SIMATIC

Automation system
BRAUMAT/SISTAR Classic V5.3
Block library basic

This manual is part of the documentation package with the order number:
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Safety Guidelines

This manual contains notices intended to ensure personal safety, as well as to protect the products and connected equipment against damage. These notices are highlighted by the symbols shown below and graded according to severity by the following texts:

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

⚠️ Warning
indicates that death, severe personal injury or substantial property damage can result if proper precautions are not taken.

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indicates that minor personal injury can result if proper precautions are not taken.

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Only qualified personnel should be allowed to install and work on this equipment. Qualified persons are defined as persons who are authorized to commission, to ground and to tag circuits, equipment, and systems in accordance with established safety practices and standards.

Correct Usage

Note the following:

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Preface

Purpose of the Manual

This library contains both basic system blocks and project specific interface blocks of BRAUMAT/SISTAR Classic 5.3. Only the interface blocks are described here.

This manual is intended for those responsible for configuring, commissioning and servicing automation systems.

Required Basic Knowledge

You require a general knowledge in the field of automation engineering to be able to understand this manual.

In addition, you should know how to use computers or devices with similar functions (e.g. programming devices) under Windows 2000 Prof./Windows 2000 Server or Windows XP Prof./Windows Server 2003 operating systems. Since BRAUMAT/SISTAR Classic V5.3 is based on the STEP 7 software, you should also know how to operate it. This is provided in the manual "Programming with STEP 7 V5.3".

Please read always the file "readme.wri" to the current version of BRAUMAT/SISTAR Classic before an installation of BRAUMAT/SISTAR Classic components.

Where is this Manual valid?

This manual is valid for the software package BRAUMAT/SISTAR Classic from Version V5.3 SP2.

The offered electronic manual is most largely identical with the contents of the on-line help. Due to a technically necessary editorial deadline for the generation of electronic manuals occasionally smaller deviations can give up opposite the on-line helps.

The statements in the on-line helps are primary to those of the manual.

Place of this Documentation in the Information Environment

This manual forms part of the BRAUMAT/SISTAR Classic V5.3 documentation package. The following schematic of the document architecture show the individual manuals as well as their thematic grouping within the entire program package
Further Support

If you have any technical questions, please get in touch with your Siemens representative or agent responsible.

You will find your contact person at:

http://www.siemens.com/automation/partner

You will find a guide to the technical documentation offered for the individual SIMATIC Products and Systems here at:

http://www.siemens.com/simatic-tech-doku-portal

The online catalog and order system is found under:

http://mall.automation.siemens.com/

Training Centers

Siemens offers a number of training courses to familiarize you with the SIMATIC S7 automation system. Please contact your regional training center or our central training center in D 90327 Nuremberg, Germany for details:

Telephone: +49 (911) 895-3200.
Internet: http://www.sitrain.com
Technical Support

You can reach the Technical Support for all A&D products

- Via the Web formula for the Support Request
  [http://www.siemens.com/automation/support-request](http://www.siemens.com/automation/support-request)
- Phone: + 49 180 5050 222
- Fax: + 49 180 5050 223

Additional information about our Technical Support can be found on the Internet pages
[http://www.siemens.com/automation/service](http://www.siemens.com/automation/service)

Service & Support on the Internet

In addition to our documentation, we offer our Know-how online on the internet at:
[http://www.siemens.com/automation/service&support](http://www.siemens.com/automation/service&support)

where you will find the following:

- The newsletter, which constantly provides you with up-to-date information on your products.
- The right documents via our Search function in Service & Support.
- A forum, where users and experts from all over the world exchange their experiences.
- Your local representative for Automation & Drives.
- Information on field service, repairs, spare parts and more under "Services".
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# 1 Blocks in SIS_USR

