYP[<axis>]						
Axis type:						
0: Axis in another channel						
1: Program axis of own channel						
2: Neutral axis						
3: PLC axis						
4: Oscillating axis						
5: Neutral axis which is currently executing a JOG or homing motion						
6: Following axis coupled via master value						
7: Coupled motion following axis						
8: Command axis						
9: CompileCycles axis						
10: Coupled slave axis (master-slave function)						
11: Program axis which is currently executing a JOG or homing motion						
Index 1:						
unit:						
min.: 0 max.: 11 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		Not classified
INT	\$AA_MASL_STAT [31]			Master-slave coupling status	reference:	
description:						
The current status of a master-slave coupling.						
Val. 0: Axis is not a slave axis or no coupling is active.						
Value> 0: Coupling is active, the relevant machine axis number of the master axis is supplied.						
\$AA_MASL_STAT[X]						
Index 1:						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified	link		Not classified

Axial system variables

INT	\$P_SEARCH_MASLC [31]		Master-slave coupling status changed				reference:	
description:								
\$P_SEARCH_MASLC[axis identifier]								
The current status of a master-slave coupling has been changed during a block search.								
Index 1:								
unit:								
min.: 0 max.: 1 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified		link		Not classified		
DOUBLE	\$P_SEARCH_MASLD [31]		Master-slave position offset				reference:	
description:								
\$P_SEARCH_MASLD[axis identifier]								
Positional offset between master and slave axes calculated during block search as coupling was closed.								
Index 1:								
unit: Linear / angular position								
min.: -1,8E308 max.: 1,8E308 std: 0.0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified		link		Not classified		
INT	\$AA_FXS [31]		Status Desired state of "Travel to fixed stop"				reference:	
description:								
\$AA_FXS[X]								
Status desired state "Travel to fixed stop"								
0: Axis not at limit stop								
1: Fixed stop has been successfully approached								
2: Approach to fixed stop has failed								
3: Selection of travel to fixed stop active								
4: Fixed stop has been detected								
5: Deselection of travel to fixed stop active								

Index 1:								-	
unit:								-	
min.:		0		max.:		5		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	runin stp	X	/	X	/	X			
axis identifier:						Valuation:		channel-specific	
block search				Program sensitive		link		Not classified	
INT	\$VA_FXS [31]			Actual status of "Travel to fixed stop"			reference:		
description:									
\$VA_FXS[X]									
Status actual state "Travel to fixed stop"									
0: Axis not at limit stop									
1: Fixed stop has been successfully approached									
2: Approach to fixed stop has failed									
3: Selection of travel to fixed stop active									
4: Fixed stop has been detected									
5: Deselection of travel to fixed stop active									
Index 1:								-	
unit:								-	
min.:		0		max.:		5		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:		channel-specific	
block search				Current value		link		Not classified	
INT	\$VA_FXS_INFO [31]			Additional information with "Travel to fixed stop"			reference:		
description:									
\$VA_FXS_INFO[X]									
Additional information with "Travel to fixed stop" if \$VA_FXS[]=2									
0: No additional information available									
1: No approach movement programmed									
2: Programmed end position reached, motion completed									
3: Abort by NC RESET (key reset)									
4: Axis has exited fixed stop window									
5: Torque reduction rejected by drive									
6: PLC has cancelled enables									

Axial system variables

Index 1:							
unit:							
min.:		0		max.:		6	
std:				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
block search				Not classified			
link				Not classified			
INT	\$VA_TORQUE_AT_LIMIT [31]			Status "Torque limit reached"			reference:
description:							
\$VA_TORQUE_AT_LIMIT[X]							
"Torque limit reached" status							
0: Torque limit not yet reached							
1: Torque limit reached							
In digital SIMODRIVE611D systems, the drive returns a status signal indicating whether the programmed torque limit has been reached.							
Index 1:							
unit:							
min.:		0		max.:		1	
std:				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
block search				Not classified			
link				Not classified			
INT	\$AA_FOC [31]			Status Desired state of "ForceControl"			reference:
description:							
\$AA_FOC[X]							
Status desired state "ForceControl"							
0: ForceControl not active							
1: ForceControl active modally							
2: ForceControl active non-modally							
Index 1:							
unit:							
min.:		0		max.:		2	
std:				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	runin stp	X	7	X	7	X	
axis identifier:				Valuation:			
block search				Not classified			
link				Not classified			

INT	\$VA_FOC [31]						Actual status of "ForceControl"	reference:	
description:									
\$VA_FOC[X]									
Status actual state "ForceControl"									
0: ForceControl not active									
1: ForceControl active modally									
2: ForceControl active non-modally									
Index 1:									
-									
unit:									
-									
min.: 0 max.: 2 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:	channel-specific		
block search			Not classified			link	Not classified		
INT	\$AA_COUP_ACT [31]						Coupling type of a following axis/spindle	reference:	
description:									
\$AA_COUP_ACT[C]									
C: following axis C or S2: following spindle 2									
It is possible to determine whether an axis / spindle is being used by a coupling. The coupling type is returned when the coupling is active. The system variable must be read out for the following axis / spindle.									
Values:									
0: Axis / spindle is not coupled with a leading spindle / leading axis									
1,2,3: Axis is tangentially tracked (TANG)									
4: Synchronous spindle coupling (COUP)									
8: Axis is in coupled-motion (TRAIL)									
16: Following axis in master value coupling (LEAD)									
32: Following axis for electronic gear (ELG)									
64: Axis is active in a gantry grouping									
128,256,384: Axis is tangentially tracked (TANG with optimization)									
512: Following axis of the generic coupling (CP)									
If the axis / spindle is a following axis / spindle in several couplings, the sum is returned as the value.									
Index 1:									
-									
unit:									
-									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:	Cross-channel		
block search			Not classified			link	Not classified		

Axial system variables

DOUBLE	\$AA_EG_SYNFA [31]		Synchronization of the slave axis			reference:	
description:							
\$AA_EG_SYNFA[a]							
a: Following axis							
Synchronous position of following axis							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			
STRING	\$P_EG_BC [31]		Block change criterion with active coupling			reference:	
description:							
\$P_EG_BC[a]							
Block change criterion for EGONSYN, EGON, WAITC.							
Index 1:							
unit: -							
Index 3:							
unit: max. string length							
min.:				max.:			
				std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			
INT	\$AA_EG_NUM_LA [31]		Number of defined master axes			reference:	
description:							
\$AA_EG_NUM_LA[a]							
a: Following axis							
Number of leading axes specified with EGDEF							
Index 1:							
unit: -							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search				link			
Not classified				Not classified			

DOUBLE	\$VA_EG_SYNCDIFF [31]		Synchronism difference				reference:	
description:								
\$VA_EG_SYNCDIFF[a]								
a: Following axis								
Synchronism deviation								
Index 1:								
unit: Linear / angular position								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
block search				Not classified				
link				Not classified				
DOUBLE	\$VA_EG_SYNCDIFF_S [31]		Synchronous run difference with sign				reference:	
description:								
\$VA_EG_SYNCDIFF_S[a]								
a: Following axis								
Signed synchronism deviation								
Index 1:								
unit: Linear / angular position								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
block search				Not classified				
link				Not classified				
AXIS	\$AA_EG_AX [31,31]		Leading axis identifier				reference:	
description:								
\$AA_EG_AX[n,a]								
n: Index for leading axis								
a: Following axis								
Identifier for the nth leading axis								
Index 1:								
n: Index for leading axis (nth leading axis)								
Index 2:								
-								
unit: -								
min.:				std:		GEOAXISNUM		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
block search				Not classified				
link				Not classified				

Axial system variables

DOUBLE	\$AA_LEAD_SP [31]		Simulated lead value - position			reference:	
description:							
\$AA_LEAD_SP[LW]							
Simulated master value position							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation: channel-specific			
block search				link Not classified			
DOUBLE	\$AA_LEAD_SV [31]		Simulated lead value - Velocity			reference:	
description:							
\$AA_LEAD_SV[LW]							
Simulated master value velocity							
Index 1:							
unit: Linear / angular speed							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation: channel-specific			
block search				link Not classified			

DOUBLE	\$AA_LEAD_P_TURN [31]	Modulo compensation of the lead value	reference:				
description:							
<p>\$AA_LEAD_P_TURN[LW] Current master value positional component lost as a result of modulo reduction. The actual master value position (used internally by the control) is \$AA_LEAD_P[LW] + \$AA_LEAD_P_TURN[LW] If LW is a modulo axis, \$AA_LEAD_P_TURN is an integral multiple of \$MA_MODULO_RANGE. If LW is not a modulo axis, \$AA_LEAD_P_TURN is always 0.</p> <p>Example_1: \$MA_MODULO_RANGE[LW]=360 \$AA_LEAD_P[LW] =290 \$AA_LEAD_P_TURN[LW] =720 The actual master value position (used internally by the control) is 1010.</p> <p>Example_2: \$MA_MODULO_RANGE[LW]=360 \$AA_LEAD_P[LW] =290 \$AA_LEAD_P_TURN[LW] =-360 The actual master value position (used internally by the control) is -70.</p>							
index 1:							
unit: Linear / angular position							
min.: -1,8E308 max.: 1,8E308 std: 0.0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	-	0	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search			Not classified		link		Not classified
DOUBLE	\$AA_LEAD_P [31]	Current lead value position	reference:				
description:							
<p>\$AA_LEAD_P[LW] Current master value position (modulo-reduced) If LW is a modulo axis, the following always applies: $0 \leq \\$AA_LEAD_P[LW] \leq \\$MA_MODULO_RANGE[LW]$</p>							

Axial system variables

Index 1:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	
DOUBLE	\$AA_LEAD_V [31]			Current lead value - velocity			reference:		
description:									
\$AA_LEAD_V[LW]									
Current master value velocity									
Index 1:								-	
unit:								Linear / angular speed	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	
INT	\$AA_SYNC [31]			Coupling status of the following axis			reference:		
description:									
\$AA_SYNC[FA]									
Coupling status of following axis									
0 => No synchronism									
1 => Coarse synchronism									
2 => Fine synchronism									
3 => Coarse and fine synchronism									
Index 1:								-	
unit:								-	
min.:		0		max.:		3		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	

INT	\$AA_IN_SYNC [31]						Synchronization status of the following axis	reference:	
description:									
\$AA_IN_SYNC[FA]									
Synchronization status of the following axis with master value coupling, ELG and generic coupling									
1 => Synchronization in progress, i.e. following axis is being synchronized									
Index 1:									
unit:									
min.: 0 max.: 1 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
DOUBLE	\$P_COUP_OFFS [31]						Programmed position offset	reference:	
description:									
\$P_COUP_OFFS[S2]									
S2: spindle 2 or C: axis C									
Programmed position offset from synchronous spindle (following spindle) to leading spindle									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
DOUBLE	\$AA_COUP_OFFS [31]						Position offset on setpoint side	reference:	
description:									
\$AA_COUP_OFFS[S2]									
S2: spindle 2 or C: axis C									
Position offset from synchronous spindle (following spindle) to leading spindle on setpoint side									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		

Axial system variables

DOUBLE	\$VA_COUP_OFFS [31]		Position offset on actual value side			reference:	
description:							
\$VA_COUP_OFFS[S2]							
S2: spindle 2 or C: axis C							
Position offset from synchronous spindle (following spindle) to leading spindle on actual value side							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

BOOL	\$AA_SCTRACE [31]		IPO trigger for servo trace			reference:	
description:							
\$AA_SCTRACE[X] = 1							
Write: Activate IPO trigger for servo trace							
0: No action							
!0: Activate trigger							
Read:							
Always 0 because trigger cannot be read back							
Index 1:							
unit: -							
min.:		FALSE		max.:		TRUE	
std:		FALSE					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	-	0	X	
write:	runin stp	X	7	-	0	X	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

BOOL	\$VA_DPE [31]						Power enable for machine axis	reference:	
description:									
\$VA_DPE[X1]									
Status of power enable for a machine axis (status of the axial pulse enable).									
For SIMODRIVE 611D: The status is supplied directly from the drive.									
For PROFIdrive drives with a telegram type greater than 100: The status comes directly from the drive (message word, bit5)									
For other PROFIdrive drives: The status is modeled from further drive status signals (identical to \$VA_SCE, see there)									
Index 1:									
-									
unit:									
-									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				Not classified			link		
							Not classified		
DOUBLE	\$AA_ACC [31]						Current axial acceleration value	reference:	
description:									
\$AA_ACC									
Current acceleration value of axis with single-axis interpolation.									
\$AA_ACC = \$MA_MAX_AX_ACCEL * progr. acceleration override.									
Index 1:									
-									
unit:									
Linear / angular acceleration									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				Not classified			link		
							Not classified		
INT	\$AA_ACC_PERCENT [31]						Current acceleration value percentage	reference:	
description:									
Variable \$AA_ACC_PERCENT supplies the current acceleration value of the axis for single-axis interpolation in percent.									
Index 1:									
-									
unit:									
-									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				Not classified			link		
							Not classified		

Axial system variables

INT	\$PA_ACCLIMA [31]		Acceleration correction in the run-in			reference:	
description:							
\$PA_ACCLIMA							
Acceleration override set with ACCLIMA in preprocessing run							
Index 1:							
unit:							
min.: 1 max.: 200 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
INT	\$PA_VELOLIMA [31]		Velocity correction in the run-in			reference:	
description:							
\$PA_VELOLIMA							
Velocity override set with VELOLIMA in preprocessing run							
Index 1:							
unit:							
min.: 1 max.: 200 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
INT	\$PA_JERKLIMA [31]		Jerk correction in the run-in			reference:	
description:							
\$PA_JERKLIMA							
Jerk override set with JERKLIMA in preprocessing run							
Index 1:							
unit:							
min.: 1 max.: 200 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified

INT	\$AA_ACCLIMA [31]		Acceleration compensation			reference:	
description:							
\$AA_ACCLIMA							
Acceleration override set with ACCLIMA in main run							
Index 1:							
unit:							
min.: 1 max.: 200 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	
INT	\$AA_VELOLIMA [31]		Velocity correction			reference:	
description:							
\$AA_VELOLIMA							
Velocity override set with VELOLIMA in main run							
Index 1:							
unit:							
min.: 1 max.: 200 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	
INT	\$AA_JERKLIMA [31]		Jerk override			reference:	
description:							
\$AA_JERKLIMA							
Jerk override set with JERKLIMA in main run							
Index 1:							
unit:							
min.: 1 max.: 200 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	

Axial system variables

INT	\$AA_MOTEND [31]			Current axial end of motion criterion		reference:	
description:							
\$AA_MOTEND							
Current end of motion criterion with single-axis interpolation							
1 = End of motion with exact stop FINE							
2 = End of motion with exact stop COARSE							
3 = End of motion at end of interpolation							
4 = Block change in braking ramp of axis motion							
5 = Block change in braking ramp of axis motion with tolerance window for setpoint							
6 = Block change in braking ramp of axis motion with tolerance window for actual value							
Index 1:		-					
unit:		-					
min.:		1		max.:		6	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified
INT	\$AA_SCPAR [31]			Setpoint parameter set		reference:	
description:							
\$AA_SCPAR							
Current setpoint parameter set							
Index 1:		-					
unit:		-					
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		Not classified

INT	\$AA_ESR_STAT [31]		ESR status of an axis				reference:	
description:								
\$AA_ESR_STAT[X]								
Status of "Extended stop and retract", bit-coded:								
BIT0: Generator mode is activated								
BIT1: Retraction is activated								
BIT2: Extended stop is activated								
BIT3: DC-link undervoltage								
BIT4: Generator minimum speed								
Index 1:								
unit:								
min.: 0 max.: 15 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stop	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
BOOL	\$AA_ESR_ENABLE [31]		ESR enable				reference:	
description:								
\$AA_ESR_ENABLE[X] = 1								
Enabling of "Extended stop and retract"								
Index 1:								
unit:								
min.: FALSE max.: TRUE std: FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stop	X	7	X	7	X		
write:	runin stop	X	7	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
BOOL	\$AA_ESR_TRIGGER [31]		Triggers a single-axis ESR				reference:	
description:								
\$AA_ESR_TRIGGER[X] = 1								
Activation of "NC-controlled ESR" for PLC-controlled axis (= single axis)								
X: PLC-controlled axis								
Index 1:								
unit:								
min.: FALSE max.: TRUE std: FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	-	X	0	X	7	X		
write:	-	X	0	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

Axial system variables

DOUBLE	\$AA_POLFA [31]			Programmed retraction position for single axis	reference:	
description:						
\$AA_POLFA[X]						
X: PLC-controlled axis (= single axis)						
Supplies the programmed retraction position of the PLC-controlled axis						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		
block search				Not classified		
				link		
				Not classified		
INT	\$AA_POLFA_VALID [31]			Status of the value of \$AA_POLFA	reference:	
description:						
\$AA_POLFA_VALID[X]						
Supplies the current status of \$AA_POLFA[X]						
X: PLC-controlled axis (= single axis)						
Return values:						
0: Retraction not programmed						
1: Retraction programmed as position						
2: Retraction programmed as distance						
Index 1:						
unit: -						
min.:		0		max.:		2
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		
block search				Not classified		
				link		
				Not classified		

INT	\$AA_ALARM_STAT [31]		Display if alarms are present			reference:	
description:							
\$AA_ALARM_STAT							
Displays whether there are alarms present for a PLC-controlled axis.							
The coded, associated alarm responses can be used as a source for the "Extended stop and retract".							
The data is bit-coded so that, if necessary, individual states can also be masked or evaluated separately (bits not listed below supply a value of 0)							
Bit2 = 1: NOREADY (active rapid deceleration + cancellation of servo enable)							
Bit6 = 1: STOPBYALARM (ramp stop of all channel axes)							
Bit9 = 1: SETVDI (VDI interface signal alarm is set)							
Bit13 = 1: FOLLOWUPBYALARM (follow-up)							
Index 1:							
-							
unit:							
-							
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		Not classified	

BOOL	\$AN_AXCTSWA [31]		Axis container rotation			reference:	
description:							
Is axis container rotation active ?							
Example: EVERY \$AN_AXCTSWA[n] == TRUE DO M99							
Read:							
TRUE: An axis container rotation is currently being executed on the axis container with axis container name n							
FALSE: Axis container rotation is not active.							
Index 1:							
-							
unit:							
-							
min.:		FALSE		max.:		TRUE	
				std:		FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified		link		Not classified	

Axial system variables

INT	\$AN_AXCTAS [31]						Axis container current rotation	reference:	
description:									
Axis container current rotation:									
The number of slots by which the axis container is currently being rotated is specified for the axis container with axis container name n.									
The value ranges from 0 to the maximum number of occupied slots in the axis container -1.									
Index 1:									
-									
unit:									
-									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			
BOOL	\$AC_AXCTSWA [31]						Channel enable for axis container rotation	reference:	
description:									
Enables the axis container rotation in the channel.									
TRUE: The channel has enabled rotation for the axis container with axis container name n and this rotation is not yet finished.									
FALSE: The axis container rotation is finished.									
Index 1:									
-									
unit:									
-									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search			Not classified			link Not classified			

INT	\$VA_POSCTRL_MODE [31]						Position controller mode	reference:	
description:									
\$VA_POSCTRL_MODE[X]									
Position controller mode:									
0 = Closed-loop position control									
1 = Closed-loop speed control									
2 = Stop									
3 = Park									
4 = Follow-up									
Index 1:									
unit:									
min.: 0 max.: 4 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search		Current value			link		Not classified		
BOOL	\$VA_SCE [31]						Status of speed controller enable	reference:	
description:									
\$VA_SCE[X1]									
Status of speed controller enable									
For SIMODRIVE 611D: The status is supplied directly from the drive.									
For SINAMICS drives with a telegram type greater than 100: The status comes directly from the drive (message word, bit11)									
For other PROFIdrive drives: The status is modeled from further drive status signals (including status word1, bit2)									
Index 1:									
unit:									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search		Not classified			link		Not classified		

Axial system variables

DOUBLE	\$AA_TRAVEL_DIST [31]		Total traverse path			reference:	
description:							
Total traversing distance of axis in MCS in mm or degrees. The total traversing distance of the axis since the SRAM contents were last erased is added.							
Index 1:							
unit: Linear / angular position							
min.: 0.0		max.: 1,8E308		std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		Not classified
DOUBLE	\$AA_TRAVEL_TIME [31]		Total traversing time of axis			reference:	
description:							
Total traversing time of axis in MCS in seconds. The total traversing time of the axis since the SRAM contents were last erased is added.							
Index 1:							
unit: s							
min.: 0.0		max.: 1,8E308		std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		Not classified
DOUBLE	\$AA_TRAVEL_COUNT [31]		Number of traversing operations			reference:	
description:							
Number of traversing operations of axis in MCS. The total number of traversing operations since the SRAM contents were last erased is stored.							
Index 1:							
unit: -							
min.: 0.0		max.: 1,8E308		std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Program sensitive			link		Not classified

DOUBLE	\$AA_TRAVEL_DIST_HS [31]		Total traversing distance at high velocity			reference:	
description:							
Total traversing distance of axis in MCS in mm or degrees at high velocity, i.e. at a velocity of $\geq 80\%$ of the maximum axis velocity. This value is stored in the SRAM.							
Index 1:							
unit: Linear / angular position							
min.: 0.0		max.: 1,8E308		std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search Program sensitive				link Not classified			
DOUBLE	\$AA_TRAVEL_TIME_HS [31]		Total traversing time of axis at high velocity			reference:	
description:							
Total traversing time of axis in seconds at high velocity in MCS, i.e. at a velocity of $\geq 80\%$ of the maximum axis velocity. This value is stored in the SRAM.							
Index 1:							
unit: s							
min.: 0.0		max.: 1,8E308		std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search Program sensitive				link Not classified			
DOUBLE	\$AA_TRAVEL_COUNT_HS [31]		No. of traversing operations at high velocity			reference:	
description:							
Number of traversing operations of axis in MCS at high velocity, i.e. at a velocity of $\geq 80\%$ of the maximum axis velocity. This value is stored in the SRAM.							
Index 1:							
unit: -							
min.: 0.0		max.: 1,8E308		std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search Program sensitive				link Not classified			

Axial system variables

DOUBLE	\$AA_JERK_TOT [31]		Total axial jerk			reference:	
description:							
Total axial jerk in m/s ³ . The total jerk applied to the axis is added up and stored in the SRAM.							
Index 1:							
unit: Linear / angular jerk							
min.:		0.0		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	
DOUBLE	\$AA_JERK_TIME [31]		Total traversing time of axis with jerk			reference:	
description:							
Total traversing time of axis in seconds in MCS with jerk. The total time period for which the axis traverses with jerk is added up and stored in the SRAM.							
Index 1:							
unit: s							
min.:		0.0		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	
DOUBLE	\$AA_JERK_COUNT [31]		Number of traversing operations with jerk			reference:	
description:							
Number of traversing operations executed by axis in MCS with jerk. This value is stored in the SRAM.							
Index 1:							
unit: -							
min.:		0.0		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search				link		Not classified	

BOOL	\$AC_RPVALID [31]		Repos position valid			reference:	
description:							
\$AC_RPVALID[X]							
\$AC_RPVALID[axis identifier] returns TRUE if a valid Repos position, which can be interrogated with \$AC_RETPOINT[axis identifier], is available for this axis.							
Valid Repos positions are generally available while system and user Asubs are being processed. However, this is not the case in the following situations:							
- The Asub activates a modified radius when tool radius compensation is active. \$AC_RPVALID then returns FALSE for geometry axes while the Asub is running. The newly calculated Repos positions only become available with the approach blocks generated by the REPOS command.							
- The end position of the axis was last specified by the main run (FC18, synchronized actions, reciprocation, transfer from another channel after axis replacement).							
index 1:		-					
unit:							
min.:		FALSE		max.:		TRUE	
				std:		FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:						valuation:	channel-specific
block search			Not classified			link	Not classified
DOUBLE	\$VA_SYNCDIFF [31]		Synchronism deviation between actual values			reference:	
description:							
\$VA_SYNCDIFF[FA]							
FA: Following axis/following spindle							
Deviation in synchronism between actual values for LEAD, TRAIL, ELG and COUP.							
The deviation in synchronism between actual values is the deviation in distance between the servo actual position of the following axis/following spindle and a point calculated (according to the coupling rule) from the servo actual position of the leading axis/leading spindle.							
$\$VA_SYNCDIFF[FA] = \$VA_IM[FA] - K(\$VA_IM[LA])$							
K: Coupling rule							
LA: Leading axis/leading spindle							
index 1:		-					
unit:		Linear / angular position					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:						valuation:	channel-specific
block search			Not classified			link	Not classified

Axial system variables

DOUBLE	\$AA_SYNCDIFF [31]			Synchronism deviation between setpoints	reference:	
description:						
\$AA_SYNCDIFF[FA]						
FA: Following axis/following spindle						
Deviation in synchronism between setpoints for LEAD, TRAIL, ELG and COUP.						
The deviation in synchronism between setpoints is the deviation in distance between the setpoint position of the following axis/following spindle and a point calculated (according to the coupling rule) from the setpoint position of the leading axis/leading spindle.						
$\$AA_SYNCDIFF[FA] = \$AA_IM[FA] - K(\$AA_IM[LA])$						
K: Coupling rule						
LA: Leading axis/leading spindle						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search				link		Not classified
INT	\$VA_SYNCDIFF_STAT [31]			Status of synchronism deviation between actual values	reference:	
description:						
\$VA_SYNCDIFF_STAT[FA]						
FA: Following axis/following spindle						
Status of synchronism deviation between actual values:						
-4: Reserved						
-3: No valid value in \$VA_SYNCDIFF, tangential control (not TANG(... "P"))						
-2: No valid value in \$VA_SYNCDIFF, master value coupling and simulated MV						
-1: No valid value in \$VA_SYNCDIFF						
0: No valid value in \$VA_SYNCDIFF, coupling not active						
1: Valid value in \$VA_SYNCDIFF						
Index 1:						
unit: -						
min.:		-4		max.:		1
				std:		0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search				link		Not classified

INT	\$AA_SYNCDIFF_STAT [31]		Status synchron. dev. between setpoints	reference:		
description:						
\$AA_SYNCDIFF_STAT[FA]						
FA: Following axis/following spindle						
Status of synchronism deviation between setpoints:						
-4: No valid value in \$AA_SYNCDIFF, coupled motion from part program						
-3: Reserved						
-2: Reserved						
-1: No valid value in \$AA_SYNCDIFF						
0: No valid value in \$AA_SYNCDIFF, coupling not active						
1: Valid value in \$AA_SYNCDIFF						
index 1:						
-						
unit:						
-						
min.:		-4		max.: 1		
				std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				valuation:		channel-specific
block search			Not classified	link		Not classified
DOUBLE	\$AA_OSCILL_BREAK_POS1 [31]		Reciprocation interruption position 1	reference:		
description:						
\$AA_OSCILL_BREAK_POS1[<axis>]						
The current approach to reversal position 1 is finished at this position or the last approach to reversal position 1 was finished at this position (reversal position 2 currently being approached).						
\$AA_OSCILL_BREAK_POS1[<axis>] is not equal to \$AA_OSCILL_REVERSE_POS1[<axis>] if the reciprocation motion was interrupted by an external signal (PLC).						
The variable can be accessed only from synchronized actions.						
index 1:						
-						
unit:						
Linear / angular position						
min.:		-1,8E308		max.: 1,8E308		
				std: 0.0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	7	X
write:	-	-	0	-	0	-
axis identifier:				valuation:		channel-specific
block search			Not classified	link		Not classified

Axial system variables

DOUBLE	\$AA_OSCILL_BREAK_POS2 [31]						Reciprocation interruption position 2	reference:	
description:									
\$AA_OSCILL_BREAK_POS2[<axis>] The current approach to reversal position 2 is finished at this position or the last approach to reversal position 2 was finished at this position (reversal position 1 currently being approached). \$AA_OSCILL_BREAK_POS2[<axis>] is not equal to \$AA_OSCILL_REVERSE_POS2[<axis>] if the reciprocation motion was interrupted by an external signal (PLC). The variable can be accessed only from synchronized actions.									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308			max.: 1,8E308			std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	-	X	0	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search						link Not classified			
DOUBLE	\$AA_BCS_OFFSET [31]						Total axis offsets	reference:	
description:									
Axial variable \$AA_BCS_OFFSET[ax] is used to determine the total axis offsets for an axis. The total consists of the handwheel (DRF) offset, the overlaid movement (\$AA_OFF[ax]) and the external work offset. This offset is included in the BCS. The MCS is displaced in relation to the BCS according to the offset.									
Index 1:									
unit: -									
min.: -1,8E308			max.: 1,8E308			std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stop	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:						Valuation: channel-specific			
block search						link Not classified			
INT	\$AA_CHANNO [31]						Axis in the channel	reference:	
description:									
This variable returns the number of the channel in which the axis is being interpolated. If value 0 is output, the axis could not be assigned to a channel.									

Index 1:	-					
unit:						
min.:	0	max.:	10	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	Cross-channel	
block search	Not classified			link	Not classified	

DOUBLE	\$AA_IW_CORR [31]	Actual PCS-Position of one axis incl. overlay rates	reference:	
description:				
The axial variable \$AA_IW_CORR[ax] determines the actual setpoint value of the workpiece coordinate system (WCS) for the respective axis. The setpoint value corresponds to the initial value of the interpolator for the actual interpolation cycle. As opposed to \$AA_IW, this value contains the axial overlay shares (DRF, AA_OFF, external WO, retraction etc.).				

Index 1:	-					
unit:	Linear / angular position					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

DOUBLE	\$AA_IEN_CORR [31]	Actual FCS-Position of one axis incl. overlay rates	reference:	
description:				
The axial variable \$AA_IEN_CORR[ax] calculates the actual interpolator position of the adjustable coordinate system (ACS) for the specified axis. See also \$AA_IW_CORR[ax]. The ACS-Value contains any axial overlay rate (DRF, AA_OFF, external Frame, etc.).				

Index 1:	-					
unit:	Linear / angular position					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

Axial system variables

DOUBLE	\$AA_IBN_CORR [31]		Actual FCS-Position of one axis incl. overlay rates		reference:	
description:						
The axial variable \$AA_IBN_CORR[ax] calculates the actual interpolator position of the foot coordinate system (FCS) for the specified axis. See also \$AA_IW_CORR[ax]. The FCS-Value contains any axial overlay rate (DRF, \$AA_OFF, external Frame, etc.).						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link Not classified	
DOUBLE	\$AA_IB_CORR [31]		Actual BCS-Position of one axis incl. overlay rates		reference:	
description:						
The axial variable \$AA_IB_CORR[ax] calculates the actual interpolator position of the base coordinate system (BCS) for the specified axis. See also \$AA_IW_CORR[ax]. The BCS-Value contains any axial overlay rate (DRF, \$AA_OFF, external Frame, etc.).						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search			Not classified		link Not classified	

INT	\$AA_TYPE [31]			Axis type	reference:	
description:						
\$AA_TYPE[<axis>]						
Axis type:						
0: Type is not ascertainable						
1: NC-Program axis						
2: Neutral axis						
3: PLC axis						
4: Oscillating axis						
5: Neutral axis which is currently executing a JOG or homing motion						
6: Following axis coupled via master value						
7: Coupled motion following axis						
8: Command axis						
9: CompileCycles axis						
10: Coupled slave axis (master-slave function)						
11: Program axis which is currently executing a JOG or homing motion						
Index 1:						
unit:						
min.: 0 max.: 11 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	-	0	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		Cross-channel
block search		Not classified		link		Not classified
DOUBLE	\$AA_DTSW [31]			Distance from start of motion in PCS	reference:	
description:						
Axial variable \$AA_DTSW[ax] determines the axial distance (with algebraic sign) from the start of motion in the workpiece coordinate system for positioning and synchronized axes. The programmed position is the only factor used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.						
Index 1:						
unit: Linear / angular position						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		channel-specific
block search		Not classified		link		Not classified

Axial system variables

DOUBLE	\$AA_DTSB [31]		Distance from start of motion in BCS		reference:	
description:						
Axial variable \$AA_DTSB[ax] determines the axial distance (with algebraic sign) from the start of motion in the basic coordinate system for positioning and synchronized axes. The programmed position is the only factor used to calculate the distance. If the axis is a coupled axis, the position component derived from the axis coupling is not considered.						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	1	X
write:	-	-	0	-	0	-
axis identifier:			Valuation: channel-specific			
block search			Not classified		link	
			Not classified			
DOUBLE	\$AA_COUP_CORR [31]		Generic coupling: Compensation value for 'Correct synchronism difference'		reference:	
description:						
The variable \$AA_COUP_CORR[Sn] with spindle Sn (n: spindle number), example S2: spindle 2 or C: axis C serves to execute the "Correct synchronism error" functionality, and provides the compensation value for the position offset for generic couplings with CPFRS="MCS" (or CPSETTYPE="COUP").						
For the duration (MD 30455 MISC_FUNCTION_MASK, bit 7) of the activation of the NC/PLC interface signal DB31, ... DBX31.6 (Correct synchronism error) for the following spindle in active coupling, the actual values of this spindle are compared with the setpoint values. The difference is the compensation value that can be read with the system variables \$AA_COUP_CORR.						
If the compensation value is known, this value can also be written directly into the system variable. The NC/PLC interface signal DB31, ... DBX31.6 (Correct synchronism error) should not be set in this case. The variable becomes effective only if for the axis / spindle a CP coupling has been activated with CPSETTYPE="COUP" or CPFRS="MCS".						
In the coupling module, the variable \$AA_COUP_CORR is considered, and it corrects the setpoint values.						
The compensation value is automatically deleted for reference point approach and zero mark synchronization of spindles. The system variable then returns the value 'zero'.						
Depending on the application, the compensation value can also be deleted at an earlier point in time by describing the variables with the value '0'.						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	1	X	1	X
write:	run in stp	X	1	-	0	X
axis identifier:			Valuation: Cross-channel			
block search			Not classified		link	
			No restrictions			

INT	\$AA_AXCHANGE_TYP [31]			exchange axistype			reference:	
description:								
\$AA_AXCHANGE_TYP[<axis>]								
Type of axis with regard to axis replacement								
0: Axis assigned to NC program								
1: Axis assigned to PLC, or active as command or reciprocating axis								
2: Other channel has right to interpolate								
3: Neutral axis								
4: Neutral axis controlled by PLC								
5: Other channel has right to interpolate, axis requested for NC program								
6: Other channel has right to interpolate, axis requested as neutral axis								
7: Axis is PLC axis or active as command or reciprocating axis, axis requested for NC program								
8: Axis is PLC axis or active as command or reciprocating axis, axis requested as neutral axis.								
9: Firmly assigned PLC axis, in neutral axis status								
10: Firmly assigned PLC axis, controlled by the PLC, in neutral axis status								
Index 1:								
-								
unit:								
-								
min.: 0 max.: 10 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	-	X	0	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search			Not classified			link	Not classified	
INT	\$AA_AXCHANGE_STAT [31]			exchange axis state			reference:	
description:								
\$AA_AXCHANGE_STAT[<Axis>]								
Axis status regarding axis interchange:								
0: Axis can be interchanged								
1: Axis is assigned to the channel, but can become the PLC, command or reciprocating axis								
2: Axis cannot be interchanged								
Index 1:								
-								
unit:								
-								
min.: 0 max.: 2 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	-	X	0	-	0	X		
write:	-	-	0	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search			Not classified			link	Not classified	

Axial system variables

INT	\$AA_INPOS_STAT [31]			State of the programmed position	reference:	
description:						
<p>The variable \$AA_INPOS_STAT[<axis>] returns the status of a programmed axis position. The indexing position is used for indexing axes. In the case of spindles, \$AA_INPOS_STAT refers to the spindle position of SPOS/SPOSA/M19. In speed control mode M3/M4/M5/SPCOF and after M70 value 0 is always read.</p> <p>\$AA_INPOS_STAT always refers to the programmed position. The programmed position cannot be reached if end positions change during interpolation (delete distance-to-go, NC Stop, REPOS). At zero speed, the variable then gives the value 0.</p> <p>Axis positions can be programmed through the part program, synchronized actions, FC18 or as indexing positions.</p> <p>The variable returns the following values:</p> <p>0: No status available (axis / spindle outside the programmed position)</p> <p>1: Awaiting traversing movement</p> <p>2: Position reached via setpoint</p> <p>3: Position reached via 'Exact stop coarse'</p> <p>4: Position reached via 'Exact stop fine'</p> <p>Note 1: The status referring to the programmed position is independent of the operating mode (AUTOMATIC, JOG, MDI, ...)</p> <p>Note 2: If additional position components (e.g. following axis couplings, corrections, compensations etc.) are inserted, then the programmed position is no longer identical with the machine axis position. During the period of additional traversings, exact stop signals are deleted, and the status can fall to the value 1.</p> <p>Note 3: When approaching a position with tight exact stop limits, overshooting can cause the status to drop briefly again in relation to the dynamics of an axis / spindle.</p> <p>Note 4: Function-dependent, the signals 'Spindle in position' and 'Indexing axis in position' are output on the axial VDI interface.</p> <p>Note 5: When determining the status of a path axis with G643/G644/G645, the variable \$AA_INPOS_STAT can remain at the value '1' on account of smoothing behavior during the path motion. Remedy: Use variable \$AA_STAT (however the variable \$AA_STAT does not check whether a programmed position has been reached).</p>						
Index 1:						
unit:						
min.: 0 max.: 4 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	Cross-channel
block search					link	Not classified

INT	\$VA_ENC_ZERO_MON_ERR_CNT [n,31]		Zero mark monitoring error counter	reference:		
description:						
Incremental and distance-coded measuring systems: \$VA_ENC_ZERO_MON_ERR_CNT[n,ax] contains the current number of detected zero mark errors.						
Absolute measuring systems (\$MA_ENC_TYPE=4): NCK.71 and higher: \$VA_ENC_ZERO_MON_ERR_CNT[n,ax] contains the current number of detected limit violations by the comparison between the absolute and incremental encoder tracks (limit values see MDs \$MA_ENC_ABS_ZEROMON_WARNING and \$MA_ENC_ABS_ZEROMON_INITIAL)						
NCK.64 and higher: \$VA_ENC_ZERO_MON_ERR_CNT[n,ax] contains the current number of deviations in 1/2 coarse increments between the absolute and incremental encoder tracks.						
NCK.73 and higher: PROFIBUS drives of the type SIMODRIVE 611U do not support dynamic monitoring of the above-mentioned limit values. For this reason, with NCK.73 and higher, monitoring is only active if the axis is stationary. With versions lower than NCK.73, monitoring must be disabled for this drive type.						
\$VA_ENC_ZERO_MON_ERR_CNT[n,ax] is initialized to 0 during power ON. It is not reset by RESET.						
The indices mean: n: Number of encoder ax: Machine axis (See also \$MA_ENC_ZERO_MONITORING and alarm 25020)						
index 1:		n:Encoder number				
index 2:		-				
unit:						
min.:		0		max.:	2147483647	
				std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				valuation:		channel-specific
block search		Not classified		link		Not classified

Axial system variables

INT	\$VA_ABSOLUTE_ENC_ERR_CNT [n,31]	Error counter for absolute encoder	reference:			
description:						
Absolute measuring systems (\$MA_ENC_TYPE=4), only for SIMODRIVE 611D: This counter is incremented if any new errors have been recognized during transmission of absolute values. This can be used to observe the transmission of absolute values. Other systems/drives: Variable returns 0. \$VA_ABSOLUTE_ENC_ERR_CNT[n,ax] is initialized to 0 during Power ON. RESET does not cause a reset. The indices mean: n: Number of encoder ax: Machine axis						
Index 1:	n:Encoder number					
Index 2:	-					
unit:	-					
min.:	0	max.:	2147483647	std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	Not classified	
INT	\$VA_ABSOLUTE_ENC_STATE [n,31]	Absolute encoder interface status	reference:			
description:						
Absolute measuring systems (\$MA_ENC_TYPE=4), only for SIMODRIVE 611D: The axial variable \$VA_ABSOLUTE_ENC_STATE[n,ax] determines the last occurrence of an error state of the absolute encoder interface. The indices mean: n: Number of encoder ax: Machine axis Details: Bit 0 Interface active Bit 1 Error during parity check Bit 2 Error bit Alarm Bit 3 Error bit CRC error Bit 4 Start bit for EnDat transmission missing (see also Description of Functions 'Measuring System Monitoring') Other systems/drives: Variable returns 0.						
Index 1:	n:Encoder number					

Index 2:							-	
unit:							-	
min.:		0	max.:		31	std:		0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
INT	\$P_DIAM_STAT [31]			Status of the diameter programming in the preprocessing		reference:		
description:								
The system variable \$P_DIAM_STAT[AX] returns the programmed status of the diameter programming in the channel.								
The programmed status of the diameter programming is bit-coded:								
BIT0 = 0: Diameter programming not active								
BIT0 = 1: Diameter programming active								
Note : The following bits only have a meaning that can be evaluated if BIT0 = 1:								
BIT1 = 0: Channel-specific diameter programming active								
BIT1 = 1: Axis-specific diameter programming active								
BIT2 = 0: Absolute and incremental dimensions in the diameter								
BIT2 = 1: Absolute dimension in the diameter, incremental dimension in the radius								
BIT3 = 0: DIAMCYCOF not active								
BIT3 = 1: DIAMCYCOF active								
Index 1:							-	
unit:							-	
min.:		0	max.:		15	std:		0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	

Axial system variables

INT	\$AA_DIAM_STAT [31]	Status of the diameter programming in the main run	reference:			
description:						
The system variable \$AA_DIAM_STAT[AX] returns the active main run status of the diameter programming in the channel.						
The active status of the diameter programming is bit-coded:						
BIT0 = 0: Diameter programming not active						
BIT0 = 1: Diameter programming active						
Note : The following bits only have a meaning that can be evaluated if BIT0 = 1:						
BIT1 = 0: Channel-specific diameter programming active						
BIT1 = 1: Axis-specific diameter programming active						
BIT2 = 0: Absolute and incremental dimensions in the diameter						
BIT2 = 1: Absolute dimension in the diameter, incremental dimension in the radius						
BIT3 = 0: DIAMCYCOF not active						
BIT3 = 1: DIAMCYCOF active						
Index 1:						
unit:						
min.: 0 max.: 15 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	-
write:	-	-	0	-	0	-
axis identifier:					Valuation:	Cross-channel
block search					link	Not classified

INT	\$P_SCC_STAT [31]	Status of the G96/G961/G962 assignment in the preprocessing	reference:			
description:						
The system variable \$P_SCC_STAT[AX] returns the preprocessing status of the G96/G961/G962 assignment in the channel, this has been configured or programmed by SCC[AX] .						
The status of the G96/G961/G962 assignment is bit-coded:						
BIT0 = 0: Axis is not assigned to G96/G961/G962						
BIT0 = 1: Axis is assigned to G96/G961/G962						
Index 1:						
unit:						
min.: 0 max.: 15 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	-	-	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search					link	Not classified

INT	\$AA_SCC_STAT [31]						Status of the G96/G961/G962 assignment in the main run	reference:	
description:									
The system variable \$AA_SCC_STAT[AX] returns the main run status of the G96/G961/G962 assignment in the channel, this has been configured or programmed by SCC[AX].									
The status of the G96/G961/G962 assignment is bit-coded:									
BIT0 = 0: Axis is not assigned to G96/G961/G962									
BIT0 = 1: Axis is assigned to G96/G961/G962									
Index 1:									
unit:									
min.: 0			max.: 15			std: 0			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		Cross-channel			
block search		Not classified			link		Not classified		
INT	\$AA_CPNACTFA [31]							reference:	
description:									
-									
Index 1:									
unit:									
min.: 0			max.: 2147483647			std: 0			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		Cross-channel			
block search		Not classified			link		Not classified		
DOUBLE	\$AA_CPFCDPT [31]							reference:	
description:									
-									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308			max.: 1,8E308			std: 0.0			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		Cross-channel			
block search		Not classified			link		Not classified		

Axial system variables

DOUBLE	\$AA_CPFCDV [31]						reference:	
description:								
-								
Index 1: -								
unit: Linear / angular speed								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stop	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: Cross-channel				
block search				link				
Not classified				Not classified				
DOUBLE	\$AA_CPFREQV [31]						reference:	
description:								
-								
Index 1: -								
unit: -								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stop	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: Cross-channel				
block search				link				
Not classified				Not classified				
INT	\$AA_CPNDFLA [31]						reference:	
description:								
-								
Index 1: -								
unit: -								
min.:		0		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stop	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: Cross-channel				
block search				link				
Not classified				Not classified				
INT	\$AA_CPNACTLA [31]						reference:	
description:								
-								