## 1.1 Overview

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<th>Symbol</th>
<th>Function</th>
<th>Use</th>
</tr>
</thead>
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<td>Sequence function block</td>
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<td>CRST_USR_FB</td>
<td>User instructions and calls, running at cold start</td>
<td>User</td>
</tr>
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<td>User instructions and calls, running at warm start</td>
<td>User</td>
</tr>
<tr>
<td>FB1205</td>
<td>CAS_USR_FB</td>
<td>Start batch job from PCU. User may locate batch job data and the associated unit by data set number handed over</td>
<td>User</td>
</tr>
<tr>
<td>FB1209</td>
<td>CAS_CB1_FB</td>
<td>Batch Job Start user interface</td>
<td>User</td>
</tr>
<tr>
<td>FB1210</td>
<td>CAS_CB2_FB</td>
<td>Batch Job Start user interface</td>
<td>User</td>
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<td>CYCLE_BEGIN_USR_FB, CYCLE_END_USR_FB</td>
<td>User instructions and calls running at Beginning / End of OB1 cycle</td>
<td>User</td>
</tr>
<tr>
<td>FB1222, FB1223, FB1224</td>
<td>TIMER_100MS_BEG_USR_FB, TIMER_100MS_END_USR_FB, TIMER_100MS_USR_FB</td>
<td>User instructions and calls for Beginning / End or once during 100ms cycle</td>
<td>User</td>
</tr>
<tr>
<td>FB1225</td>
<td>TIMER_1S_USR_FB</td>
<td>User instructions and calls running once during 1s cycle</td>
<td>User</td>
</tr>
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<td>INPUT_FC</td>
<td>Connection of input interface (E/M)</td>
<td>User</td>
</tr>
<tr>
<td>FC701</td>
<td>OUTPUT_FC</td>
<td>Connection of Output interface (A/M)</td>
<td>User</td>
</tr>
<tr>
<td>Number</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FB1001-1064</td>
<td>Unit FB. See manual “26-blocks-S7”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FB1200</td>
<td>Cold Restart user Interface-FB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FB1201</td>
<td>Warm restart user Interface-FB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FB1205</td>
<td>Batch job start in the PCU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FB1209</td>
<td>User open batch data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FB1210</td>
<td>Observe batch data</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Description

The block is called from the routing block, if new batch data of the PC arrived.

The user gets information via a data interface information about these batch data and can program more functions in this FB. Among other things the user should provide data for the distribution of the batch by himself. The information where to find the batch data are in nn DBW10/12/14.

Transfer parameter

ACCUMULATOR 1 = 0 ---> NEW Batch data

DBB 0 YEAR
DBB 1 RECIPE MODEL
DBW 2 RECIPE NUMBER
DBW 4 ORDER NUMBER
DBW 6 BATCH NUMBER
DBW 8 MESSAGE SECTION NUMBER
DBW 10 CAS-DATA RECORD
DBW 12 MISTAKE: DBX 12.7 = 1 MISTAKE, = 0 NO MISTAKE
DBW 14 DATABLOCK - NUMBER
DBW 16 DW NUMBER (S5 information ! -> S7=Amount * 2)
DBW 18 DW-NUMBER (Information in WORDs !)

1.7 CYCLE_BEGIN_USR_FB; CYCLE_END_USR_FB (FB1220,1221)

Number

FB1220, 1221

Cyclical call in the OB1

Description

The user can program calls and commands here that should be transmitted at the beginning (FB1220) or at the end (FB1221) of the OB1 cycle.

1.8 TIMER_100MS_BEG_USR_FB;
   TIMER_100MS_END_USR_FB;
   TIMER_100MS_USR_FB (FB1222,1223,1224)

Number

FB1222,1223,1224

Cyclical call in the time alarm-OB 100 ms
Description

The user can program calls and commands here, that should be run at the beginning (FB1222) or at the end (FB1223) or during (FB1224) the 100 ms time alarm.

1.9 TIMER_1S_USR_FB (FB1225)

Number

FB1225

Cyclical call in the time alarm of 1 s

Description

The user can program calls and instructions that are supposed to be set down during the 1000ms watchdog timer alarm.

1.10 INPUT_FC (FC700)

Nummer

FC700

Connection of input interface (E/M)

Beschreibung

Zusammenfassung der Eingangsrangierung der verschiedenen Technologiebausteine.
Combined input connection of the different technological function blocks. The user may place program statements and calls here which have to run before and after the individual input connection of the functions.