Index 1:							-	
unit:							-	
min.:		0	max.:		2147483647	std:		0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search		Not classified			link		Not classified	
DOUBLE \$AA_CPFACCT [31]							reference:	
description:								
Index 1:							-	
unit:							Linear / angular acceleration	
min.:		-1,8E308	max.:		1,8E308	std:		0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search		Not classified			link		Not classified	
STRING \$AA_CPFERS [31]							reference:	
description:								
Index 1:							-	
Index 3:							maximum string length	
unit:							-	
min.:			max.:			std:		""
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search		Not classified			link		Not classified	
STRING \$AA_CPFMSON [31]							reference:	
description:								
Index 1:							-	
Index 3:							maximum string length	
unit:							-	
min.:			max.:			std:		""
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search		Not classified			link		Not classified	

Axial system variables

STRING	\$AA_CPFMON [31]						reference:	
description:								
-								
Index 1:	-							
Index 3:	maximum string length							
unit:	-							
min.:	-		max.:	-		std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		
STRING	\$AA_CPFMOF [31]						reference:	
description:								
-								
Index 1:	-							
Index 3:	maximum string length							
unit:	-							
min.:	-		max.:	-		std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		
STRING	\$AA_CPMRESET [31]						reference:	
description:								
-								
Index 1:	-							
Index 3:	maximum string length							
unit:	-							
min.:	-		max.:	-		std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		

STRING	\$AA_CPMSTART [31]						reference:	
description:								
-								
Index 1:	-							
Index 3:	maximum string length							
unit:	-							
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		
STRING	\$AA_CPMSTARTPRT [31]						reference:	
description:								
-								
Index 1:	-							
Index 3:	maximum string length							
unit:	-							
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		
STRING	\$AA_CPSETTYPE [31]						reference:	
description:								
-								
Index 1:	-							
Index 3:	maximum string length							
unit:	-							
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		

Axial system variables

STRING	\$AA_CPBC [31]						reference:	
description:								
-								
Index 1:	-							
Index 3:	maximum string length							
unit:	-							
min.:			max.:			std:		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		
INT	\$AA_CPFACT [31]						reference:	
description:								
-								
Index 1:	-							
unit:	-							
min.:	-2147483648		max.:	2147483647		std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		
AXIS	\$AA_CPDEFLA [31,n]						reference:	
description:								
-								
Index 1:	Axis identifier of the following axis							
Index 2:	Index of the requested leading axis							
unit:	-							
min.:			max.:			std:	GEOAXISNUM	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search	Not classified			link		Not classified		

AXIS	\$AA_CPACTLA [31,n]						reference:	
description:								
-								
Index 1:	Axis identifier of the following axis							
Index 2:	Index of the requested active leading axis							
unit:	-							
min.:		max.:		std:	GEOAXISNUM			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:					Valuation:	Cross-channel		
block search	Not classified			link	Not classified			
AXIS	\$AA_CPACTFA [31,n]						reference:	
description:								
-								
Index 1:	Axis identifier of the leading axis							
Index 2:	Index of the requested following axis							
unit:	-							
min.:		max.:		std:	GEOAXISNUM			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:					Valuation:	Cross-channel		
block search	Not classified			link	Not classified			
INT	\$PA_CPFACT [31]			Coupling type of a following axis/spindle			reference:	
description:								
\$PA_CPFACT[AX1]								
It is possible to determine whether an axis / spindle AX1 is being used by a coupling. The coupling type is returned when the coupling is active. The system variable must be read out for the following axis / spindle.								
Bit0, Bit1 tangential following active, TANG								
Bit2 = 1 ('H04') Synchronous spindle active, COUP								
Bit3 = 1 ('H08') Coupled motion active, TRAIL								
Bit4 = 1 ('H10') Master value coupling active, LEAD								
Bit5 = 1 ('H20') Electronic gear active, EG								
Bit6 = 1 ('H40') Gantry grouping active, GANTRY								
Bit7, Bit8 Tangential following active, TANG (with optimization)								
Bit9 = 1 ('H200') Generic coupling active, CP								

Axial system variables

Index 1:								-	
unit:								-	
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		Not classified		
INT	\$PA_CPFPOSSTAT [31]			validity of the synchronized position and stop position			reference:		
description:									
\$PA_CPFPOSSTAT[AX1]									
The validity of the synchronized position (Bit0) and the stop position (Bit1) can be read for an axis / spindle AX1 if the coupling is active.									
Bit0 = 1 ('H01') Synchronized position is valid									
Bit1 = 1 ('H02') Stop position is valid									
Index 1:								-	
unit:								-	
min.:		-1,8E308		max.:		1,8E308		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		Not classified		
STRING	\$PA_CPSETTYPE [31]						reference:		
description:									
-									
Index 1:								-	
Index 3:								maximum string length	
unit:								-	
min.:				max.:				std:	""
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		channel-specific			
block search		Not classified			link		Not classified		

INT	\$PA_CPNACTFA [31]						reference:	
description:								
-								
Index 1:								
unit:								
-								
min.:		0		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
INT	\$PA_CPNDEFLA [31]						reference:	
description:								
-								
Index 1:								
unit:								
-								
min.:		0		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
INT	\$PA_CPNACTLA [31]						reference:	
description:								
-								
Index 1:								
unit:								
-								
min.:		0		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
STRING	\$PA_CPFERS [31]						reference:	
description:								
-								
Index 1:								
-								

Axial system variables

Index 3:		maximum string length					
unit:		-					
min.:		max.:		std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
STRING	\$PA_CPFMSON [31]						reference:
description:							
-							
Index 1:		-					
Index 3:		maximum string length					
unit:		-					
min.:		max.:		std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
STRING	\$PA_CPFMON [31]						reference:
description:							
-							
Index 1:		-					
Index 3:		maximum string length					
unit:		-					
min.:		max.:		std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
STRING	\$PA_CPFMOF [31]						reference:
description:							
-							
Index 1:		-					

Index 3:		maximum string length					
unit:		-					
min.:		max.:		std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
STRING	\$PA_CPMRESET [31]						reference:
description:							
-							
Index 1:		-					
Index 3:		maximum string length					
unit:		-					
min.:		max.:		std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
STRING	\$PA_CPMSTART [31]						reference:
description:							
-							
Index 1:		-					
Index 3:		maximum string length					
unit:		-					
min.:		max.:		std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
STRING	\$PA_CPBC [31]						reference:
description:							
-							
Index 1:		-					

Axial system variables

Index 3:		maximum string length					
unit:							
min.:		max.:		std:		""	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
AXIS	\$PA_CPDEFLA [31,n]					reference:	
description:							
-							
Index 1:		Axis identifier of the following axis					
Index 2:		Index of the requested leading axis					
unit:							
min.:		max.:		std:		GEOAXISNUM	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
AXIS	\$PA_CPACTLA [31,n]					reference:	
description:							
-							
Index 1:		Axis identifier of the following axis					
Index 2:		Index of the requested active leading axis					
unit:							
min.:		max.:		std:		GEOAXISNUM	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
AXIS	\$PA_CPACTFA [31,n]					reference:	
description:							
-							
Index 1:		Axis identifier of the leading axis					

Index 2:	Index of the requested following axis					
unit:	-					
min.:		max.:		std:	GEOAXISNUM	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	-	0	-
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$AA_DEPAXO [31]			Dependence on other axes		reference:
description:						
The variable \$AA_DEPAXO[AX] returns an axis code for the stated axis AX, which contains all machine axes with a mechanical dependence on the stated axis.						
A dependency is produced by:						
Active coupling modules, the following axis is dependent on the leading axis						
Active transformations, output axes of the transformation are dependent on the input axes of the transformation						
Closed gantry groupings, the slave axes are dependent on the master axis						
The given axis itself is also returned in the axis code						
The axis code indicates how the machine data \$MC_AXCONF_MACHAX_USED refers not directly to the machine axes but to the logical NCK machine axis image (\$MN_AXCONF_LOGIC_MACHAX_TAB).						
Bit 0 = 0 There is no dependence on the logical machine axis AX1						
Bit 0 = 1 There is a dependence on the logical machine axis AX1						
Bit 1 = 0 There is no dependence on the logical machine axis AX2						
Bit 1 = 1 There is a dependence on the logical machine axis AX2						
and so on.						
Index 1:	-					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stop	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	Cross-channel	
block search	Not classified			link	Not classified	

Axial system variables

INT	\$AA_FIX_POINT_SELECTED [31]	Selected fixed point					reference:	
description:								
\$AA_FIX_POINT_SELECTED[<Axis>]								
0: No fixed point selected								
> 0: Number of the selected fixed point								
Via the NC/PLC interface signal DB31, DBX13.0 - .2 (Activate fixed point approach in JOG) you can activate the fixed point approach in the operating mode JOG.								
Bits 0-2 indicate the number of the fixed point to be approached.								
Activation is confirmed via the NC/PLC interface signal DB31, ... DBX75.0 - .2 (Fixed point approach in JOG active). The bits indicate the number of the fixed point being approached.								
Index 1:								
unit:								
min.: 0 max.: 2 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
INT	\$AA_ON_FIX_POINT [31]	Number of the fixed point at which the axis is currently located					reference:	
description:								
\$AA_ON_FIX_POINT[<Axis>]								
0: Axis is not at a fixed point								
> 0: Number of the fixed point at which the axis currently stands (the fixed point position is the current position).								
This is independent of the way this position was reached.								
Index 1:								
unit:								
min.: 0 max.: 2 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified			link		Not classified	
DOUBLE	\$VA_ENC1_COMP_VAL [31]	EEC compensation value encoder 1					reference:	
description:								
The axial variable \$VA_ENC1_COMP_VAL[ax] determines the current compensation value of the measuring system error compensation (encoder 1) in the machine coordinate system (MCS).								

Index 1:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:								Valuation: channel-specific	
block search								Not classified	
link								Not classified	
DOUBLE \$VA_ENC2_COMP_VAL [31]								EEC compensation value encoder 2	reference:
description:									
The axial variable \$VA_ENC2_COMP_VAL[ax] determines the current compensation value of the measuring system error compensation (encoder 2) in the machine coordinate system (MCS).									
Index 1:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:								Valuation: channel-specific	
block search								Not classified	
link								Not classified	
DOUBLE \$VA_CEC_COMP_VAL [31]								CEC compensation value	reference:
description:									
The axial variable \$VA_CEC_COMP_VAL[ax] determines the current compensation value of the sag compensation in the machine coordinate system (MCS).									
Index 1:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:								Valuation: channel-specific	
block search								Not classified	
link								Not classified	
DOUBLE \$VA_TEMP_COMP_VAL [31]								TEMP compensation value	reference:
description:									
The axial variable \$VA_TEMP_COMP_VAL[ax] determines the current compensation value of the temperature compensation in the machine coordinate system (MCS).									

Axial system variables

Index 1:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	
DOUBLE \$AA_DTBREB [31]								reference:	
description:									
Index 1:								Axis Index	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				Cross-channel	
block search				link				Not classified	
DOUBLE \$AA_DTBREB_CMD [31]								reference:	
description:									
Index 1:								Axis Index	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				Cross-channel	
block search				link				Not classified	
DOUBLE \$AA_DTBREB_CORR [31]								reference:	
description:									
Index 1:								Axis Index	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				Cross-channel	
block search				link				Not classified	

DOUBLE	\$AA_DTBREB_DEP [31]						reference:	
description:								
-								
Index 1:	Axis Index							
unit:	Linear / angular position							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	Cross-channel			
block search	Not classified			link	Not classified			
DOUBLE	\$AA_DTBREM [31]						reference:	
description:								
-								
Index 1:	Axis Index							
unit:	Linear / angular position							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	Cross-channel			
block search	Not classified			link	Not classified			
DOUBLE	\$AA_DTBREM_CMD [31]						reference:	
description:								
-								
Index 1:	Axis Index							
unit:	Linear / angular position							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	Cross-channel			
block search	Not classified			link	Not classified			
DOUBLE	\$AA_DTBREM_CORR [31]						reference:	
description:								
-								

Axial system variables

Index 1:	Axis Index					
unit:	Linear / angular position					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	Cross-channel
block search	Not classified			link	Not classified	
DOUBLE	\$AA_DTBREM_DEP [31]					reference:
description:						
-						
Index 1:	Axis Index					
unit:	Linear / angular position					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:					Valuation:	Cross-channel
block search	Not classified			link	Not classified	

INT	\$AA_BRAKE_CONDB [31]	Context-sensitive conditions for interpolator stop in the BCS	reference:			
description:						
<p>The axial variable \$AA_BRAKE_CONDB[ax] indicates the braking requests (conditions) pending on the axis / spindle to the interpolator stop. A braking request consists of a collision direction referring to a coordinate axis in the BCS, and a braking priority referring to the machining level. If the axis / spindle receives an up to date braking request due to these conditions, bit 0 is set in \$AA_BRAKE_STATE[X] (in the next IPO cycle).</p> <p>Bits 0 to 3 show the highest braking priority in positive direction:</p> <p>0: No pending braking request 1: Priority 1 includes all positioning actions (G0, POS, SPOS) 2: Priority 2 includes DYNNORM and all movements of priority 1 3: Priority 3 includes DYNPOS and all movements of priorities 1 to 2 4: Priority 4 includes DYNROUGH and all movements of priorities 1 to 3 5: Priority 5 includes DYNSEMIFIN and all movements of priorities 1 to 4 6: Priority 6 includes all movements (incl. DYNFINISH) 7: Priority 7 includes all movements. The request was triggered by the NC/PLC interface signal DB31, ... DBX4.3 (Feed stop / spindle stop). Brakes are always applied independent of the movement direction. 13: Priority 13 includes all movements. Axially, braking is executed using the Emergency Stop braking ramp.</p> <p>In bits 16 to 19 the highest braking priority is shown in negative direction: 0 to 13: Same significance as with bits 0 to 3 All other bits are not set.</p> <p>When displaying the value of the variables in hexadecimal format, the fifth digit from the right indicates the braking priority in negative direction and the digit on the right the braking priority in positive direction.</p>						
Index 1:						
unit:						
min.: 0 max.: 0xD000D std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	1	X
write:	-	X	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified
INT	\$AA_BRAKE_STATE [31]	Current braking status	reference:			
description:						
<p>\$AA_BRAKE_STATE[X]</p> <p>signals back to axis / spindle if braking has been initiated due to request by \$AA_BRAKE_CONDB[X] or NC/PLC interface signal DB31, ... DBX4.3 (Feed stop / spindle stop).</p> <p>Bit 0 = 1: Current braking request due to context-sensitive interpolator stop or NC/PLC interface signal DB31, ... DBX4.3 (Feed stop / spindle stop) (\$AA_BRAKE_CONDB[X])</p>						
Index 1:						
unit:						
min.: 0 max.: 0x1 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified

Axial system variables

INT	\$AA_BRAKE_CONDM [31]	Context-sensitive conditions for interpolator stop in the MCS	reference:			
description:						
The axial variable \$AA_BRAKE_CONDM[ax] indicates the braking requests (conditions) pending on the axis / spindle to the interpolator stop. A braking request consists of a collision direction referring to a coordinate axis in the Machine, and a braking priority referring to the machining level.						
Bits 0 to 3 show the highest braking priority in positive direction:						
0: No pending braking request						
1: Priority 1 includes all positioning actions (G0, POS, SPOS)						
2: Priority 2 includes DYNNORM and all movements of priority 1						
3: Priority 3 includes DYNPOS and all movements of priorities 1 to 2						
4: Priority 4 includes DYNROUGH and all movements of priorities 1 to 3						
5: Priority 5 includes DYNSEMIFIN and all movements of priorities 1 to 4						
6: Priority 6 includes all movements (incl. DYNFINISH)						
7: Priority 7 includes all movements. The request was triggered by the NC/PLC interface signal DB31, ... DBX4.3 (Feed stop / spindle stop). Brakes are always applied independent of the movement direction.						
13: Priority 13 includes all movements. Axially, braking is executed using the Emergency Stop braking ramp.						
In bits 16 to 19 the highest braking priority is shown in negative direction:						
0 to 13: Same significance as with bits 0 to 3						
All other bits are not set.						
When displaying the value of the variables in hexadecimal format, the fifth digit from the right indicates the braking priority in negative direction and the digit on the right the braking priority in positive direction.						
Index 1:	-					
unit:	-					
min.:	0	max.:	0xD000D	std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	-	X	0	X	1	X
write:	-	X	0	-	0	-
axis identifier:					Valuation:	channel-specific
block search	Not classified				link	Not classified
BOOL	\$AA_JOG_POS_SELECTED [31]	JOG to position	reference:			
description:						
\$AA_JOG_POS_SELECTED[<Axis>]						
FALSE: JOG to position inactive.						
TRUE: JOG to position active.						
Via the NC/PLC interface signal DB31, ... DBX13.3 (Activate approaching position in JOG) jogging to position in the operating mode JOG is activated.						
Activation is confirmed via the NC/PLC interface signal DB31, ... DBX75.6 (Approaching position in JOG active).						

Index 1:	-						
unit:	-						
min.:	FALSE	max.:	TRUE	std:	FALSE		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		
BOOL	\$AA_JOG_POS_ACT [31]			JOG to position: Position reached			reference:
description:							
The variable \$AA_JOG_POS_ACT[<Axis>] has the following values:							
FALSE:Position not reached by JOG to position.							
TRUEPosition reached by JOG to position.							
Via the PLC signal DB31, ... DBX13.3 (Activate approaching position in JOG) jogging to position in the operating mode JOG is activated.							
Activation via the NC/PLC interface signal DB31, ... DBX75.6 DB31, ... DBX75.6 and the system variable \$AA_JOG_POS_SELECTED[<Axis>] is confirmed.							
The position reached via the NC/PLC interface signal DB31, ... DBX75.7 (Position approached in JOG reached) is reported.							
The position reached was defined by the setting data \$SA_JOG_POSITION[<Axis>].							
Index 1:	-						
unit:	-						
min.:	FALSE	max.:	TRUE	std:	FALSE		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	-	X	0	X	7	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		
DOUBLE	\$AA_PCS_REL [31]			Current relative WCS setpoint value of an axis			reference:
description:							
The axial variable \$AA_PCS_REL[ax] determines the current relative setpoint value in the workpiece coordinate system (WCS) for the corresponding axis. The setpoint value corresponds to \$AA_IW[ax], which is transformed by the current relative system frame \$P_RELFRAME. The axial positions lie in the relative WCS coordinate system.							
Index 1:	-						
unit:	Linear / angular position						
min.:	-1,8E308	max.:	1,8E308	std:	0.0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	run in stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	Not classified		

Axial system variables

DOUBLE	\$AA_ACS_REL [31]		Current SZS setpoint value of an axis		reference:	
description:						
The axial variable \$AA_ACS_REL[ax] determines the current relative setpoint value in the settable zero point coordinate system (SZS) for the corresponding axis. The setpoint value corresponds to \$AA_IEN[ax], which is transformed by the current relative system frame \$P_RELFRAME. The axial positions lie in the relative SZS coordinate system.						
Index 1:						
-						
unit:						
Linear / angular position						
min.:						
-1,8E308						
max.:						
1,8E308						
std:						
0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:						
Valuation: channel-specific						
block search						
Not classified						
link						
Not classified						
INT	\$AA_EG_TYPE [31,31]		Type of coupling		reference:	
description:						
\$AA_EG_TYPE[a,b]						
a: Following axis						
b: Leading axis						
Type of coupling for leading axis b						
-1: no coupling defined						
0: Actual value coupling						
1: Setpoint value coupling						
Index 1:						
-						
Index 2:						
-						
unit:						
-						
min.:						
0						
max.:						
1						
std:						
0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:						
Valuation: channel-specific						
block search						
Not classified						
link						
Not classified						
DOUBLE	\$AA_EG_NUMERA [31,31]		Numerator of the coupling factor		reference:	
description:						
\$AA_EG_NUMERA[a,b]						
a: Following axis						
b: Leading axis						
Numerator of coupling factor for leading axis b						
Index 1:						
-						

Index 2:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	

DOUBLE	\$AA_EG_DENOM [31,31]	Denominator of the coupling factor						reference:	
description:									
\$AA_EG_DENOM[a,b]									
a: Following axis									
b: Leading axis									
Denominator of coupling factor for leading axis b									
Index 1:								-	
Index 2:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	

DOUBLE	\$AA_EG_SYN [31,31]	Synchronization of the master axis						reference:	
description:									
\$AA_EG_SYN[a,b]									
a: Following axis									
b: Leading axis									
Synchronous position of leading axis b									
Index 1:								-	
Index 2:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	

Axial system variables

BOOL	\$AA_EG_ACTIVE [31,31]		Coupling is active for the master axis				reference:	
description:								
\$AA_EG_ACTIVE[a,b]								
a: Following axis								
b: Leading axis								
Coupling for leading axis b is active, i.e. switched on								
Index 1:								
-								
Index 2:								
-								
unit:								
-								
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				channel-specific				
block search		Not classified				link		Not classified
DOUBLE	\$AA_CPLCMDP [31,31]		-				reference:	
description:								
-								
Index 1:								
-								
Index 2:								
-								
unit:								
Linear / angular position								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				Cross-channel				
block search		Not classified				link		Not classified
DOUBLE	\$AA_CPLCMDV [31,31]		-				reference:	
description:								
-								
Index 1:								
-								
Index 2:								
-								
unit:								
Linear / angular speed								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
				Cross-channel				
block search		Not classified				link		Not classified

INT	\$AA_CPLTYPE [31,31]						reference:	
description:								
-								
Index 1:		-						
Index 2:		-						
unit:								
min.:		0	max.:		512	std:		0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:						Valuation:	Cross-channel	
block search		Not classified				link	Not classified	
DOUBLE	\$AA_CPLACC [31,31]						reference:	
description:								
-								
Index 1:		-						
Index 2:		-						
unit:		Linear / angular acceleration						
min.:		-1,8E308	max.:		1,8E308	std:		0.0
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:						Valuation:	Cross-channel	
block search		Not classified				link	Not classified	
STRING	\$AA_CPLSTATE [MAXNUM_AXES_IN_SYSTEM,3 1,]						reference:	
description:								
-								
Index 1:		axis name						
Index 2:		-						
Index 3:		maximum string length						
unit:								
min.:		max.:		std:		""		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:						Valuation:	Cross-channel	
block search		Not classified				link	Not classified	

Axial system variables

DOUBLE	\$AA_CPLNUM [31,31]						reference:		
description:									
-									
Index 1:		-							
Index 2:		-							
unit:									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		Cross-channel			
block search		Not classified		link		Not classified			
DOUBLE	\$AA_CPLDEN [31,31]						reference:		
description:									
-									
Index 1:		-							
Index 2:		-							
unit:									
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		Cross-channel			
block search		Not classified		link		Not classified			
INT	\$AA_CPLCTID [31,31]						reference:		
description:									
-									
Index 1:		-							
Index 2:		-							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	run in stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:		Cross-channel			
block search		Not classified		link		Not classified			

STRING	\$AA_CPLSETVAL [MAXNUM_AXES_IN_SYSTEM,3 1,]						reference:	
description:								
-								
Index 1:	axis name							
Index 2:	-							
Index 3:	maximum string length							
unit:	-							
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	Cross-channel			
block search	Not classified			link	Not classified			
INT	\$PA_CPLTYPE [31,31]						reference:	
description:								
-								
Index 1:	axis name							
Index 2:	-							
unit:	-							
min.:	0		max.:	512		std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	Not classified			
STRING	\$PA_CPLSTATE [MAXNUM_AXES_IN_SYSTEM,3 1,400]						reference:	
description:								
-								
Index 1:	axis name							
Index 2:	-							
Index 3:	maximum string length							
unit:	-							
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	Not classified			

Axial system variables

DOUBLE	\$PA_CPLNUM [31,31]						reference:	
description:								
-								
Index 1:	axis name							
Index 2:	-							
unit:	-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	Not classified		
DOUBLE	\$PA_CPLDEN [31,31]						reference:	
description:								
-								
Index 1:	axis name							
Index 2:	-							
unit:	-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	Not classified		
INT	\$PA_CPLCTID [31,31]						reference:	
description:								
-								
Index 1:	axis name							
Index 2:	-							
unit:	-							
min.:	-2147483648		max.:	2147483647		std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	Not classified		

STRING	\$PA_CPLSETVAL [MAXNUM_AXES_IN_SYSTEM,3 1,400]						reference:	
description: -								
Index 1:	axis name							
Index 2:	-							
Index 3:	maximum string length							
unit:	-							
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	Not classified			
INT	\$VA_ENC_ZERO_MON_ACCESS_CNT [n,31]						reference:	
Updating counter of valid zero monitoring accesses								
description: Incremental and distance-coded measuring systems, only for SIMODRIVE 611D: This variable requires a great deal of computing time with this type of encoder, it is only supplied if bit_0 = 1 is set in \$MA_ENC_ZERO_MONITORING_SYSVAR_CTRL. After the initialization phase, the system variable is incremented after every minute if one or more zero marks have been detected during this time. During the initialization phase, it is incremented at each detected, protected zero mark. See also \$MA_ENC_ZEROMON_SYSVAR_CTRL Absolute measuring systems (\$MA_ENC_TYPE=4), only for SIMODRIVE 611D: This counter is incremented upon each successful NC access to a valid EnDat absolute value. Other drives or deactivated: Variable returns 0. \$VA_ENC_ZERO_MON_ACCESS_CNT[n,ax] is initialized to 0 at power ON. It is not reset by RESET. The indices mean: n: Number of encoder ax: Machine axis								
Index 1:	n:Encoder number							
Index 2:	-							
unit:	-							
min.:	0		max.:	2147483647		std:	0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	Not classified			

Axial system variables

INT	\$VA_ABSOLUTE_ENC_ZERO_MON_MAX [n,31]	Maximum of \$VA_ENC_ZERO_MON_ACT	reference:			
description:						
Absolute measuring systems (\$MA_ENC_TYPE=4), only for SIMODRIVE 611D: This system variable contains the maximum value of \$VA_ENC_ZERO_MON_ACT since the encoder was switched on. Other systems/drives: Variable returns 0. \$VA_ABSOLUTE_ENC_ZERO_MON_MAX[n,ax] is initialized to 0 at power ON and encoder selection. RESET does not cause a reset. The indices mean: n: Number of encoder ax: Machine axis						
Index 1:	n:Encoder number					
Index 2:	-					
unit:	-					
min.:	0	max.:	2147483647	std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$VA_ABSOLUTE_ENC_DELTA_INIT [n,31]	Initial difference with absolute encoder	reference:			
description:						
Only with absolute encoders: This value includes the initial difference value between the last absolute position buffered in the SRAM and the current absolute position (in the format internal increment - see machine data \$MN_INT_PER_MM and \$MN_INT_PER_DEG). The value is updated at power ON, warm restart, park deselection and return below the encoder limit frequency. Other encoders: Variable returns 0. \$VA_ABSOLUTE_ENC_DELTA_INIT[n,ax] is recalculated during power ON. RESET does not cause a reset. Meaning of the indices: n: Encoder number ax: Machine axis						
Index 1:	n:Encoder number					
Index 2:	-					
unit:	-					
min.:	0	max.:	31	std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

INT	\$VA_ENC_ZERO_MON_ACT [n,31]	Current internal zero monitoring values	reference:			
description:						
Incremental and distance-coded measuring systems, only for SIMODRIVE 611D: This system variable contains the current hardware counter value of the last zero mark passed. Absolute measuring systems (\$MA_ENC_TYPE=4), only for SIMODRIVE 611D: This system variable contains the current difference (amount) between the control position and the newly formed absolute position in the format 1/4 coarse encoder increments. Other drives: Variable returns 0. \$VA_ENC_ZERO_MON_ACT[n,ax] is initialized to 0 at power ON. RESET does not cause a reset. The indices mean: n: Number of encoder ax: Machine axis						
Index 1:		n:Encoder number				
Index 2:		-				
unit:		-				
min.:		0	max.:	31		
			std:	0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:			Valuation:			channel-specific
block search			link			Not classified
INT	\$VA_ENC_ZERO_MON_INIT [n,31]	Initialization values of hardware counter during zero monitoring	reference:			
description:						
Incremental and distance-coded measuring systems, only for SIMODRIVE 611D: This system variable contains the initial hardware counter value with which all further hardware counter values of the zero marks are compared. Other systems/drives: Variable returns 0. \$VA_ENC_ZERO_MON_INIT[n,ax] is initialized to 0 at power ON and encoder selection. RESET does not cause a reset. The indices mean: n: Number of encoder ax: Machine axis						
Index 1:		n:Encoder number				
Index 2:		-				
unit:		-				
min.:		0	max.:	2147483647		
			std:	0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:			Valuation:			channel-specific
block search			link			Not classified

Axial system variables

DOUBLE	\$AA_COUP_CORR_DIST [31]		Generic coupling: Distance to go from \$AA_COUP_CORR		reference:	
description:						
\$AA_COUP_CORR_DIST[Sn]						
with spindle Sn (n: spindle number), example S2: spindle 2 or C: axis C						
The variable serves to display the distance to go of \$AA_COUP_CORR (compensation value for the position offset with generic couplings) for the "Correct synchronism error" function.						
Index 1:						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		Cross-channel
block search				link		No restrictions
DOUBLE	\$AA_CPLINTR [31,31]				reference:	
description:						
-						
Index 1:						
Axis identifier for the following axis						
Index 2:						
Axis identifier for the leading axis						
unit: Linear / angular position						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		Cross-channel
block search				link		Not classified
DOUBLE	\$AA_CPLINSC [31,31]				reference:	
description:						
-						
Index 1:						
Axis identifier for the following axis						
Index 2:						
Axis identifier for the leading axis						
unit: -						
min.:		-1,8E308		max.:		1,8E308
				std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		Cross-channel
block search				link		Not classified

DOUBLE	\$AA_CPLOUTTR [31,31]						reference:	
description:								
-								
Index 1:	Axis identifier for the following axis							
Index 2:	Axis identifier for the leading axis							
unit:	Linear / angular position							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	Cross-channel			
block search	Not classified			link	Not classified			
DOUBLE	\$AA_CPLOUTSC [31,31]						reference:	
description:								
-								
Index 1:	Axis identifier for the following axis							
Index 2:	Axis identifier for the leading axis							
unit:	-							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	run in stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	Cross-channel			
block search	Not classified			link	Not classified			
DOUBLE	\$PA_CPLINTR [31,31]						reference:	
description:								
-								
Index 1:	Axis identifier for the following axis							
Index 2:	Axis identifier for the following axis							
unit:	Linear / angular position							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	Not classified			

Axial system variables

DOUBLE	\$PA_CPLINSC [31,31]						reference:	
description:								
-								
Index 1:		Axis identifier for the following axis						
Index 2:		Axis identifier for the leading axis						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified		link		Not classified		
DOUBLE	\$PA_CPLOUTTR [31,31]						reference:	
description:								
-								
Index 1:		Axis identifier for the following axis						
Index 2:		Axis identifier for the leading axis						
unit:		Linear / angular position						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified		link		Not classified		
DOUBLE	\$PA_CPLOUTSC [31,31]						reference:	
description:								
-								
Index 1:		Axis identifier for the following axis						
Index 2:		Axis identifier for the leading axis						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified		link		Not classified		

DOUBLE	\$AA_CPSYNCOV [31]						reference:	
description:								
-								
Index 1:		Axis/Spindle Identifier						
unit:		Linear / angular speed						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search				link		Not classified		
-								
DOUBLE	\$AA_CPSYNFIP [31]						reference:	
description:								
-								
Index 1:		Axis/Spindle Identifier						
unit:		Linear / angular position						
min.:		-1,8E308	max.:		1,8E308	std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		Cross-channel		
block search				link		Not classified		
-								
DOUBLE	\$AA_CPSYNFIV [31]						reference:	
description:								
-								

Axial system variables

Index 1:		Axis/Spindle Identifier					
unit:		Linear / angular speed					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stop	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
-				Cross-channel			
block search				link			
Not classified				Not classified			
DOUBLE \$PA_CPSYNCOP [31]							
reference:							
description:							
-							
Index 1:		Axis/Spindle Identifier					
unit:		Linear / angular position					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
-				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE \$PA_CPSYNFIP [31]							
reference:							
description:							
-							
Index 1:		Axis/Spindle Identifier					
unit:		Linear / angular position					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
-				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE \$PA_CPSYNCOV [31]							
reference:							
description:							
-							
Index 1:		Axis/Spindle Identifier					
unit:		Linear / angular speed					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
-				channel-specific			
block search				link			
Not classified				Not classified			

DOUBLE	\$PA_CPSYNFIV [31]						reference:	
description:								
-								
Index 1:	Axis/Spindle Identifier							
unit:	Linear / angular speed							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	-	0	-		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	Not classified			
DOUBLE	\$AA_ITR [31,4]						reference:	
description:								
The axial variable \$AA_ITR[ax] determines the current setpoint value of an axis at the output of the nth chained transformation.								
The following applies to the data of the transformation layer:								
Transformation layer 0: The positions correspond to the BCS positions, that means \$AA_ITR[x, 0] corresponds to \$AA_IB[x]								
Transformation layer 1: Position setpoint of the axis at the output of the 1st transformation.								
Transformation layer 2: Position setpoint of the axis at the output of the 2nd transformation.								
Transformation layer 3: Position setpoint of the axis at the output of the 3rd transformation.								
Transformation layer 4: Position setpoint of the axis at the output of the 4th transformation, that means \$AA_ITR[x, 4] corresponds to \$AA_IM[x]								
If the transformation chain does not consist of 4 single transformations, then the highest layers return the same setpoint values.								
Index 1:	-							
Index 2:	-							
unit:	Linear / angular position							
min.:	-1,8E308	max.:	1,8E308	std:	0.0			
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:	channel-specific			
block search	Not classified			link	Not classified			

Axial system variables

DOUBLE	\$AA_IBC [31]						Current setpoint value of a cartesian axis	reference:	
description:									
The axial variable \$AA_IBC[ax] determines the position setpoint of a cartesian axis lying between BCS and MCS. "Cartesian" means that the axis is a linear axis which lies plane-parallel to a coordinate axis in a clockwise coordinate system.									
This value is returned if a geometry axis is still cartesian at the output of the nth transformation.									
The axis identifier used must represent a geometry axis in the BCS, otherwise the variable returns the value 0.									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
DOUBLE	\$VA_IW [31]						Current actual WCS value of an axis	reference:	
description:									
The variable \$VA_IW[ax] determines the encoder position of an axis retransformed into the WCS. The WCS value contains all axial override components (DRF, AA_OFF, ext. zero offset etc.) and offset values (CEC etc.). For performance reasons, the positions are only calculated once in each IPO cycle. The variable does not change its value when it is read within an IPO cycle, although the actual value could have changed.									
When transformations are active, it must be noted that the transformation of the actual values into the BCS can be very time-consuming in the IPO cycle. An adequately long IPO cycle must be set in this case.									
Index 1:									
unit: Linear / angular position									
min.: -1,8E308 max.: 1,8E308 std: 0.0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
DOUBLE	\$VA_IB [31]						Current BCS encoder position of an axis	reference:	
description:									
The variable \$VA_IB[ax] determines the encoder position of an axis retransformed into the BCS. The BCS value contains all axial override components (DRF, AA_OFF, ext. zero offset etc.) and offset values (CEC etc.). For performance reasons, the positions are calculated only once in each IPO cycle. The variable does not change its value when it is read within an IPO cycle, although the actual value could have changed.									
When transformations are active, it must be noted that the transformation of the actual values into the BCS can be very time-consuming in the IPO cycle. An adequately long IPO cycle must be set in this case.									

Index 1:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	
DOUBLE \$VA_IBC [31]								Current cartesian BCS encoder position of an axis	
description:								reference:	
<p>The variable \$VA_IBC[<Geo-Axis>] determines the encoder position of a cartesian axis lying between the BCS and MCS. "Cartesian" means that the axis is a linear axis which lies plane-parallel to a coordinate axis in a clockwise coordinate system. The axis identifier used can be a geometry, channel or machine axis identifier. This identifier must represent a geometry axis in the BCS, otherwise the variable returns the value 0.0. For performance reasons, the positions are calculated only once in each IPO cycle. The variable does not change its value when it is read within an IPO cycle, although the actual value could have changed.</p> <p>When transformations are active, it must be noted that the transformation of the actual values into the BCS can be very time-consuming in the IPO cycle. An adequately long IPO cycle must be set in this case.</p>									
Index 1:								-	
unit:								Linear / angular position	
min.:		-1,8E308		max.:		1,8E308		std:	0.0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:				channel-specific	
block search				link				Not classified	

Axial system variables

DOUBLE	\$VA_ITR [31,4]		Current actual value at the output of the nth transformation			reference:	
description:							
The axial variable \$VA_ITR[ax, n] determines the current encoder position of an axis at the output of the nth chained transformation.							
The following applies to the data of the transformation layer:							
Transformation layer 0: The positions correspond to the BCS positions, that means \$VA_ITR[x, 0] corresponds to \$VA_IB[x]							
Transformation layer 1: Position setpoint of the axis at the output of the 1st transformation.							
Transformation layer 2: Position setpoint of the axis at the output of the 2nd transformation.							
Transformation layer 3: Position setpoint of the axis at the output of the 3rd transformation.							
Transformation layer 4: Position setpoint of the axis at the output of the 4th transformation, that means \$VA_ITR[x, 4] corresponds to \$VA_IM[x]							
If the transformation chain does not consist of 4 single transformations, then the highest layers return the same setpoint values.							
When transformations are active, it must be noted that the transformation of the actual values into the BCS can be very time-consuming in the IPO cycle. An adequately long IPO cycle must be set in this case.							
Index 1:		-					
Index 2:		-					
unit:		Linear / angular position					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			
DOUBLE	\$AA_ATOL [31]		Active axis tolerance			reference:	
description:							
\$AA_ATOL defines the axis tolerance for compressors and smoothing that was active during the preparation of the current main run block.							
Index 1:		-					
unit:		Linear / angular position					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search				link			
Not classified				Not classified			

DOUBLE	\$PA_ATOL [31]		Programmed axis tolerance			reference:	
description:							
\$PA_ATOL states the axis tolerance for compressors and smoothing programmed in the part program. If no value is programmed, the variable returns -1.							
Index 1:							
unit: Linear / angular position							
min.:		-1.0	max.:		1,8E308	std: 0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	-	0	-	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified
DOUBLE	\$AA_FGREF [31]		Active radius for rotary axis path			reference:	
description:							
\$AA_FGREF defines the radius with which a rotary axis contributes to the path distance. The default value is 180mm/PI = 57,296mm. This corresponds to 1mm per degree.							
Index 1:							
unit: mm							
min.:		-1,8E308	max.:		1,8E308	std: 0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified
BOOL	\$AA_FGROU [31]		Effect of an axis on the path velocity			reference:	
description:							
If the path of an axis has an effect on the path velocity in the current main run block (FGROUP), then the variable returns TRUE, otherwise FALSE.							
Index 1:							
unit: -							
min.:		FALSE	max.:		TRUE	std: FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search		Not classified			link		Not classified

Axial system variables

BOOL	\$PA_FGROUP [31]						Effect of an axis on the path velocity	reference:	
description:									
If the path of an axis has an effect on the path velocity (FGROUP), then the variable returns TRUE, otherwise FALSE.									
Index 1:									
-									
unit:									
-									
min.:			FALSE			max.:		TRUE	
						std:		FALSE	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:		channel-specific	
block search			Not classified			link		Not classified	
DOUBLE	\$PA_FGREF [31]						Factor for rotary axis path	reference:	
description:									
\$PA_FGREF defines the radius with which a rotary axis contributes to the path distance in the part program. The default value is 180mm/PI = 57,296mm. This corresponds to 1mm per degree.									
Index 1:									
-									
unit:									
mm									
min.:			-1,8E308			max.:		1,8E308	
						std:		0.0	
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	7	-	0	-			
write:	-	-	0	-	0	-			
axis identifier:						Valuation:		channel-specific	
block search			Not classified			link		Not classified	

INT	\$AA_CPMVDI [31]		Responses of the coupling module to VDI signals	reference:			
description:							
<p>The variable \$AA_CPMVDI[AX] returns a bit-coded value for the stated axis/spindle with active coupling that indicates the response of the coupling module to specific VDI signals.</p> <p>The response is determined by the CP keyword CPMVDI.</p> <p>Bit 0 Reserved</p> <p>Bit 1 Reserved</p> <p>Bit 2 Reserved</p> <p>Bit 3 = 0 DBaxis.DBX1.3, axis/spindle disable is not active for the following axis The status of the leading axis is active</p> <p>Bit 3 = 1 DBaxis.DBX1.3, axis/spindle disable is active for the following axis</p> <p>Bit 4 = 0 Dependent position components of the leading axes/spindles are active irrespective of the status of the axis/spindle disable of the particular leading axis/spindle</p> <p>Bit 4 = 1 Dependent position components of the leading axes/spindles are only active if the status of the axis/spindle disable of the leading axis/spindle corresponds to the status of the axis/spindle disable of the following axis/spindle.</p> <p>Bit 5 = 0 VDI signal DB21.DBX25.7 and/or DB21.DBX1.7, program test is not active for the following axis. The status of the leading axis is active.</p> <p>Bit 5 = 1 VDI signal DB21.DBX25.7 and/or DB21.DBX1.7, program test is active for the following axis.</p> <p>Bit 6 = 0 Dependent position components of the leading axis/spindles are active irrespective of the status of the axis/spindle disable of the particular leading axis/spindle</p> <p>Bit 6 = 1 Dependent position components of the leading axis/spindles are only active if the status of the axis/spindle disable of the leading axis/spindle corresponds to the status of the axis/spindle disable of the following axis/spindle.</p> <p>Bit 7 - 31 Reserved</p>							
Index 1:		-					
unit:							
min.:	-2147483648	max.:	2147483647	std:	0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:			valuation:			Cross-channel	
block search			Not classified			link	Not classified

Axial system variables

INT	\$AA_AX_DISABLE_SRC [31]				Source of the axis/spindle disable	reference:	
description:							
\$AA_AX_DISABLE_SRC							
Bit mask that returns the source of a currently active axis/spindle disable.							
The data is bit-coded so that individual states can be masked or evaluated separately.							
Bit0 = 1: Resulting state from all sources: axis/spindle disable active.							
Bit1 = 1: Axial signal axis/spindle disable triggered by PLC is active.							
Bit2 = 1: Channel-specific program test is active.							
Bit3 = 1: Axiale suppression of the programm test triggered by PLC is active.							
Bit4 = 1: Axial signal program test (power save mode) is active.							
Bit5 = 1: Serupro is active.							
Bit6 = 1: Link object overall state is axis/spindle disable is active.							
Bit7 = 1: Link object overall state is real traversing is active.							
Index 1:							
-							
unit:							
-							
min.: 0 max.: 7 std: 0							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search Not classified				link Not classified			
BOOL	\$AA_AX_DISABLE [31]				Status of the axis/spindle disable	reference:	
description:							
\$AA_AX_DISABLE							
0: Axis/spindle disable is inactive.							
1: Axis/spindle disable is active.							
Index 1:							
-							
unit:							
-							
min.: FALSE max.: TRUE std: FALSE							
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation: channel-specific			
block search Not classified				link Not classified			

INT	\$AA_MASL_DEF [31]		Coupling definition of master slave			reference:	
description:							
The current status of a master-slave coupling.							
Val. 0: Axis is not a slave axis or no coupling is active.							
Value > 0: Coupling is active, the relevant machine axis number of the master axis is supplied.							
\$AA_MASL_STAT[X]							
Index 1:							
unit:							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:			channel-specific	
block search		Not classified			link		Not classified
INT	\$AA_MACHAX [31]		Assignment of the physical axis			reference:	
description:							
The NCU and machine axis are recorded for one axis, this represents the physical image of the axis. For this purpose, the NCU ID is recorded from the 10000 place, e.g. 20005: NCU 2 axis 5. Without NCU link, i.e. if there is only one NCU, only the number of the machine axis is recorded. In this case, the NCU ID is equal to zero.							
If the machine axis identifier is used, the machine axis on this NCU must be assigned to at least one channel, otherwise alarm 17040 channel %1: block %2 impermissible axis index is reported.							
Index 1:							
unit:							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:			Cross-channel	
block search		Not classified			link		No restrictions