1.11 OUTPUT_FC (FC701)

Nummer

FC701

Connection of Output interface (A/M)

Beschreibung

Combined output connection of the different technological function blocks. The user may place program statements and calls here which have to run before and after the individual output connection of the functions.
2 Appendix

2.1 Preface

This section describes blocks of the base library which are not supported by Versions from BRAUMAT/SISTAR Classic 5.3 and later, because that version does not support the PCS7 CFC feature for user configuration.

2.2 XC_CONFIG (CFC) (FB690)

Number

FB690

Description

XC_CONFIG offers the following functionality depending on the call (OB) :

- During the run of the AGs (OB100, OB101, OB102) 
  Reads the inputs and configures the corresponding data record of the XC_PCU-
  class according to the conversion table (compare #04_Communication#)
  corresponding data records of the XC_PCU-class.

- Cyclical (OB1) 
  Monitors the connections and writes their Stati as flag to the outputs. Via a new
  diagnosis-input the details to the entered PCU-connection can be seen.

Note!

It is necessary that all inputs are filled out on the different CFC-plans in the same order. The own PCU should be entered too.

Inputs which aren't used should be assigned with 0.

Inputs

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASConn01</td>
<td>Destination-PCU-Number</td>
</tr>
<tr>
<td>ASConn02</td>
<td>(ASConn11 are hidden with ASConn32 )</td>
</tr>
<tr>
<td>...</td>
<td></td>
</tr>
<tr>
<td>ASConn32</td>
<td></td>
</tr>
<tr>
<td>RedundBus</td>
<td>(not used)</td>
</tr>
<tr>
<td>SharedMemCycle</td>
<td>(not used)</td>
</tr>
</tbody>
</table>
DiagAS  PCU-Number for detail indications

Outputs

State01  State bit of the Conn01-connection (0: error, 1: ok)
State02  Condition bit of the ASC0n01-connection (0: error, 1: ok)
...  (State11 with State32 are hidden)
State32  
IntError  Internal error, an erroneous configuration is the reason
0: no error
-1: own PCU is 0
-2: own PCU not found at the inputs
-10: Error with access on a XC_PCU-Data record
DiagDSNo  calculated data record number of the XC_PCU-class by the block
DiagErrCode  corresponds to the configuration-input ErrCode
DiagPCUState  corresponds to the configuration-input PCU_State
DiagPCUSIC1  corresponds to the configuration-input PCU_State_Conn_1
DiagPCUSIC2  corresponds to the configuration-input PCU_State_Conn_2
DiagParaErr  corresponds to the configuration-input ParamError

2.3 SIS_IF_JOB (CFC) (FC745)

Number
FC745

Description
The block overtakes the configuration of a coupling job. The inputs are allocated in the entered data records XC_JOB_32-class under „ID“, the outputs are illustrations for the Status of the data record.

Note
As the block is a FC the inputs are only read in ...Changes to the running time have effects after a restart of the AG.

Inputs

ID  The used data record number of the XC_JOB_32-class
TargPCU  Destination-PCU for the job
JType  Job type (here the „blocked“ Modi are allowed)
Enable  Enabling a job can be „linked“
Src  Source area
0 for In-/Outputs, Periphery and flag
DB-Number but
SrcType  Type of the source area
SrcByte  Byte-Start address of the source area
NumBytes  Number of the transferring bytes in this job
Dest  Destination area, Allocation like under „Src“
DestType  Type of the destination area
DestByte  Byte-Start address of the destination area
ReplTime  Waiting time in seconds according to that the substitute value (s,u) will be used instead of the requested date.
ReplSrc  Source area for substitute value, allocation like under „Src“
ReplType  Type of the substitute-source area
ReplByte  Byte-Start address of the substitute-source area

Output

ConState1  Condition of the first connection (BOOL)
0: Connection error
1: Connection is set

ConState2  State of the second (redundant) connection (w.o.)

RmtState  Condition of the Remote-PCU (BOOL)
0: no error
1: Connection or PCU not in the mode „RUN“

ParaState  Acknowledgment via configuration of the job
0: no error
1: erroneous configuration

IntError  internal rudimentary error identifier
0: no error
1: ID of the job is 0
2: ID is more than 512 (upper limit)
3: Error by requesting a XC_PCU_32-data record
4: ---
5: internal error – should never appear ...

Note!
There is no rely on the acknowledgements in the "blocked" Modi.