Axial system variables

INT	\$AA_IPO_NC_CHANAX [31]		Assignment to NC, channel and channel number of the interpolator.		reference:	
description:						
If the axis is currently interpolated on this NCU , the channel and channel axis number are recorded in such a way that they define the interpolator of the axis. In this case, the channel is recorded from the hundredth place and the channel axis number from the units position, e.g. 1005 - channel 10 channel axis 5. These values are always lower than 10000.						
If the axis is currently interpolated on another NCU, the NCU identifier of the interpolating NCU and the global axis number of the machine axis are recorded. In this case, the NCU is recorded from the 10000 position, e.g. 20203: NCU 2 and the global axis number is 203. This global axis number can then be used to determine the interpolating channel and channel axis number on the other NCU, with NCU ID 2, with \$AN_IPO_CHANAX[203].						
If the machine axis identifier is used, the machine axis on this NCU must be assigned to at least one channel, otherwise alarm 17040 channel %1: set %2 impermissible axis index is reported.						
Index 1:						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stop	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:					valuation:	Cross-channel
block search		Not classified		link	No restrictions	
INT	\$VA_IPO_NC_CHANAX [31]		Assignment of machine axis to NC or channel and chnl. axis of the interpolator.		reference:	
description:						
If the machine axis is currently interpolated on this NCU , the channel and channel axis number are recorded in such a way that they define the interpolator of the axis. In this case, the channel is recorded from the hundredth place and the channel axis number from the unit place, e.g. 1005 - channel 10 channel axis 5. These values are always lower than 10000.						
If the machine axis is currently interpolated on another NCU, the NCU identifier of the interpolating NCU and the global axis number of the machine axis are recorded. In this case, the NCU is recorded from the 10000 place, e.g. 20103: NCU 2 and the global axis number is 103. These global axis numbers can then be used to determine the interpolating channel and channel axis number on the other NCU, with NCU ID 2, with \$AN_IPO_CHANAX[103].						
If a machine axis is not used , the Alarm 17040 channel %1: block %2 impermissible axis index is reported.						
Index 1:						
unit:						
min.: -2147483648 max.: 2147483647 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	run in stop	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:					valuation:	channel-specific
block search		Not classified		link	No restrictions	

1.27 Safety Integrated

INT	\$A_STOPESI						Stop E active	reference:	
description:									
\$A_STOPESI									
Current Safety Integrated Stop E for any axis:									
Val. 0: No Stop E									
Value not 0: For one of the axes, a Stop E is currently active									
unit:									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
Not classified									
BOOL	\$A_INSE [64]						External NCK SPL input signal	reference:	
description:									
\$A_INSE[n]									
n = bit number (1...64)									
External NCK SPL input signal									
NCK SPL interface for SPL control signal I/O interface logic									
Index 1: n: Number of input 1 - ...									
unit:									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search				link			Not classified		
Not classified									
INT	\$A_INSED [2]						External NCK SPL input signals (32-bit)	reference:	
description:									
\$A_INSED[n]									
n = doubleword number (1,2)									
External NCK SPL input signals (32-bit)									
NCK SPL interface for SPL control signal I/O interface logic									

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Index 1:	n: Number of input word 1 - ...					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
BOOL	\$A_INSEP [64]			External PLC SPL input signal		reference:
description:						
\$A_INSEP[n]						
n = bit number (1...64)						
Image of an external PLC SPL input signal						
PLC SPL interface for SPL control signal I/O interface logic						
Readable only during the SPL start-up phase						
Index 1:	n: Number of input 1 - ...					
unit:	-					
min.:	FALSE	max.:	TRUE	std:	FALSE	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	
INT	\$A_INSEPD [2]			External PLC SPL input signals (32-bit)		reference:
description:						
\$A_INSEPD[n]						
n = doubleword number (1,2)						
Image of external PLC SPL input signals (32-bit)						
PLC SPL interface for SPL control signal I/O interface logic						
Readable only during the SPL start-up phase						
Index 1:	n: Number of input word 0 - ...					
unit:	-					
min.:	-2147483648	max.:	2147483647	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	Not classified	

BOOL	\$A_OUTSE [64]					External NCK SPL output signal	reference:	
description:								
\$A_OUTSE[n]								
n = bit number (1...64)								
External NCK SPL output signal								
NCK SPL interface for SPL status signal I/O interface logic								
Can be written only from SPL (SAFE.SPF program)								
Index 1: n: Number of output 1 - ...								
unit: -								
min.: FALSE		max.: TRUE		std:		FALSE		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	runin stp	X	/	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$A_OUTSED [2]					External NCK SPL output signals (32-bit)	reference:	
description:								
\$A_OUTSED[n]								
n = doubleword number (1,2)								
External NCK SPL output signals (32-bit)								
NCK SPL interface for SPL status signal I/O interface logic								
Can be written only from SPL (SAFE.SPF program)								
Index 1: n: Number of output word 1 - ...								
unit: -								
min.: -2147483648		max.: 2147483647		std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	runin stp	X	/	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

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BOOL	\$A_OUTSEP [64]					External PLC SPL output signal	reference:	
description:								
\$A_OUTSEP[n] n = bit number (1...64) Image of an external PLC SPL output signal PLC SPL interface for SPL status signal I/O interface logic Readable only during the SPL start-up phase								
Index 1: n: Number of output 1 - ...								
unit: -								
min.: FALSE max.: TRUE std: FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$A_OUTSEPD [2]					External PLC SPL output signals (32-bit)	reference:	
description:								
\$A_OUTSEPD[n] n = doubleword number (1,2) Image of external PLC SPL output signals (32-bit) PLC SPL interface for SPL status signal I/O interface logic Readable only during the SPL start-up phase								
Index 1: n: Number of output word 0 - ...								
unit: -								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
BOOL	\$A_INSI [64]					Internal NCK SPL input signal	reference:	
description:								
\$A_INSI[n] n = bit number (1...64) Internal NCK SPL input signal Interface to the status signals of the axial NCK monitoring channels								

Index 1:		n: Number of input 1 - ...					
unit:		-					
min.:		FALSE		max.:		TRUE	
std:		FALSE					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
-				channel-specific			
block search		Not classified		link		Not classified	

INT	\$A_INSID [2]	Internal NCK SPL input signals (32-bit)					reference:	
description:								
\$A_INSID[n]								
n = doubleword number (1,2)								
Internal NCK SPL input signals (32-bit)								
Interface to the status signals of the axial NCK monitoring channels								
Index 1:		n: Number of input word 1 - ...						
unit:		-						
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
-				channel-specific				
block search		Not classified		link		Not classified		

BOOL	\$A_INSIP [64]	Internal PLC SPL input signal					reference:	
description:								
\$A_INSIP[n]								
n = bit number (1...64)								
Image of an internal PLC SPL input signal								
Interface to the status signals of the axial drive monitoring channels								
Readable only during the SPL start-up phase								
Index 1:		n: Number of input 1 - ...						
unit:		-						
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:				
-				channel-specific				
block search		Not classified		link		Not classified		

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INT	\$A_INSIPD [2]						Internal PLC SPL input signals (32-bit)	reference:	
description:									
\$A_INSIPD[n]									
n = doubleword number (1,2)									
Image of internal PLC SPL input signals (32-bit)									
Interface to the status signals of the axial drive monitoring channels									
Readable only during the SPL start-up phase									
Index 1: n: Number of input word 1 - ...									
unit: -									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	-	-	0	-	0	-			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		
BOOL	\$A_OUTSI [64]						Internal NCK SPL output signal	reference:	
description:									
\$A_OUTSI[n]									
n = bit number (1...64)									
Internal NCK SPL output signal									
Interface to the control signals of the axial NCK monitoring channels									
Can be written only from SPL (SAFE.SPF program)									
Index 1: n: Number of output 1 - ...									
unit: -									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	/	X	/	X			
write:	runin stp	X	/	-	0	X			
axis identifier:				Valuation:			channel-specific		
block search		Not classified			link		Not classified		

INT	\$A_OUTSID [2]					Internal NCK SPL output signals (32-bit)	reference:	
description:								
\$A_OUTSID[n]								
n = doubleword number (1,2)								
Internal NCK SPL output signals (32-bit)								
Interface to the control signals of the axial NCK monitoring channels								
Can be written only from SPL (SAFE.SPF program)								
Index 1: n: Number of output word 1 - ...								
unit: -								
min.: -2147483648 max.: 2147483647 std: 0								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	runin stp	X	7	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
BOOL	\$A_OUTSIP [64]					Internal PLC SPL output signal	reference:	
description:								
\$A_OUTSIP[n]								
n = bit number (1...64)								
Image of an internal PLC SPL output signal								
Interface to the control signals of the axial drive monitoring channels								
Readable only during the SPL start-up phase								
Index 1: n: Number of output 1 - ...								
unit: -								
min.: FALSE max.: TRUE std: FALSE								
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

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INT	\$A_OUTSIPD [2]		Internal PLC SPL output signals (32-bit)			reference:	
description:							
\$A_OUTSIPD[n]							
n = doubleword number (1,2)							
Image of internal PLC SPL output signals (32-bit)							
Interface to the control signals of the axial drive monitoring channels							
Readable only during the SPL start-up phase							
Index 1:		n: Number of output word 1 - ...					
unit:		-					
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
BOOL	\$A_MARKERSI [64]		NCK SPL flags			reference:	
description:							
\$A_MARKERSI[n]							
n = bit number (1...64)							
NCK SPL flags							
Can be written only from SPL (SAFE.SPF program)							
Index 1:		n: Number of flag 1 - ...					
unit:		-					
min.:		FALSE		max.:		TRUE	
				std:		FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	
INT	\$A_MARKERSID [2]		NCK SPL flag word			reference:	
description:							
\$A_MARKERSID[n]							
n = doubleword number (1,2)							
NCK SPL flag word (32-bit)							
Can be written only from SPL (SAFE.SPF program)							
Index 1:		n: Number of flag word 1 - ...					
unit:		-					
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	runin stp	X	/	-	0	X	
axis identifier:				Valuation:		channel-specific	
block search		Not classified		link		Not classified	

BOOL	\$A_MARKERSIP [64]						PLC SPL flags	reference:	
description:									
\$A_MARKERSIP[n]									
n = bit number (1...64)									
Image of a PLC SPL flag									
Readable only during the SPL start-up phase									
Index 1: n: Number of flag 1 - ...									
unit: -									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			
INT	\$A_MARKERSIPD [2]						PLC SPL flag word	reference:	
description:									
\$A_MARKERSIPD[n]									
n = doubleword number (1,2)									
Image of a PLC SPL flag word (32-bit)									
Readable only during the SPL start-up phase									
Index 1: n: Number of flag word 1 - ...									
unit: -									
min.: -2147483648 max.: 2147483647 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			

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DOUBLE	\$A_TIMERSI [16]					SPL timers	reference:	
description:								
\$A_TIMERSI[n]								
n=timer number (1...16)								
SPL timers								
Unit in seconds								
The time is counted internally in multiples of the interpolation cycle.								
Incrementation of the time variable is started by value assignment								
\$A_TIMERSI[n]=<start value>								
Incrementation of a time variable is stopped through assignment of a negative value								
\$A_TIMERSI[n]=-1								
The current timer count can be read while the time variable is running or stopped. When the time variable is stopped by assigning -1, the last count value remains stored in the variable and can continue to be read.								
The timers are not stopped by a channel/mode group reset.								
index 1:		n: Number of timer 1 - ...						
unit:								
min.:		-1,8E308		max.:		1,8E308		
				std:		0.0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	runin stp	X	/	-	0	X		
axis identifier:				Valuation:		channel-specific		
block search		Not classified		link		Not classified		
INT	\$A_STATSID					SPL status signals	reference:	
description:								
\$A_STATSID								
Status of data cross-check between NCK and PLC (SPL DCC)								
if the value does not equal zero, an error has occurred in the SPL DCC.								
Meaning								
Bit 0 ... 27: DCC error in input/output signals or flags								
Bit 28:DCC error "SPL protection status" (\$MN_PREVENT_SYNACT_LOCK status not equal to DB18.DBX36.0 (SPL READY))								
Bit 29:Time error during communications between NCK and PLC (all ext. NCK SPL outputs are set to zero in 5 sec. and the PLC switches to Stop)								
Bit 30: Stop signaled from PLC to NCK								
unit:								
min.:		-2147483648		max.:		2147483647		
				std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	/	X	/	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation:		channel-specific		
block search		Not classified		link		Not classified		

BOOL	\$A_CMDSI [16]					SPL DCC control signals	reference:	
description:								
\$A_CMDSI[n]								
n = bit number (1..0.16)								
Control word for data cross-check between NCK and PLC (SPL DCC).								
n = 1: Increase time for signal change monitoring to 10 s.								
Can be written only from SPL (SAFE.SPF program)								
Index 1: n: Number of control signal for SPL data cross-check								
unit: -								
min.: FALSE		max.: TRUE		std:		FALSE		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	runin stp	X	7	-	0	X		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				
INT	\$A_LEVELSID					SPL DCC level	reference:	
description:								
\$A_LEVELSID								
Displays the fill level for signal change monitoring during data cross-check between NCK and PLC SPL (SPL DCC).								
Specifies the number of signals currently tagged for cross-checking.								
The value is already zero if an SPL signal has different levels on the NCK and PLC but the allowed discrepancy time for the signals (2 sec) has not yet expired.								
unit: -								
min.: -2147483648		max.: 2147483647		std:		0		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	runin stp	X	7	X	7	X		
write:	-	-	0	-	0	-		
axis identifier:				Valuation: channel-specific				
block search Not classified				link Not classified				

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INT	\$A_XFAULTSI						DCC status	reference:	
description:									
\$A_XFAULTSI									
Information on Stop F for a safety axis:									
Bit 0 = 1: An actual value error has been detected by the data cross-check between NCK and SIMODRIVE 611D for any safety axis.									
Bit 1 = 1: Any error on any axis has been detected by the data cross-check between NCK and SIMODRIVE 611D, and the waiting time before triggering Stop B on that axis is running or has expired (\$MA_SAFE_STOP_SWITCH_TIME_F).									
unit:									
min.: 0 max.: 3 std: 0									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			
BOOL	\$A_PLCSIIN [32]						SPL signal from PLC to NCK	reference:	
description:									
\$A_PLCSIIN[n]									
n = bit number (1..0.32)									
Single-channel signals from PLC SPL (DB18) to NCK SPL.									
Application:									
\$A_MARKERSI[1] = \$A_PLCSIIN[1] ; Signal from PLC-SPL									
index 1:			n: Number of signal 1 - ... from PLC to NCK						
unit:									
min.: FALSE max.: TRUE std: FALSE									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	runin stp	X	7	X	7	X			
write:	-	-	0	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search			Not classified		link	Not classified			

BOOL	\$A_PLCSIOUT [32]			SPL signal from NCK to PLC		reference:	
description:							
\$A_PLCSIOUT[n] n = bit number (1..0.32) Single-channel signals from NCK SPL to PLC SPL (DB18). Application: \$A_PLCSIOUT[1] = \$A_MARKERSI[1] ; Signal to PLC-SPL Can be written only from SPL (SAFE.SPF program)							
index 1: n: Number of signal 1 - ... from NCK to PLC							
unit: -							
min.: FALSE		max.: TRUE		std: FALSE			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	runin stp	X	7	-	0	X	
axis identifier:				valuation: channel-specific			
block search		Not classified		link		Not classified	
INT	\$A_FSDP_ERR_REAC [3]			Response to communications error F_SENDDP		reference:	
description:							
\$A_FSDP_ERR_REAC[n] n = F_SENDDP relationship (1,2,3) The system variable sets the response to the occurrence of a communications error. The response to a communications error caused by a fault in the communication path or by the intentional switching off one of the system components can be specifically defined according to the current dependency of the two system components involved in the F_DP communication relationship. 0 = Alarm 27350 + stop D/E 1 = Alarm 27350 2 = Alarm 27351 (display only, self-clearing) 3 = No alarm displayed							
index 1: -							
unit: -							
min.: 0		max.: 3		std: 0			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	runin stp	X	7	-	0	X	
axis identifier:				valuation: channel-specific			
block search		Not classified		link		Not classified	

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BOOL	\$A_FSDP_ERROR [3]		Communications error F_SENDDP		reference:	
description:						
\$A_FSDP_ERROR[n]						
n = F_SENDDP relationship (1,2,3)						
The system variable indicates whether there is a communications error. The cause of the error determined by F_SENDDP is contained in the diagnostic data \$A_FSDP_DIAG.						
TRUE = Communications error						
FALSE = Normal operation						
Index 1:						
unit:						
min.: FALSE max.: TRUE std: FALSE						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified
BOOL	\$A_FSDP_SUBS_ON [3]		Substitute values active in receiver		reference:	
description:						
\$A_FSDP_SUBS_ON[[n]						
n = F_SENDDP relationship (1,2,3)						
The system variable states whether substitution values at the F_RECVDP (receiver) are output to the application.						
TRUE = Output of substitution values						
FALSE = Output of process values						
Index 1:						
unit:						
min.: FALSE max.: TRUE std: FALSE						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified

INT	\$A_FSDP_DIAG [3]	Cause of the communications error F_SENDDP	reference:			
description:						
\$A_FSDP_DIAG[n]						
n = F_SENDDP relationship (1,2,3)						
The system variable indicates the cause of the communication (bit 4 - 5) or system (bit 13 - 15) error determined by F_SENDDP.						
Bits 0 - 3: Reserved						
Bit 4: 1 = Timeout detected						
Bit 5: 1 = Sequence number error detected						
Bit 6: 1 = CRC error detected						
Bits 7 - 12: Reserved						
Bit 13: 1 = Discrepancies in the F telegram data (TelegramDiscrepancy)						
Bit 14: 1 = Sign-of-life monitoring (LifeSign)						
Bit 15: 1 = Asynchronous error state (StateFault)						
Index 1:						
-						
unit:						
-						
min.: 0 max.: 0x8070 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search Not classified				link Not classified		
INT	\$A_FRDP_SUBS [3]	Substitute value F_RECVDP	reference:			
description:						
\$A_FRDP_SUBS[n]						
n = F_RECVDP relationship (1,2,3)						
The system variable defines the substitution values output to the SPL in the following states:						
- Start of cyclic communication						
- Communications error						
Index 1:						
-						
unit:						
-						
min.: 0 max.: 0xFFFF std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	/	X	/	X
write:	runin stp	X	/	-	0	X
axis identifier:				Valuation: channel-specific		
block search Not classified				link Not classified		

Safety Integrated

INT	\$A_FRDP_ERR_REAC [3]		Response to communications error F_RECVDP		reference:	
description:						
\$A_FRDP_ERR_REAC[n]						
n = F_RECVDP relationship (1,2,3)						
The system variable sets the response to the occurrence of a communications error. The response to a communications error caused by a fault in the communication path or by the intentional switching off one of the system components can be specifically defined according to the current dependency of the two system components involved in the F_DP communication relationship.						
0 = Alarm 27350 + stop D/E						
1 = Alarm 27350						
2 = Alarm 27351 (display only, self-clearing)						
3 = No alarm displayed						
Index 1:						
-						
unit:						
-						
min.: 0						
max.: 3						
std.: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	runin stp	X	7	-	0	X
axis identifier:				Valuation:		
				channel-specific		
block search		Not classified		link		Not classified
BOOL	\$A_FRDP_ERROR [3]		communications error F_RECVDP		reference:	
description:						
\$A_FRDP_ERROR[n]						
n = F_RECVDP relationship (1,2,3)						
The system variable indicates whether there is a communications error. The cause of the error determined by F_RECVDP is contained in the diagnostic data \$A_FRDP_DIAG.						
TRUE = communications error						
FALSE = Normal operation						
Index 1:						
-						
unit:						
-						
min.: FALSE						
max.: TRUE						
std.: FALSE						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	runin stp	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation:		
				channel-specific		
block search		Not classified		link		Not classified

BOOL	\$A_FRDP_SUBS_ON [3]		Substitute values active			reference:	
description:							
\$A_FRDP_SUBS_ON[[n]							
n = F_RECVDP relationship (1,2,3)							
The system variable states whether substitution values are output to the application.							
TRUE = Output of substitution values							
FALSE = Output of process values							
Index 1:							
-							
unit:							
-							
min.:		FALSE		max.:		TRUE	
std:		FALSE					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:				
			channel-specific				
block search			Not classified		link		Not classified
BOOL	\$A_FRDP_ACK_REQ [3]		User acknowledgement requested			reference:	
description:							
\$A_FRDP_ACK_REQ[[n]							
n = F_RECVDP relationship (1,2,3)							
The system variable indicates that, after a communications error F telegrams are again being exchanged cyclically without error, and that user acknowledgement via interface signal DB18.FRDP_ACK_REI or channel_1 reset is still required to acknowledge the error and output the process values.							
Index 1:							
-							
unit:							
-							
min.:		FALSE		max.:		TRUE	
std:		FALSE					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	/	X	/	X	
write:	-	-	0	-	0	-	
axis identifier:			Valuation:				
			channel-specific				
block search			Not classified		link		Not classified

Safety Integrated

INT	\$A_FRDP_DIAG [3]			Cause of the communications error F_RECVDP		reference:	
description:							
\$A_FRDP_DIAG[n]							
n = F_RECVDP relationship (1,2,3)							
The system variable indicates the cause of the communication (bit 4 - 5) or system (bit 13 - 15) error determined by F_RECVDP.							
Bits 0 - 3: Reserved							
Bit 4: 1 = Timeout detected							
Bit 5: 1 = Sequence number error detected							
Bit 6: 1 = CRC error detected							
Bits 7 - 12: Reserved							
Bit 13: 1 = Discrepancies in the F telegram data (TelegramDiscrepancy)							
Bit 14: 1 = Sign-of-life monitoring (LifeSign)							
Bit 15: 1 = Asynchronous error state (StateFault)							
Index 1:							
-							
unit:							
-							
min.:		0		max.:		0x8070	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			channel-specific
block search			Not classified	link			Not classified
BOOL	\$A_FRDP_SENDDMODE [3]			Safety mode inactive in the communication partner		reference:	
description:							
\$A_FRDP_SENDDMODE[n]							
n = F_RECVDP relationship (1,2,3)							
The system variable shows the current mode of the F-CPU of the F_SENDDDP communication partner:							
TRUE = The F-CPU is in deactivated safety mode							
FALSE = The F-CPU is in safety mode							
Index 1:							
-							
unit:							
-							
min.:		FALSE		max.:		TRUE	
				std:		FALSE	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			channel-specific
block search			Not classified	link			Not classified

DOUBLE	\$VA_IS [31]		Safe actual position NCK			reference:	
description:							
\$VA_IS[X]							
X = axis identifier							
Safe actual position for NCK monitoring channel							
Index 1:							
unit: Linear / angular position							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

INT	\$VA_STOPSI [31]		Stop by Safety Integrated			reference:	
description:							
\$VA_STOPSI[X]							
X = axis identifier							
Current Safety Integrated Stop for the relevant axis							
Value Meaning							
-1No Stop							
0Stop A							
1Stop B							
2Stop C							
3Stop D							
4Stop E							
5Stop F							
10Test Stop NC							
11Test ext. pulse suppression							
Index 1:							
unit: -							
min.:		-1		max.:		11	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	runin stp	X	7	X	7	X	
write:	-	-	0	-	0	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		Not classified

User-specific system variables

INT	\$VA_XFAULTSI [31]		Stop F by data cross-check error active		reference:	
description:						
\$VA_XFAULTSI[X] X = axis identifier Information about Safety Integrated Stop F for this axis: Bit 0 set: An actual value error has been detected by the data cross-check between NCK and SIMODRIVE 611D. Bit 1 set: Any error has been detected by the data cross-check between NCK and SIMODRIVE 611D, and the waiting time before triggering Stop B (\$MA_SAFE_STOP_SWITCH_TIME_F) is running or has expired.						
Index 1:						
unit:						
min.: 0 max.: 3 std: 0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	-	-	0	-	0	-
axis identifier:				Valuation: channel-specific		
block search		Not classified		link		Not classified

1.28 User-specific system variables

DOUBLE	\$YG_RM [n]		Synact Real parameters for GUD2 block		reference:	
description:						
SYG_RM[n] Synact Real parameters in GUD2 block. A protection level can be assigned to the parameters with REDEF. In order to create the parameters, at least four GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES. The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[1])						
Index 1:						
unit:						
min.: -1,8E308 max.: 1,8E308 std: 0.0						
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	7	X	7	X
write:	X	X	7	X	7	X
axis identifier:				Valuation: channel-specific		
block search		Program sensitive		link		No restrictions

INT	SYG_IM [n]						Synact Integer parameters for GUD2 block	reference:	
description:									
SYG_IM[n] Synact Integer parameters in GUD2 block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least four									
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.									
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_INT[1])							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	X	/	X			
axis identifier:						Valuation:			channel-specific
block search			Program sensitive			link			No restrictions
BOOL	SYG_BM [n]						Synact Boolean parameters for GUD2 block	reference:	
description:									
SYG_BM[n] Synact Boolean parameters in GUD2 block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least four									
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.									
Index 1:		The maximum number of SynactGUD Boolean parameters is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[1])							
unit:									
min.:		FALSE		max.:		TRUE		std:	FALSE
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	X	/	X			
axis identifier:						Valuation:			channel-specific
block search			Program sensitive			link			No restrictions
AXIS	SYG_AM [n]						Synact Axis parameters for GUD2 block	reference:	
description:									
SYG_AM[n] Synact axis parameters in GUD2 block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least four									
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.									

User-specific system variables

Index 1:	The maximum number of SynactGUD axis is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_AXIS[1])						
unit:	-						
min.:			max.:			std:	NOAXISNUM
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:		channel-specific	
block search	Program sensitive			link		No restrictions	
CHAR	SYG_CM [n]			Synact char parameters for GUD2 block		reference:	
description:							
SYG_CM[n] Synact char parameters in GUD2 block.							
A protection level can be assigned to the parameters with REDEF.							
In order to create the parameters, at least four							
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.							
Index 1:	The maximum number of SynactGUD char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[1])						
unit:	-						
min.:	0		max.:	255		std:	0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:		channel-specific	
block search	Program sensitive			link		No restrictions	
STRING	SYG_SM [n]			Synact string parameters for GUD2 block		reference:	
description:							
SYG_SM[n] Synact parameter string in GUD2 block. The maximum string length has been limited to 31 characters.							
A protection level can be assigned to the parameters with REDEF.							
In order to create the parameters, at least four							
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.							
Index 1:	The maximum number of SynactGUD string is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[1])						
Index 3:	-						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:		channel-specific	
block search	Program sensitive			link		No restrictions	

User-specific system variables

DOUBLE	SYG_RU [n]		Synact Real parameters for UGUD block		reference:	
description:						
SYG_RU[n] Synact Real parameters in UGUD block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least three						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:		The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[2])				
unit:						
min.:		-1,8E308		max.:		1,8E308
std:		0.0				
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:					Valuation:	channel-specific
block search			Program sensitive		link	No restrictions
INT	SYG_IU [n]		Synact Integer parameters for UGUD block		reference:	
description:						
SYG_IU[n] Synact Integer parameters in UGUD block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least three						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_INT[2])				
unit:						
min.:		-2147483648		max.:		2147483647
std:		0				
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:					Valuation:	channel-specific
block search			Program sensitive		link	No restrictions
BOOL	SYG_BU [n]		Synact Boolean parameters for UGUD block		reference:	
description:						
SYG_BU[n] Synact Boolean parameters in UGUD block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least three						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						

User-specific system variables

Index 1:	The maximum number of SynactGUD Boolean parameters is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[2])					
unit:	-					
min.:	FALSE	max.:	TRUE	std:	FALSE	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
AXIS	SYG_AU [n]			Synact Axis parameters for UGUD block		reference:
description:						
SYG_AU[n] Synact Axis parameters in UGUD block. A protection level can be assigned to the parameters with REDEF. In order to create the parameters, at least three GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_AXIS[2])					
unit:	-					
min.:		max.:		std:	NOAXISNUM	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
CHAR	SYG_CU [n]			Synact char parameters for UGUD block		reference:
description:						
SYG_CU[n] Synact char parameters in UGUD block. A protection level can be assigned to the parameters with REDEF. In order to create the parameters, at least three GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD Char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[2])					
unit:	-					
min.:	0	max.:	255	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

User-specific system variables

STRING	SYG_SU [n]						Synact string parameters for UGUD block	reference:		
description:										
SYG_SU[n] Synact parameter string in UGUD block. The maximum string length has been limited to 31 characters.										
A protection level can be assigned to the parameters with REDEF.										
In order to create the parameters, at least three										
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.										
Index 1:		The maximum number of SynactGUD String is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[2])								
Index 3:		-								
unit:		-								
min.:		max.:		std:		""				
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	X	/	X	/	X				
write:	X	X	/	X	/	X				
axis identifier:				Valuation:		channel-specific				
block search		Program sensitive				link		No restrictions		
DOUBLE	SYG_R4 [n]						Synact Real parameters for GUD4 block	reference:		
description:										
SYG_R4[n] Synact Real parameters in GUD4 block.										
A protection level can be assigned to the parameters with REDEF.										
In order to create the parameters, at least four										
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.										
Index 1:		The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[3])								
unit:		-								
min.:		-1,8E308		max.:		1,8E308		std:		0.0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	X	/	X	/	X				
write:	X	X	/	X	/	X				
axis identifier:				Valuation:		channel-specific				
block search		Program sensitive				link		No restrictions		

User-specific system variables

INT	SYG_I4 [n]	Synact Integer parameters for GUD4 block					reference:	
description:								
SYG_I4[n] Synact Integer parameters in GUD4 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least four								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_INT[3])						
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:			channel-specific	
block search			Program sensitive		link		No restrictions	
BOOL	SYG_B4 [n]	Synact Boolean parameters for GUD4 block					reference:	
description:								
SYG_B4[n] Synact Boolean parameters in GUD4 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least four								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
Index 1:		The maximum number of SynactGUD Boolean parameters is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[3])						
unit:								
min.:		FALSE		max.:		TRUE		
std:		FALSE						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:			channel-specific	
block search			Program sensitive		link		No restrictions	
AXIS	SYG_A4 [n]	Synact Axis parameters for GUD4 block					reference:	
description:								
SYG_A4[n] Synact Real parameters in GUD4 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least four								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								

User-specific system variables

Index 1:	The maximum number of SynactGUD AXIS is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_AXIS[3])					
unit:						
min.:		max.:		std:	NOAXISNUM	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
CHAR	SYG_C4 [n]			Synact Char parameters for GUD4 block		reference:
description:						
SYG_C4[n] Synact Char parameters in GUD4 block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least four						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD Char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[3])					
unit:						
min.:	0	max.:	255	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
STRING	SYG_S4 [n]			Synact String parameters for GUD4 block		reference:
description:						
SYG_S4[n] Synact parameter string in GUD4 block. The maximum string length has been limited to 31 characters.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least four						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD String is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[3])					
Index 3:						
unit:						
min.:		max.:		std:	""	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

User-specific system variables

DOUBLE	SYG_R5 [n]		Synact Real parameters for GUD5 block			reference:	
description:							
SYG_R5[n] Synact Real parameters in GUD5 block.							
A protection level can be assigned to the parameters with REDEF.							
In order to create the parameters, at least five							
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.							
Index 1:		The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[4])					
unit:							
min.:		-1,8E308		max.:		1,8E308	
std:		0.0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:			channel-specific
block search			Program sensitive		link		No restrictions
INT	SYG_I5 [n]		Synact Integer parameters for GUD5 block			reference:	
description:							
SYG_I5[n] Synact Integer parameters in GUD5 block.							
A protection level can be assigned to the parameters with REDEF.							
In order to create the parameters, at least five							
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.							
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[4])					
unit:							
min.:		-2147483648		max.:		2147483647	
std:		0					
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:			channel-specific
block search			Program sensitive		link		No restrictions
BOOL	SYG_B5 [n]		Synact Boolean parameters for GUD5 block			reference:	
description:							
SYG_B5[n] Synact Boolean parameters in GUD5 block.							
A protection level can be assigned to the parameters with REDEF.							
In order to create the parameters, at least five							
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.							

User-specific system variables

Index 1:	The maximum number of SynactGUD Boolean parameters is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[4])					
unit:	-					
min.:	FALSE	max.:	TRUE	std:	FALSE	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
CHAR	SYG_A5 [n]			Synact Axis parameters for GUD5 block		reference:
description:						
SYG_A5[n] Synact Axis parameters in GUD5 block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least five						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD Axis is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_AXIS[4])					
unit:	-					
min.:		max.:		std:	NOAXISNUM	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
CHAR	SYG_C5 [n]			Synact Char parameters for GUD5 block		reference:
description:						
SYG_C5[n] Synact Char parameters in GUD5 block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least five						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD Char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[4])					
unit:	-					
min.:	0	max.:	255	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

User-specific system variables

STRING	SYG_S5 [n]					Synact String parameters for GUD5 block	reference:	
description:								
SYG_S5[n] Synact parameter string in GUD5 block. The maximum string length has been limited to 31 characters.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least five								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
Index 1:		The maximum number of SynactGUD String is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[4])						
Index 3:		-						
unit:		-						
min.:		max.:		std:		""		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:		channel-specific		
block search		Program sensitive		link		No restrictions		
DOUBLE	SYG_R6 [n]					Synact Real parameters for GUD6 block	reference:	
description:								
SYG_R6[n] Synact Real parameters in GUD6 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least six								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
Index 1:		The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[5])						
unit:		-						
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:		channel-specific		
block search		Program sensitive		link		No restrictions		

INT	SYG_I6 [n]						Synact Integer parameters for GUD6 block	reference:		
description:										
SYG_I6[n] Synact Integer parameters in GUD6 block.										
A protection level can be assigned to the parameters with REDEF.										
In order to create the parameters, at least six										
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.										
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[5])								
unit:										
min.:		2147483648		max.:		2147483647		std:		0
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	X	/	X	/	X				
write:	X	X	/	X	/	X				
axis identifier:							Valuation:		channel-specific	
block search				Program sensitive			link		No restrictions	
BOOL	SYG_B6 [n]						Synact Boolean parameters for GUD6 block	reference:		
description:										
SYG_B6[n] Synact Boolean parameters in GUD6 block.										
A protection level can be assigned to the parameters with REDEF.										
In order to create the parameters, at least six										
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.										
Index 1:		The maximum number of SynactGUD Boolean parameters is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[5])								
unit:										
min.:		FALSE		max.:		TRUE		std:		FALSE
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	X	/	X	/	X				
write:	X	X	/	X	/	X				
axis identifier:							Valuation:		channel-specific	
block search				Program sensitive			link		No restrictions	
AXIS	SYG_A6 [n]						Synact Axis parameters for GUD6 block	reference:		
description:										
SYG_A6[n] Synact Axis parameters in GUD6 block.										
A protection level can be assigned to the parameters with REDEF.										
In order to create the parameters, at least six										
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.										

User-specific system variables

Index 1:	The maximum number of SynactGUD AXIS is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_AXIS[5])					
unit:						
min.:		max.:		std:	NOAXISNUM	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
CHAR	SYG_C6 [n]	Synact Char parameters for GUD6 block			reference:	
description:						
SYG_C6[n] Synact Char parameters in GUD6 block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least six						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD Char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[5])					
unit:						
min.:	0	max.:	255	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
STRING	SYG_S6 [n]	Synact String parameters for GUD6 block			reference:	
description:						
SYG_S6[n] Synact parameter string in GUD6 block. The maximum string length has been limited to 31 characters.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least six						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD String is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[5])					
Index 3:						
unit:						
min.:		max.:		std:	""	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

User-specific system variables

DOUBLE	SYG_R7 [n]	Synact Real parameters for GUD7 block					reference:	
description:								
SYG_R7[n] Synact Real parameters in GUD7 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least seven								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
Index 1:		The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[6])						
unit:								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Program sensitive				No restrictions				
INT	SYG_I7 [n]	Synact Integer parameters for GUD7 block					reference:	
description:								
SYG_I7[n] Synact Integer parameters in GUD7 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least seven								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_INT[6])						
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:				
				channel-specific				
block search				link				
Program sensitive				No restrictions				
BOOL	SYG_B7 [n]	Synact Boolean parameters for GUD7 block					reference:	
description:								
SYG_B7[n] Synact Boolean parameters in GUD7 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least seven								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								

User-specific system variables

Index 1:	The maximum number of SynactGUD Boolean parameters is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[6])					
unit:	-					
min.:	FALSE	max.:	TRUE	std:	FALSE	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
CHAR	SYG_C7 [n]			Synact Char parameters for GUD7 block		reference:
description:						
SYG_C7[n] Synact Char parameters in GUD7 block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least seven						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD Char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[6])					
unit:	-					
min.:	0	max.:	255	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

User-specific system variables

STRING	SYG_S7 [n]						Synact String parameters for GUD7 block	reference:	
description:									
SYG_S7[n] Synact parameter string in GUD7 block. The maximum string length has been limited to 31 characters.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least seven									
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.									
Index 1:		The maximum number of SynactGUD String is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[6])							
Index 3:		-							
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	X	/	X			
axis identifier:				Valuation:			channel-specific		
block search		Program sensitive				link		No restrictions	
DOUBLE	SYG_R8 [n]						Synact Real parameters for GUD8 block	reference:	
description:									
SYG_R8[n] Synact Real parameters in GUD8 block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least eight									
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.									
Index 1:		The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[7])							
unit:									
min.:									
max.:									
std:									
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	X	/	X			
axis identifier:				Valuation:			channel-specific		
block search		Program sensitive				link		No restrictions	

User-specific system variables

INT	SYG_I8 [n]						Synact Integer parameters for GUD8 block	reference:	
description:									
SYG_I8[n] Synact Integer parameters in GUD8 block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least eight									
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.									
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_INT[7])							
unit:									
min.:		-2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	X	/	X			
axis identifier:					Valuation:		channel-specific		
block search			Program sensitive		link		No restrictions		
BOOL	SYG_B8 [n]						Synact Boolean parameters for GUD8 block	reference:	
description:									
SYG_B8[n] Synact Boolean parameters in GUD8 block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least eight									
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.									
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[7])							
unit:									
min.:		FALSE		max.:		TRUE		std:	FALSE
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	X	/	X			
axis identifier:					Valuation:		channel-specific		
block search			Program sensitive		link		No restrictions		
AXIS	SYG_A8 [n]						Synact Axis parameters for GUD8 block	reference:	
description:									
SYG_A8[n] Synact Axis parameters in GUD8 block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least eight									
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.									

User-specific system variables

Index 1:	The maximum number of SynactGUD AXIS is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_AXIS[7])					
unit:						
min.:		max.:		std:	NOAXISNUM	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
CHAR	SYG_C8 [n]	Synact Char parameters for GUD8 block			reference:	
description:						
SYG_C8[n] Synact Char parameters in GUD8 block.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least eight						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD Char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[7])					
unit:						
min.:	0	max.:	255	std:	0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	
STRING	SYG_S8 [n]	Synact String parameters for GUD8 block			reference:	
description:						
SYG_S8[n] Synact parameter string in GUD8 block. The maximum string length has been limited to 31 characters.						
A protection level can be assigned to the parameters with REDEF.						
In order to create the parameters, at least eight						
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.						
Index 1:	The maximum number of SynactGUD String is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[7])					
Index 3:						
unit:						
min.:		max.:		std:	""	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	X
write:	X	X	/	X	/	X
axis identifier:				Valuation:	channel-specific	
block search	Program sensitive			link	No restrictions	

User-specific system variables

DOUBLE	SYG_R9 [n]	Synact Real parameters for GUD9 block					reference:	
description:								
SYG_R9[n] Synact Real parameters in GUD9 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least nine								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
index 1:		The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[8])						
unit:								
min.:		-1,8E308		max.:		1,8E308		
std:		0.0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				valuation:			channel-specific	
block search			Program sensitive		link		No restrictions	
INT	SYG_I9 [n]	Synact Integer parameters for GUD9 block					reference:	
description:								
SYG_I9[n] Synact Integer parameters in GUD9 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least nine								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_INT[8])						
unit:								
min.:		-2147483648		max.:		2147483647		
std:		0						
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				valuation:			channel-specific	
block search			Program sensitive		link		No restrictions	
BOOL	SYG_B9 [n]	Synact Boolean parameters for GUD9 block					reference:	
description:								
SYG_B9[n] Synact Boolean parameters in GUD9 block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least nine								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								

User-specific system variables

Index 1:	The maximum number of SynactGUD Boolean parameters is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[8])						
unit:	-						
min.:	FALSE	max.:	TRUE	std:	FALSE		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:	channel-specific		
block search	Program sensitive			link	No restrictions		
CHAR	SYG_A9 [n]			Synact Axis parameters for GUD9 block			reference:
description:							
SYG_A9[n] Synact Axis parameters in GUD9 block. A protection level can be assigned to the parameters with REDEF. In order to create the parameters, at least nine GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.							
Index 1:	The maximum number of SynactGUD Axis is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_AXIS[8])						
unit:	-						
min.:		max.:		std:	NOAXISNUM		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:	channel-specific		
block search	Program sensitive			link	No restrictions		
CHAR	SYG_C9 [n]			Synact Char parameters for GUD9 block			reference:
description:							
SYG_C9[n] Synact Char parameters in GUD9 block. A protection level can be assigned to the parameters with REDEF. In order to create the parameters, at least nine GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.							
Index 1:	The maximum number of SynactGUD Char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[8])						
unit:	-						
min.:	0	max.:	255	std:	0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:	channel-specific		
block search	Program sensitive			link	No restrictions		

User-specific system variables

STRING	SYG_S9 [n]					Synact String parameters for GUD9 block	reference:	
description:								
SYG_S9[n] Synact parameter string in GUD9 block. The maximum string length has been limited to 31 characters.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least nine								
GUD blocks must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
Index 1:	The maximum number of SynactGUD String is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[8])							
Index 3:	-							
unit:	-							
min.:			max.:			std:	""	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:		channel-specific		
block search	Program sensitive				link	No restrictions		
DOUBLE	SYG_RS [n]					Synact Real parameters for SGUD block	reference:	
description:								
SYG_RS[n] Synchronization Real parameters in SGUD block.								
A protection level can be assigned to the parameters with REDEF.								
In order to create the parameters, at least one								
GUD block must be activated with MD \$MN_MM_NUM_GUD_MODULES.								
Index 1:	The maximum number of SynactGUD Real is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_REAL[0])							
unit:	-							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	X	/	X	/	X		
write:	X	X	/	X	/	X		
axis identifier:				Valuation:		channel-specific		
block search	Program sensitive				link	No restrictions		

INT	SYG_IS [n]						Synact integer parameters for SGUD block	reference:	
description:									
SYG_IS[n] Synact Integer parameters in SGUD block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least one									
GUD block must be activated with MD \$MN_MM_NUM_GUD_MODULES.									
Index 1:		The maximum number of SynactGUD Integers is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_INT[0])							
unit:									
min.:		2147483648		max.:		2147483647		std:	0
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	X	/	X			
axis identifier:						Valuation:			channel-specific
block search			Program sensitive			link		No restrictions	
BOOL	SYG_BS [n]						Synact Boolean parameters for SGUD block	reference:	
description:									
SYG_BS[n] Synact Boolean parameters in SGUD block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least one									
GUD block must be activated with MD \$MN_MM_NUM_GUD_MODULES.									
Index 1:		The maximum number of SynactGUD Boolean parameters is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_BOOL[0])							
unit:									
min.:		FALSE		max.:		TRUE		std:	FALSE
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	X			
write:	X	X	/	X	/	X			
axis identifier:						Valuation:			channel-specific
block search			Program sensitive			link		No restrictions	
AXIS	SYG_AS [n]						Synact axis parameters for SGUD block	reference:	
description:									
SYG_AS[n] Synchronization axis parameters in SGUD block.									
A protection level can be assigned to the parameters with REDEF.									
In order to create the parameters, at least one									
GUD block must be activated with MD \$MN_MM_NUM_GUD_MODULES.									

User-specific system variables

Index 1:	The maximum number of SynactGUD AXIS is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_AXIS[0])						
unit:							
min.:		max.:		std:	NOAXISNUM		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:	channel-specific		
block search	Program sensitive			link	No restrictions		
CHAR	SYG_CS [n]	Synact char parameters for SGUD block				reference:	
description:							
SYG_CS[n] Synchronization Char parameters in SGUD block.							
A protection level can be assigned to the parameters with REDEF.							
In order to create the parameters, at least one							
GUD block must be activated with MD \$MN_MM_NUM_GUD_MODULES.							
Index 1:	The maximum number of SynactGUD char is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_CHAR[0])						
unit:							
min.:	0	max.:	255	std:	0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:	channel-specific		
block search	Program sensitive			link	No restrictions		
STRING	SYG_SS [n]	Synact string parameters for SGUD block				reference:	
description:							
SYG_SS[n] Synchronized action parameter string in SGUD block. The maximum string length has been limited to 31 characters.							
A protection level can be assigned to the parameters with REDEF.							
In order to create the parameters, at least one							
GUD block must be activated with MD \$MN_MM_NUM_GUD_MODULES.							
Index 1:	The maximum number of SynactGUD String is defined in machine data (\$MN_MM_NUM_SYNACT_GUD_STRING[0])						
Index 3:							
unit:							
min.:		max.:		std:	""		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	X	
write:	X	X	/	X	/	X	
axis identifier:				Valuation:	channel-specific		
block search	Program sensitive			link	No restrictions		

1.29 Kinematic chain

STRING	\$NK_CHAIN_NAME [n]					Name of the kinematic chain	reference:	
description:								
\$NK_CHAIN_NAME[n]								
Name of the nth kinematic chain. The maximum possible number of kinematic chains is set by MD \$MN_MM_MAXNUM_KIN_CHAINS.								
index 1:	The maximum number of kinematic chains is set in MD \$MN_MM_MAXNUM_KIN_CHAINS.							
index 3:	max. string length							
unit:								
min.:			max.:			std:		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	1	X	1	X		
write:	X	-	1	X	1	X		
axis identifier:						Valuation:	channel-specific	
block search	Not classified					link	No restrictions	
STRING	\$NK_1ST_ELEM [n]					Name of next chain element	reference:	
description:								
\$NK_1ST_ELEM[n]								
Name of first chain link of a kinematic chain								
index 1:	The maximum number of kinematic chains is set in MD \$MN_MM_MAXNUM_KIN_CHAINS.							
index 3:	max. string length							
unit:								
min.:			max.:			std:		
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	1	X	1	X		
write:	X	-	1	X	1	X		
axis identifier:						Valuation:	channel-specific	
block search	Not classified					link	No restrictions	
STRING	\$NK_NAME [n]					Name of chain element	reference:	
description:								
\$NK_NAME[n]								
Name of the nth element of a kinematic chain. The maximum possible number of chain elements is set in MD \$MN_MM_MAXNUM_KIN_CHAIN_ELEMENTS.								
index 1:	The maximum number of elements of kinematic chains is set in MD \$MN_MM_MAXNUM_KIN_CHAIN_ELEM.							

Kinematic chain

Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:						Valuation:	channel-specific
block search	Not classified					link	No restrictions
STRING	\$NK_NEXT [n]			Name of next chain element		reference:	
description:							
\$NK_NEXT[n]							
Name of next chain element. An empty string "" means the end of the chain.							
Index 1:	The maximum number of elements of kinematic chains is set in MD						
	\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:						Valuation:	channel-specific
block search	Not classified					link	No restrictions
STRING	\$NK_NEXTP [n]			Name of a further next chain element		reference:	
description:							
\$NK_NAMEP[n]							
Name of a further next chain element. This is needed for chain branches which occur in the case of parallel kinematic sequences. An empty string "" means that no further chain element exists.							
Index 1:	The maximum number of elements of kinematic chains is set in MD						
	\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:						Valuation:	channel-specific
block search	Not classified					link	No restrictions

DOUBLE	\$NK_OFF_DIR [n,3]			Offset or directional vector		reference:	
description:							
\$NK_OFF_DIR[n, i]							
Describes the 3 components of the offset vector of a constant chain link or the direction of the axis of a variable chain link.							
If the vector describes a direction, the value of the vector must not equal 0. Otherwise not relevant.							
Index 1:				The maximum number of elements of kinematic chains is set in MD		\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.	
Index 2:	Index of the 3 components (0 <= i <= 2).						
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	
DOUBLE	\$NK_OFF_DIR_FINE [n,3]			Fine offset of the offset vector		reference:	
description:							
\$NK_OFF_DIR_FINE[n, i]							
Describes the 3 components of the correction vector for the offset vector \$NK_OFF_DIR in a constant chain link.							
This variable is not evaluated if the chain link describes an axis.							
Index 1:				The maximum number of elements of kinematic chains is set in MD		\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.	
Index 2:	Index of the 3 components (0 <= i <= 2).						
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	7	X	7	X	
write:	X	-	3	X	3	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	

Kinematic chain

STRING	\$NK_AXIS [n]		Axis name, frame name			reference:	
description:							
\$NK_AXIS[n]							
Name of machine axis or frame							
If the content of this element is not identical with the name of the machine axis (no difference made between small and capital letters), then the string designates a frame describing the change of this chain link compared to the previous link. In this case, the software using this kinematic chain must provide the frame data for this element.							
If \$NK_AXIS[n] contains the zero string, the entire data block describes a constant chain link.							
index 1:	The maximum number of elements of kinematic chains is set in MD			\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.			
index 3:	max. string length						
unit:							
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				valuation:	channel-specific		
block search	Not classified			link	No restrictions		
DOUBLE	\$NK_A_OFF [n]		Axis offset			reference:	
description:							
\$NK_A_OFF[n]							
Is relevant only if the chain link describes an axis. In this case, this element indicates the position of the axis in the zero point.							
In the case of linear axes, this value is redundant as it can also be replaced by a changed offset of the previous link.							
index 1:	The maximum number of elements of kinematic chains is set in MD			\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.			
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				valuation:	channel-specific		
block search	Not classified			link	No restrictions		

DOUBLE	\$NK_A_OFF_FINE [n]		Fine offset of the axis offset				reference:	
description:								
\$NK_A_OFF_FINE[n]								
Is only significant if the chain link describes an axis. In this case, this element contains a correction value for the variable \$NK_A_OFF[n].								
Index 1:	The maximum number of elements of kinematic chains is set in MD							
	\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.							
unit:	mm							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	X		
write:	X	-	3	X	3	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
DOUBLE	\$NK_LIMIT_FINE [n]		Input limit for fine offset				reference:	
description:								
\$NK_LIMIT_FINE[n]								
Maximum permissible input value for the variables \$NK_OFF_DIR_FINE or \$NK_A_OFF_FINE.								
Index 1:	The maximum number of elements of kinematic chains is set in MD							
	\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.							
unit:	mm							
min.:	0.0		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	7	X	7	X		
write:	X	-	1	X	1	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
DOUBLE	\$NK_ROT [n,3]		Direction of rotary axis				reference:	
description:								
\$NK_ROT[n, i]								
Components of the rotary axis for a coordinate rotation in element n of a kinematic chain.								
Index 1:	The maximum number of elements of kinematic chains is set in MD							
	\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.							
Index 2:	The 2nd index designates the vector component (0 <= i <= 2).							
unit:	deg.							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	1	X	1	X		
write:	X	-	1	X	1	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		

Orientation transformation

DOUBLE	\$NK_ANG [n]		Angle of coordinate rotation		reference:		
description:							
\$NK_ANG[n]							
Angle (in degrees) of a coordinate rotation in element n of a kinematic chain.							
Index 1:	The maximum number of elements of kinematic chains is set in MD						
	\$MN_MM_MAXNUM_KIN_CHAIN_ELEM.						
unit:	mm						
min.:	-1,8E308		max.:	1,8E308		std:	0.0
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	

1.30 Orientation transformation

STRING	\$NT_NAME [n]		Name of the transformation data set		reference:		
description:							
Name of the transformation data set n.							
Index 1:	The maximum number of data sets for transformations is defined by MD						
	\$MN_MM_MAXNUM_TRAFO_DAT.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	-	
write:	X	-	1	X	1	-	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	

Orientation transformation

STRING	\$NT_TRAFO_TYPE [n]		Transformation type	reference:		
description:						
The same type of transformation applies as for the transformation data set. Only certain reserved key words are permitted for the content of this system data. The valid key words are currently: - TRAORI for dynamic orientation transformations - TRAORI_STAT for static orientation transformations						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 3:	max. string length					
unit:						
min.:		max.:		std:	""	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	X	1	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	
STRING	\$NT_T_CHAIN_NAME [n]		Name of the kin. chain to the tool	reference:		
description:						
Name of the kinematic chain (\$NK_CHAIN_NAME) of the transformer data set n, which leads from the machine zero to the tool.						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 3:	max. string length					
unit:						
min.:		max.:		std:	""	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	
STRING	\$NT_T_CHAIN_1ST_ELEM [n]		First elem. of the kin. chain to the tool	reference:		
description:						
Name of an element indicated in the \$NT_T_CHAIN_NAME[n,] chain. This chain element indicates the first link of a substring. \$NT_T_CHAIN_1ST_ELEM[n] can remain empty. This has the same meaning, as it refers to the first link of the chain.						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					

Orientation transformation

Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	-	
write:	X	-	1	-	0	-	
axis identifier:						Valuation:	channel-specific
block search	Not classified					link	No restrictions
STRING	\$NT_T_CHAIN_LAST_ELEM [n]		Last elem. of the kin. chain to the tool			reference:	
description:							
Name of an element indicated in the \$NT_T_CHAIN_NAME[n,] chain. This chain element indicates the last link of a substring. \$NT_T_CHAIN_LAST_ELEM[n] can remain empty. This has the same meaning, as it refers to the last link of the chain.							
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	-	
write:	X	-	1	-	0	-	
axis identifier:						Valuation:	channel-specific
block search	Not classified					link	No restrictions
STRING	\$NT_P_CHAIN_NAME [n]		Name of the kin. chain to the workpiece			reference:	
description:							
Name of the kinematic chain (\$NK_CHAIN_NAME) of the transformer data set n, which leads from the machine zero to the workpiece.							
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	-	
write:	X	-	1	-	0	-	
axis identifier:						Valuation:	channel-specific
block search	Not classified					link	No restrictions

Orientation transformation

STRING	\$NT_P_CHAIN_1ST_ELEM [n]		First elem. of the kin. chain to the workpiece	reference:		
description:						
Name of an element indicated in the \$NT_P_CHAIN_NAME[n.] chain. This chain element indicates the first link of a substring. \$NT_P_CHAIN_1ST_ELEM[n] can remain empty. This has the same meaning, as it refers to the first link of the chain.						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 3:	max. string length					
unit:	-					
min.:		max.:		std:	""	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
STRING	\$NT_P_CHAIN_LAST_ELEM [n]		Last element of the kin. chain to the workpiece	reference:		
description:						
Name of an element indicated in the \$NT_P_CHAIN_NAME[n.] chain. This chain element indicates the last link of a substring. \$NT_P_CHAIN_LAST_ELEM[n] can remain empty. This has the same meaning, as it refers to the last link of the chain.						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 3:	max. string length					
unit:	-					
min.:		max.:		std:	""	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Orientation transformation

STRING	\$NT_T_REF_ELEM [n]			Reference point for tool length calculation	reference:	
description:						
This system variable refers to the reference point for the tool length calculation (tool reference point). The tool reference point is the starting point of the described kinematic element.						
The tool reference point defines the point in the kinematic chain, where tool wear components can be included, their orientation can be rotated in comparison with basic length components, see the description of the G codes in Group 56 (inclusion of the tool wear).						
If the system variable is not empty, it must contain the name of a chain element, which is the core element of the current chain to the tool.						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 3:	max. string length					
unit:	-					
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	
STRING	\$NT_GEO_AX_NAME [INTER-NAL,GEODIM,32]			Names of the linear axes	reference:	
description:						
This system data refers to a maximum of 3 machine axes. It contains the names of the chain links (\$NK_NAME), which define the axes, which must execute the compensation motions, which result from a kinematic transformation. These axes can be both linear axes (e.g. for all orientation transformations) and rotary axes (e.g. the rotary axis for TRANSMIT).						
The sequence of these axes defines the assignment of the geometrical axes to the channel axes in accordance with the machine data \$MC_AXCONF_GEO_AX_ASSIGN_TAB.						
Example: The system data \$NT_GEO_AX_NAME[n,1] refers to a chain link which contains the rotary machine axis C1. In the current channel, C1 would be the 7th axis. In the case of an active transformation, this entry has the same meaning as the entry \$MC_AXCONF_GEOAX_ASSIGN_TAB[1] = 7 for a deactivated transformation.						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 2:	Index of linear axis					
Index 3:	max. string length					
unit:	-					
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	

Orientation transformation

STRING	\$NT_ROT_AX_NAME [INTER-						Names of the rotary axes	reference:	
	NAL,ORIDIM,32]								
description:									
This system data refers to a maximum of 3 axes used for setting the orientation. It contains the names of the chain links (\$NK_NAME), which define the machine axes (rotary axes), which must execute the orientation motions, which result from a kinematic transformation.									
The sequence in which the maximum of three rotary axes are contained in this system data is insignificant for machine kinematics, as this is derived from the structure of the kinematic chains. It does, however, define the sequence which also refers to rotary axes (e.g. the Hirth parameters) and the access to the rotary axes.									
Index 1:	The maximum number of data sets for transformations is defined by MD								
	\$MN_MM_MAXNUM_TRAFO_DAT.								
Index 2:	Index of rotational axis								
Index 3:	max. string length								
unit:									
min.:			max.:			std:			
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	1	X	1	-			
write:	X	-	1	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search	Not classified				link	No restrictions			
DOUBLE	\$NT_ROT_AX_POS [n,3]						Position of a manual rotary axis	reference:	
description:									
This system variable is of significance only if the rotary axis, which refers to (\$NT_ROT_AX_NAME), is a manual rotary axis. In this case, the rotary axis position is the result of the total of these system variables and the system variables \$NK_A_OFF and \$NK_A_OFF_FINE of the affected kinematic chain element.									
Index 1:	The maximum number of data sets for transformations is defined by MD								
	\$MN_MM_MAXNUM_TRAFO_DAT.								
Index 2:	Index of component of position								
unit:	mm								
min.:	-1,8E308		max.:	1,8E308		std:	0.0		
							0.0		
							0.0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	-	1	X	1	-			
write:	X	-	1	-	0	-			
axis identifier:					Valuation:	channel-specific			
block search	Not classified				link	No restrictions			

Orientation transformation

DOUBLE	\$NT_HIRTH_OFF [n,ORIDIM]			Offset of the Hirth tooth system	reference:	
description:						
Offset of the Hirth tooth system.						
A Hirth tooth system is activated for a rotary axis if the associated system data \$NT_HIRT_INC[n, i] does not contain a value of 0.						
At a specified setpoint position PHlset of a rotary axis, the currently set angle results in						
$PHlact = \$NT_HIRTH_OFF[n, i] + k * \NT_HIRTH_INC						
whereby k is an integer and is selected in such a way that the difference between PHlact and PHlset is minimized.						
Index 1:	The maximum number of data sets for transformations is defined by MD					
	\$MN_MM_MAXNUM_TRAFO_DAT.					
Index 2:	Index of rotational axis					
unit:	deg.					
min.:	-1,8E308	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$NT_HIRTH_INC [n,ORIDIM]			Increment of the Hirth tooth system	reference:	
description:						
Increment of the Hirth tooth system.						
A Hirth tooth system is activated for a rotary axis if this system data does not contain a value of 0.						
At a specified setpoint position PHlset of a rotary axis, the currently set angle results in						
$PHlact = \$NT_HIRTH_OFF[n, i] + k * \NT_HIRTH_INC						
whereby k is an integer and is selected in such a way that the difference between PHlact and PHlset is minimized.						
Index 1:	The maximum number of data sets for transformations is defined by MD					
	\$MN_MM_MAXNUM_TRAFO_DAT.					
Index 2:	Index of rotational axis					
unit:	deg.					
min.:	0.0	max.:	1,8E308	std:	0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

DOUBLE	\$NT_ROT_AX_MIN [n,ORIDIM]		Minimum position of a rotary axis			reference:	
description:							
This system variable is evaluated only if \$NT_ROT_AX_MIN[n, i] and \$NT_ROT_AX_MAX[n,i] are not set to zero.							
In this case, it indicates the minimum permitted position of the rotary axis, which is referred to with \$NT_ROT_AX_NAME[n, i].							
Index 1:		The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 2:		Index of rotational axis					
unit:		deg.					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	-	
write:	X	-	1	-	0	-	
axis identifier:						Valuation: channel-specific	
block search		Not classified			link		No restrictions
DOUBLE	\$NT_ROT_AX_MAX [n,ORIDIM]		Maximum position of a rotary axis			reference:	
description:							
Maximum position of a rotary axis.							
This system variable is evaluated only if \$NT_ROT_AX_MIN[n, i] and \$NT_ROT_AX_MAX[n,i] are not set to zero.							
In this case, it indicates the maximum permitted position of the rotary axis, which is referred to with \$NT_ROT_AX_NAME[n, i].							
Index 1:		The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 2:		Index of rotational axis					
unit:		deg.					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	-	
write:	X	-	1	-	0	-	
axis identifier:						Valuation: channel-specific	
block search		Not classified			link		No restrictions

Orientation transformation

DOUBLE	\$NT_BASE_ORIENT [n,GEODIM]		vector of the tool base orientation for orientation transformations	reference:		
description:						
Indicates the vector of the tool orientation in the general orientation transformation						
The vector becomes effective only if the tool orientation is not indicated when the transformation is called up or read from a programmed tool.						
The vector can equal any amount, but this must not be equal to zero.						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 2:	Index of vector component					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0 0.0 1.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
DOUBLE	\$NT_BASE_ORIENT_NORMAL [n,GEODIM]		Norm. vector for orientation transformers with 3 orientation degs. of freedom	reference:		
description:						
Indicates a vector that is perpendicular to the tool orientation (\$NT_BASE_ORIENT) in the case of orientation transformations with 3 degrees of freedom.						
The vector becomes effective only if the tool orientation is not indicated when the transformation is called up or read from a programmed tool.						
The vector can equal any amount, but this must not be equal to zero.						
If \$NT_BASE_ORIENT_NORMAL and \$NT_BASE_ORIENT are neither orthogonal nor parallel, the two vectors are orthogonalized by modifying the normal vector. The normal vector is now in the plane, which is defined by both vectors and rotated in such a way that the two vectors are positioned orthogonally.						
The two named vectors must not be parallel.						
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
Index 2:	Index of vector component					
unit:	-					
min.:	-1,8E308	max.:	1,8E308	std:	0.0 1.0 0.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Orientation transformation

DOUBLE	\$NT_POLE_LIMIT [n]	End angle toler. with interpol. through pole for 5/6-axis transf.	reference:			
description:						
<p>This MD designates an end angle tolerance for the fifth axis of the first 5-axis transformation with the following properties:</p> <p>With the interpolation through the pole point, only the 2nd rotary axis moves, the 2nd rotary axis retains its starting position. If a motion is programmed that does not run exactly through the pole point but is to run near the pole within the area given by MD: TRAF05_NON_POLE_LIMIT then there is a deviation from the defined path, as the interpolation runs exactly through the pole point. This results in a deviation in the position of the end point of the fourth axis (the polar axis) from the programmed value.</p> <p>This MD defines the angle by which the polar axis may deviate from the programmed value with 5-axis transformation when switching from the programmed interpolation to the interpolation through the pole point. An error message (alarm 14112) is output if there is a greater deviation and the interpolation is not executed.</p> <p>Not relevant:</p> <p>If the "5-Axis Transformation" option is not installed.</p> <p>Also irrelevant with programming in the machine coordinate system ORIMKS.</p> <p>Related to:</p> <p>MD: TRAF05_NON_POLE_LIMIT_n</p>						
index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
unit:	deg.					
min.:	0.0	max.:	45.0	std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	

Orientation transformation

DOUBLE	\$NT_POLE_TOL [n]			End angle tolerance for pole interpolation	reference:	
description:						
End angle tolerance for interpolation through the pole for the 1st 5/6-axis transformation. This MD is evaluated only by the generic 5/6-axis transformation. If the end orientation lies within the pole cone and within the tolerance cone specified by means of this MD, the pole axis does not move and retains its start position. The other rotary axis, however, moves to the programmed angle. This results in a deviation of the end orientation from the programmed orientation. The maximum active value of this MD is the value of MD TRAF05_POLE_LIMIT_1, which is used to define the pole cone.						
index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
unit:	deg.					
min.:	0.0	max.:	45.0	std:	1.0	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
BOOL	\$NT_ROT_OFFSET_FROM_FRAME [n]			Transfer rotary axis offset from the work offset when selecting the transformer	reference:	
description:						
The programmable offset for orientation axes is automatically accepted from the work offset active for the orientation axes on switch-on of an orientation transformation.						
index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.					
unit:						
min.:	FALSE	max.:	TRUE	std:	false	
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	-
write:	X	-	1	-	0	-
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Orientation transformation

BOOL	\$NT_IGNORE_TOOL_ORIENT [n]						Read out tool orientation from \$NT_BASE_ORIENT	reference:		
description:										
Each tool has a defined tool orientation, which is normally used in the case of orientation programming to form the basis of calculating motions or the end points of the orientation axes. If this system data is set, the \$NT_BASE_ORIENT / \$NT_BASE_ORIENT_NORMAL orientation contained in the system data is used in place of the tool orientation, even in the case of an active tool.										
index 1:		The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.								
unit:										
min.:		FALSE		max.:		TRUE		std:		false
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	1	X	1	-				
write:	X	-	1	-	0	-				
axis identifier:							Valuation:		channel-specific	
block search		Not classified				link		No restrictions		
BOOL	\$NT_TRAFO_INCLUDES_TOOL [n]						Tool handling with active transformation	reference:		
description:										
This system variable indicates whether the tool for an active transformation is handled internally or externally. It is only evaluated for certain transformations.										
The prerequisite for an evaluation is that the orientation of the tool in relation to the basic coordinate system cannot be modified by the transformation. In the case of standard transformations, this condition is only met for the "inclined axis transformation".										
If this system variable is set, the basic coordinate system (BCS) refers to the tool reference point even in the case of an active transformation, in all other cases it refers to the tool center point (TCP).										
The operation of protection zones and working area limitations varies accordingly.										
index 1:		The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.								
unit:										
min.:		FALSE		max.:		TRUE		std:		TRUE
Properties with regard to reading/writing:										
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM				
read:	X	-	1	X	1	-				
write:	X	-	1	-	0	-				
axis identifier:							Valuation:		channel-specific	
block search		Not classified				link		No restrictions		

Orientation transformation

DOUBLE	\$NT_AUX_POS [n,3]		Auxiliary position			reference:	
description:							
This system variable contains a position vector for use by measuring cycles. It does not have any meaning within NCK.							
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.						
Index 2:	Index of component of position						
unit:	mm						
min.:	-1,8E308	max.:	1,8E308	std:	0.0 0.0 0.0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	-	
write:	X	-	1	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		
INT	\$NT_IDENT [n,3]		Identifier			reference:	
description:							
These system variables contain a numerical ID for identifying a transformation data set for use by measuring cycles. They do not have any meaning within NCK.							
Index 1:	The maximum number of data sets for transformations is defined by MD \$MN_MM_MAXNUM_TRAFO_DAT.						
Index 2:	Index of variable \$NT_IDENT						
unit:	-						
min.:	-2147483648	max.:	2147483647	std:	0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	-	
write:	X	-	1	-	0	-	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		

1.31 Protection area elements

STRING	\$NP_PROT_NAME [n]		Name of protection area			reference:	
description:							
\$NP_PROT_NAME[n] Name of protection area n.							
Index 1:	The maximum number of protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREAS.						
Index 3:	max. string length						
unit:	-						
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		
STRING	\$NP_CHAIN_NAME [n]		Assignment to a kin. chain			reference:	
description:							
\$NP_CHAIN_NAME[n] The point in a kinematic chain to which the current protection area has been assigned, is defined by the two variables \$NP_CHAIN_NAME and \$NP_CHAIN_ELEM. If only \$NP_CHAIN_NAME is indicated, the protection area is assigned to the beginning of the indicated chain.							
Index 1:	The maximum number of protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREAS.						
Index 3:	max. string length						
unit:	-						
min.:		max.:		std:			
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:					Valuation:	channel-specific	
block search	Not classified			link	No restrictions		
STRING	\$NP_CHAIN_ELEM [n]		Assignment to a kin. chain			reference:	
description:							
\$NP_CHAIN_ELEM[n] See description of \$NP_CHAIN_NAME[n]							
Index 1:	The maximum number of protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREAS.						

Protection area elements

Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	
STRING	\$NP_1ST_PROT [n]			Name of first element of a protection area		reference:	
description:							
\$NP_1ST_PROT Name of first element of a protection area							
Index 1:	The maximum number of protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREAS.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	
INT	\$NP_BIT_NO [n]			No. of interface bit for switchover activated / preactivated		reference:	
description:							
\$NP_BIT_NO 64 bits are defined in the PLC interface through which protection areas can be activated once they have been preactivated with the command PROTA(1(,.,.,.)). The entry indicates which bit has been assigned to this protection area. The default value is -1, i.e. no interface bit has been assigned to this protection area.							
Index 1:	The maximum number of protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREAS.						
unit:	-						
min.:	-1		max.:	63		std:	-1
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:		channel-specific	
block search	Not classified			link		No restrictions	

CHAR	\$NP_INIT_STAT [n]	Default activation status of a protection area	reference:			
description:						
\$NP_INIT_STAT						
Activation status of the protection area at first selection without indication of an activation status.						
This status is activated for defined protection areas also during runup of the control.						
The permitted values are:						
Activated ('A' or 'a'),						
Inactivated ('I' or 'i'),						
Preactivated ('P' or 'p').						
Default value is 'I'.						
Index 1:	The maximum number of protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREAS.					
unit:	-					
min.:	0	max.: 255	std: 'I'			
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	X
write:	X	-	1	X	1	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	
INT	\$NP_INDEX [n,3]	Index for tool identifier	reference:			
description:						
\$NP_INDEX[n, i]						
This component is evaluated only if \$NP_PROT_NAME[n] contains a reserved name.						
If \$NP_PROT_NAME[n] contains a name in the form __TOOLXX or __MAGXX, \$NP_INDEX[n, 0] refers to the number of the channel in which the tool or magazine is defined.						
If \$NP_PROT_NAME[n] contains a name in the form __TOOLXX, \$NP_INDEX[n, 1] gives the number of the spindle which contains the tool.						
Index 1:	The maximum number of protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREAS.					
Index 2:	Index number (0 ≤ i ≤ 1)					
unit:	-					
min.:	-2147483648	max.: 2147483647	std: 0			
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	X
write:	X	-	1	X	1	X
axis identifier:				Valuation:	channel-specific	
block search	Not classified			link	No restrictions	

Protection area elements

STRING	\$NP_NAME [n]		Name of protection zone element			reference:	
description:							
\$NP_NAME							
Name of protection zone element.							
Index 1:	The maximum number of elements in protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_ELEM.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
STRING	\$NP_NEXT [n]		Name of next protection zone element			reference:	
description:							
\$NP_NEXT[n]							
Name of next protection zone element.							
Index 1:	The maximum number of elements in protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_ELEM.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
STRING	\$NP_ADD [n]		Name of an additive protection zone			reference:	
description:							
\$NP_ADD[n]							
Name of protection element to be added to the current protection zone.							
Index 1:	The maximum number of elements in protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_ELEM.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		

Protection area elements

STRING	\$NP_TYPE [n]			Type of elementary body	reference:	
description:						
\$NP_TYPE[n]						
Type of elementary body. The following elementary bodies are possible:						
1. BOX (L, W, H): Axis-parallel cuboid, symmetrical to zero point with dimensions L in the X direction, W in the Y direction and H in the Z direction, i.e. the corners of the cuboid lie at n (+/-L/2, +/-W/2, +/-H/2).						
2. SPHERE (R): Sphere in zero point with radius R.						
3. CYLINDER (H, R): Cylinder with radius R and height H, longitudinal axis parallel to Z axis. The center point of the cylinder lies in the zero point, i.e. the two limiting circular areas are parallel to the X-Y plane and lie at +/-H/2.						
Index 1:	The maximum number of elements in protection areas is defined by MD					
	\$MN_MM_MAXNUM_3D_PROT_AREA_ELEM.					
Index 3:	max. string length					
unit:						
min.:		max.:		std:		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	X
write:	X	-	1	X	1	X
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	
DOUBLE	\$NP_PARA [n,3]			Parameters for describing the type	reference:	
description:						
\$NP_PARA[n, i]						
Parameters for describing the type of an elementary body. A maximum of 5 parameters are required for the types of elementary body described under \$NP_TYP.						
Index 1:	The maximum number of elements in protection areas is defined by MD					
	\$MN_MM_MAXNUM_3D_PROT_AREA_ELEM.					
Index 2:	The maximum number of parameters is 3.					
unit:	mm					
min.:	-1,8E308	max.:	1,8E308	std:		0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	X
write:	X	-	1	X	1	X
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	

Protection area elements

DOUBLE	\$NP_OFF [n,3]		Offset component				reference:	
description:								
\$NP_OFF[n, i]								
Component i (0<=i<=2) of the offset vector of protection zone element n.								
index 1:	The maximum number of elements in protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_ELEM.							
index 2:	The 2nd index i designates the coordinate axis (0 <= i <= 2).							
unit:	mm							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	1	X	1	X		
write:	X	-	1	X	1	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
DOUBLE	\$NP_DIR [n,3]		Direction of rotary axis				reference:	
description:								
\$NP_ROT[n, i]								
Components of the rotary axis for a coordinate rotation in element n of a kinematic chain.								
index 1:	The maximum number of elements in protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_ELEM.							
index 2:	The 2nd index designates the vector component (0 <= i <= 2).							
unit:	deg.							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	1	X	1	X		
write:	X	-	1	X	1	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		
DOUBLE	\$NP_ANG [n]		Angle of coordinate rotation				reference:	
description:								
\$NP_ANG[n]								
Angle (in degrees) of a coordinate rotation in protection area element n								
index 1:	The maximum number of elements in protection areas is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_ELEM.							
unit:	mm							
min.:	-1,8E308		max.:	1,8E308		std:	0.0	
Properties with regard to reading/writing:								
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM		
read:	X	-	1	X	1	X		
write:	X	-	1	X	1	X		
axis identifier:					Valuation:	channel-specific		
block search	Not classified				link	No restrictions		

Protection area elements

STRING	\$NP_GROUP_NAME [n]		Name of protection area group			reference:	
description:							
\$NP_GROUP_NAME[n]							
Name of protection area group n							
Index 1:	The maximum number of protection areas groups is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_GROUPS.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
STRING	\$NP_ADD_GROUP [n]		Name of additive protection area group			reference:	
description:							
\$NP_ADD_GROUP[n]							
Name of additive protection area group n							
Index 1:	The maximum number of protection areas groups is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_GROUPS.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		
STRING	\$NP_MEMBER_1 [n]		1st protection area of protection area group			reference:	
description:							
\$NP_MEMBER_1[n]							
1st protection area of protection area group							
Index 1:	The maximum number of protection areas groups is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_GROUPS.						
Index 3:	max. string length						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	1	X	1	X	
write:	X	-	1	X	1	X	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		

Protection area elements

STRING	\$NP_MEMBER_2 [n]		2nd protection area of protection area group		reference:	
description:						
\$NP_MEMBER_2[n]						
2nd protection area of protection area group						
Index 1:	The maximum number of protection areas groups is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_GROUPS.					
Index 3:	max. string length					
unit:	-					
min.:		max.:		std:		""
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	X
write:	X	-	1	X	1	X
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	
STRING	\$NP_MEMBER_3 [n]		3rd protection area of protection area group		reference:	
description:						
\$NP_MEMBER_3[n]						
3rd protection area of protection area group						
Index 1:	The maximum number of protection areas groups is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_GROUPS.					
Index 3:	max. string length					
unit:	-					
min.:		max.:		std:		""
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	1	X	1	X
write:	X	-	1	X	1	X
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	
STRING	\$NP_MEMBER_4 [n]		4th protection area of protection area group		reference:	
description:						
\$NP_MEMBER_4[n]						
4th protection area of protection area group						
Index 1:	The maximum number of protection areas groups is defined by MD \$MN_MM_MAXNUM_3D_PROT_AREA_GROUPS.					
Index 3:	max. string length					
unit:	-					
min.:		max.:		std:		""
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	7	X	7	X
write:	X	-	7	X	7	X
axis identifier:					Valuation:	channel-specific
block search	Not classified			link	No restrictions	

Coordinate system-specific working area limitation

1.32 Coordinate system-specific working area limitation

INT	\$P_WORKAREA_CS_COORD_SYSTEM [n]		Coordinate system to which the working area limitation applies	reference:		
description:						
Coordinate system in which the group is to apply.						
The following values apply:						
Working area limitation in the WCS						
Working area limitation in the SZS						
Index 1:						
-						
unit:						
-						
min.:		-2147483648		max.: 2147483647		
				std: 0		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	-	0	-
write:	X	-	/	X	/	-
axis identifier:				Valuation: channel-specific		
block search			Not classified		link No restrictions	
BOOL	\$P_WORKAREA_CS_PLUS_ENABLED [n,m]		Coordinate system-specific working area limitation plus valid	reference:		
description:						
TRUE: The coordinate system-specific working area limitation in the plus direction is valid for the stated axis of the stated group. (See \$P_WORKAREA_CS_LIMIT_PLUS[groupNo, ax])						
Index 1:						
-						
Index 2:						
-						
unit:						
-						
min.:		FALSE		max.: TRUE		
				std: FALSE		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation: channel-specific		
block search			Not classified		link No restrictions	
BOOL	\$P_WORKAREA_CS_MINUS_ENABLED [n,m]		Coordinate system-specific working area limitation minus valid	reference:		
description:						
TRUE: The coordinate system-specific working area limitation in the minus direction is valid for the stated axis of the stated group. (See \$P_WORKAREA_CS_LIMIT_MINUS[groupNo, ax])						
Index 1:						
-						
Index 2:						
-						
unit:						
-						
min.:		FALSE		max.: TRUE		
				std: FALSE		
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation: channel-specific		
block search			Not classified		link No restrictions	

ePS Network Services

DOUBLE	\$P_WORKAREA_CS_LIMIT_PLUS [n,m]		Coordinate system-specific working area limitation positive	reference:		
description:						
The coordinate system-specific working area limitation in the plus direction for the stated axis of the stated group. This value is evaluated only if \$P_WORKAREA_CS_PLUS_ENABLE = TRUE.						
Index 1:						
-						
Index 2:						
-						
unit:						
Linear / angular position						
min.:		-1,8E308	max.:	1,8E308	std:	0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search			Not classified	link	No restrictions	

DOUBLE	\$P_WORKAREA_CS_LIMIT_MINUS [n,m]		Coordinate system-specific working area limitation negative	reference:		
description:						
The coordinate system-specific working area limitation in the minus direction for the stated axis of the stated group. This value is evaluated only if \$P_WORKAREA_CS_MINUS_ENABLE = TRUE.						
Index 1:						
-						
Index 2:						
-						
unit:						
Linear / angular position						
min.:		-1,8E308	max.:	1,8E308	std:	0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	-	/	X	/	-
write:	X	-	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search			Not classified	link	No restrictions	

1.33 ePS Network Services

DOUBLE	\$EPS_R [n]		ePS parameter of type REAL	reference:		
description:						
Reserved for internal use only (ePS).						
Index 1:						
The maximum number of ePS parameters of type REAL is given by the machine data \$MN_MM_EPSPARAM_DIMENSION						
unit:						
-						
min.:		-1,8E308	max.:	1,8E308	std:	0.0
Properties with regard to reading/writing:						
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM
read:	X	X	/	X	/	-
write:	X	X	/	X	/	-
axis identifier:				Valuation:	channel-specific	
block search			Program sensitive	link	No restrictions	

INT	\$EPS_I [n]						ePS parameter of type INT	reference:	
description:									
Reserved for internal use only (ePS).									
Index 1:	The maximum number of ePS parameters of Type INT is given by the machine data \$MN_MM_EPSPARAM_DIMENSION								
unit:									
min.:	2147483648		max.:	2147483647		std:	0		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	-			
write:	X	X	/	X	/	-			
axis identifier:					Valuation:	channel-specific			
block search	Program sensitive				link	No restrictions			
BOOL	\$EPS_B [n]						ePS parameter of type BOOL	reference:	
description:									
Reserved for internal use only (ePS).									
Index 1:	The maximum number of ePS parameters of Type BOOL is given by the machine data \$MN_MM_EPSPARAM_DIMENSION								
unit:									
min.:	FALSE		max.:	TRUE		std:	FALSE		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	-			
write:	X	X	/	X	/	-			
axis identifier:					Valuation:	channel-specific			
block search	Program sensitive				link	No restrictions			
AXIS	\$EPS_A [n]						ePS parameter of type AXIS	reference:	
description:									
Reserved for internal use only (ePS).									
Index 1:	The maximum number of ePS parameters of Type AXIS is given by the machine data \$MN_MM_EPSPARAM_DIMENSION								
unit:									
min.:			max.:			std:	GEOAXISNUM		
Properties with regard to reading/writing:									
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM			
read:	X	X	/	X	/	-			
write:	X	X	/	X	/	-			
axis identifier:					Valuation:	channel-specific			
block search	Program sensitive				link	No restrictions			

Tool data ISO dialect milling

CHAR	\$EPS_C [n]		ePS parameter of type CHAR			reference:	
description:							
Reserved for internal use only (ePS).							
Index 1:	The maximum number of ePS parameters of Type CHAR is given by the machine data \$MN_MM_EPSPARAM_DIMENSION						
unit:	-						
min.:	0	max.:	255	std:	0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	-	
write:	X	X	/	X	/	-	
axis identifier:				Valuation:	channel-specific		
block search	Program sensitive			link	No restrictions		
STRING	\$EPS_S [n]		ePS parameter of type STRING			reference:	
description:							
Reserved for internal use only (ePS).							
Index 1:	The maximum number of ePS parameters of Type STRING is given by the machine data \$MN_MM_EPSPARAM_DIMENSION						
Index 3:	31 characters and string-terminator						
unit:	-						
min.:			max.:			std:	""
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	X	/	X	/	-	
write:	X	X	/	X	/	-	
axis identifier:				Valuation:	channel-specific		
block search	Program sensitive			link	No restrictions		

1.34 Tool data ISO dialect milling

DOUBLE	\$TC_ISO_H [n]		ISO2 tool length offset			reference:	
description:							
\$TC_ISO_H[n]							
Correction value memory for the geometry of the tool length compensation in ISO2 mode.							
Is available only if ISO2 mode is active.							
Index 1:	n: correction number of iso tool correction parameter						
unit:	mm						
min.:	-1,8E308	max.:	1,8E308	std:	0.0		
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:	channel-specific		
block search	Not classified			link	No restrictions		

DOUBLE	\$TC_ISO_HW [n]		ISO2 tool length wear			reference:	
description:							
\$TC_ISO_HW[n]							
Correction value memory for the wear of the tool length compensation in ISO2 mode.							
Is available only if ISO2 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

DOUBLE	\$TC_ISO_D [n]		ISO2 tool radius offset			reference:	
description:							
\$TC_ISO_D[n]							
Correction value memory for the geometry of the tool radius in ISO2 mode.							
Is available only if ISO2 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

DOUBLE	\$TC_ISO_DW [n]		ISO2 tool radius wear			reference:	
description:							
\$TC_ISO_DW[n]							
Correction value memory for the wear of the tool radius in ISO2 mode.							
Is available only if ISO2 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

Tool data ISO dialect turning

1.35 Tool data ISO dialect turning

DOUBLE	\$TC_ISO_L1 [n]		ISO3 tool length 1 offset			reference:	
description:							
\$TC_ISO_L1[n]							
Correction value memory for the geometry of tool length 1 in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions
DOUBLE	\$TC_ISO_L1W [n]		ISO3 tool length 1 wear			reference:	
description:							
\$TC_ISO_L1W[n]							
Correction value memory for the wear of tool length 1 in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions
DOUBLE	\$TC_ISO_L2 [n]		ISO3 tool length 2 offset			reference:	
description:							
\$TC_ISO_L2[n]							
Correction value memory for the geometry of tool length 2 in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:			
				channel-specific			
block search		Not classified			link		No restrictions

DOUBLE	\$TC_ISO_L2W [n]		ISO3 tool length 2 wear			reference:	
description:							
\$TC_ISO_L2W[n]							
Correction value memory for the wear of tool length 2 in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
DOUBLE	\$TC_ISO_L3 [n]		ISO3 tool length 3 offset			reference:	
description:							
\$TC_ISO_L3[n]							
Correction value memory for the geometry of tool length 3 in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
DOUBLE	\$TC_ISO_L3W [n]		ISO3 tool length 3 wear			reference:	
description:							
\$TC_ISO_L3W[n]							
Correction value memory for the wear of tool length 3 in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

Tool data ISO dialect turning

DOUBLE	\$TC_ISO_R [n]		ISO3 tool radius compensation			reference:	
description:							
\$TC_ISO_R[n]							
Correction value memory for the geometry of the tool radius in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
DOUBLE	\$TC_ISO_RW [n]		ISO3 tool radius wear			reference:	
description:							
\$TC_ISO_RW[n]							
Correction value memory for the wear of the tool radius in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		mm					
min.:		-1,8E308		max.:		1,8E308	
				std:		0.0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions
INT	\$TC_ISO_Q [n]		ISO3 cutting edge position			reference:	
description:							
\$TC_ISO_Q[n]							
Cutting edge position in ISO3 mode.							
Is available only if ISO3 mode is active.							
Index 1:		n: correction number of iso tool correction parameter					
unit:		-					
min.:		-2147483648		max.:		2147483647	
				std:		0	
Properties with regard to reading/writing:							
	PP	SA	PP/SA protection level	OPI	OPI protection level	OEM	
read:	X	-	/	X	/	-	
write:	X	-	/	X	/	-	
axis identifier:				Valuation:		channel-specific	
block search		Not classified			link		No restrictions

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I DT MC MS1

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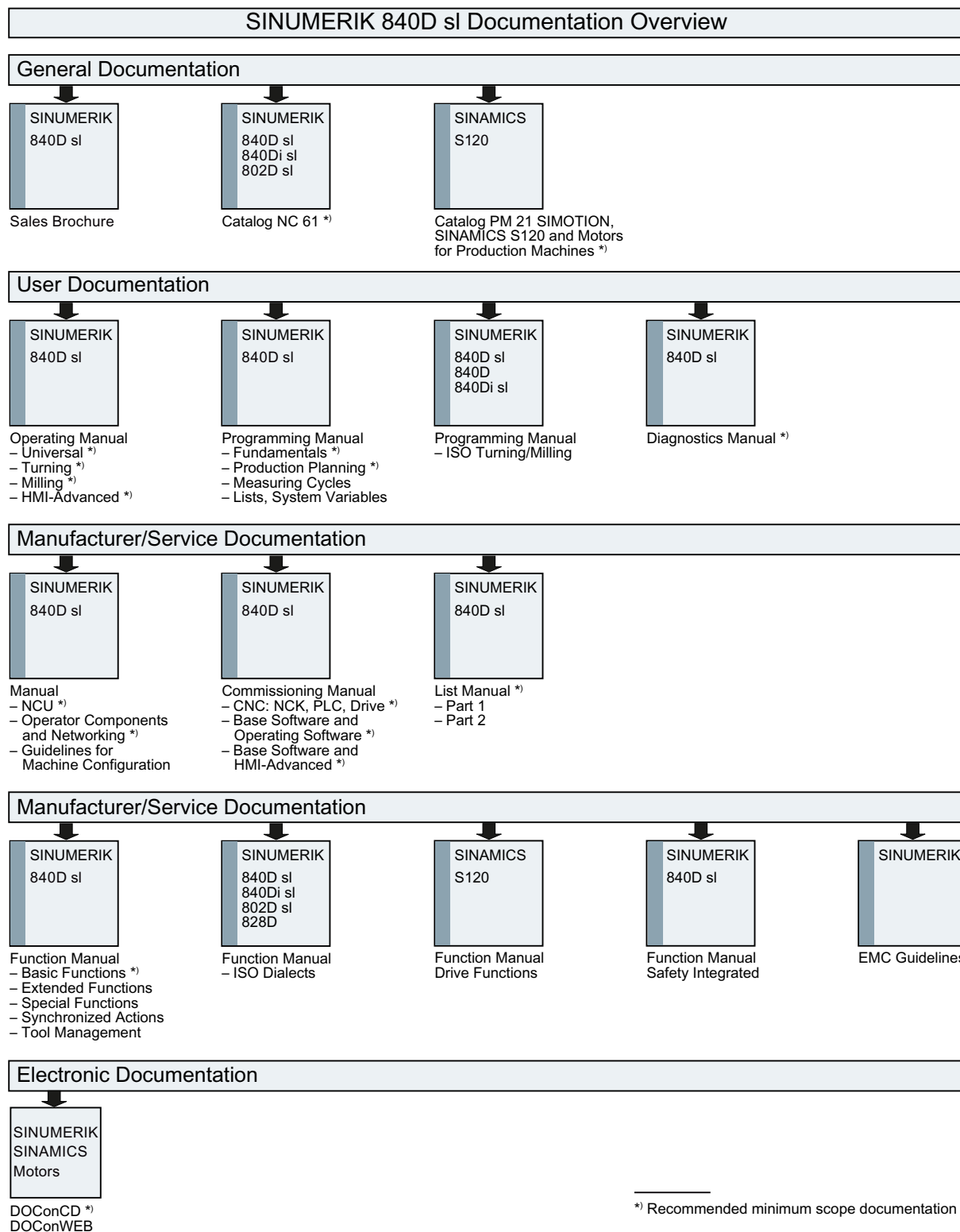
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Suggestions and/or corrections

A.2 Overview



*) Recommended minimum scope documentation