

**SIEMENS**



FAQ • 07/2016

# Evaluation of the "RUN / STOP" Status of the PLC

WinCC Comfort / STEP 7 Professional / V13 SP1



<https://support.industry.siemens.com/cs/ww/en/view/109736535>

This entry originates from Siemens Industry Online Support. The conditions of use specified there apply ([www.siemens.com/nutzungsbedingungen](http://www.siemens.com/nutzungsbedingungen)).

## Security Information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions only form one element of such a concept.

Customers are responsible to prevent unauthorized access to their plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit <http://www.siemens.com/industrialsecurity>.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

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

## Contents

<b>1</b>	<b>Introduction</b> .....	<b>3</b>
<b>2</b>	<b>STEP 7 Program</b> .....	<b>4</b>
2.1	OB1 (Main) .....	4
2.2	DB10 (DB10_HMI_AreaPointer) .....	4
2.3	DB100 (DB100_HMI_Data).....	4
<b>3</b>	<b>HMI Configuration</b> .....	<b>5</b>
3.1	Area Pointers.....	5
3.2	System Function "GetPLCMode" .....	5
3.3	Tag Table .....	5
3.4	Text List.....	6
3.5	"Topic_001.0" Screen.....	6
3.6	"Topic_002.0" Screen.....	7

# 1 Introduction

The instructions describe how you can evaluate the "RUN / STOP" status of a PLC via an operator panel.

## Function description

The "RUN/STOP" mode of the PLC is queried via the HMI system function "GetPLCMode".

To have the querying run automatically the "life bit" of the panel is evaluated via the "Coordination" area pointer.

The life bit toggles between "0" and "1" in the cycle of 1 second independently of the status of the PLC.

The system function "GetPLCMode" is called at the "Life bit" tag under "Properties > Change Value".

The system function outputs an integer value as a result.

- 4 = PLC in STOP
- 8 = PLC in RUN

A text is output via a symbolic IO field as a function of the integer value.

## 2 STEP 7 Program

### 2.1 OB1 (Main)

In "Network 1" the current time of the PLC is read out via the "RD\_LOC\_T" block and transferred to an HMI tab.

The HMI tag used is used in a text list. It outputs the time when the PLC went into the "STOP" mode.

The evaluation of the "STOP time" is optional and cannot be used with a Basic Panel.

### 2.2 DB10 (DB10\_HMI\_AreaPointer)

The "DB10" includes an addressing of predefined area pointers.

#### "Coordination" area pointer

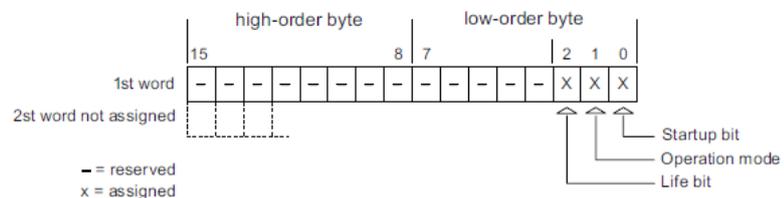
The "Coordination" area pointer is used to achieve this task. Evaluation of the life bit is done via the 2nd bit.

Detailed information about this area pointer is available in the system manual of "WinCC Advanced V13 SP1" in Entry ID: [109091876](#).

You can also use the "Coordination" area pointer separately in another data block.

Figure 2-1

Assignment of the bits in the "Coordination" area pointer



### 2.3 DB100 (DB100\_HMI\_Data)

The "DB100" contains two HMI tags.

- Tag for the return value of the "GetPLCMode" HMI system function.
- Tag for reading out the current PLC time.

The DB addresses used can be changed as required.

## 3 HMI Configuration

### 3.1 Area Pointers

The prerequisite is that a connection to an S7-1200 or S7-1500 controller is established.

- Open Connections via the project tree.
- Then select the "Area pointer" tab.
- Enable the "Coordination" option and assign the predefined tag from the "DB10".

Figure 3-1

The screenshot shows two overlapping windows from the SIMATIC Manager. The top window is titled 'Connections to S7 PLCs in Devices & Networks' and contains a table with the following data:

Name	Communication driver	Station	Partner	Node
HMI_Connection_1	SIMATIC S7 1500	S71500/ET200MP-Station_1	PLC_1	CPU 1516-3 PN/DP, PROFINET interface (R0/S1)
<Add new>				

The bottom window is titled 'Area pointer' and contains a table with the following data:

Active	Display name	PLC tag	Access mode	Address	Length	Acquisiti
<input checked="" type="checkbox"/>	Coordination	DB10_HMI_AreaPointer.Coordination	<symbolic access>		1	Cyclic co
<input type="checkbox"/>	Date/time	<Undefined>	<symbolic access>		6	Cyclic co
<input type="checkbox"/>	Job mailbox	<Undefined>	<symbolic access>		4	Cyclic co
<input type="checkbox"/>	Data record	<Undefined>	<symbolic access>		5	Cyclic co

### 3.2 System Function "GetPLCMode"

The current status of the connected controller is evaluated via the HMI system function "GetPLCMode".

The system function outputs an integer value as a result

- 4 = PLC in STOP
- 8 = PLC in RUN

The values are transferred to an HMI tag that is then assigned to a symbolic IO field.

### 3.3 Tag Table

The tags relevant to the project are located in the "PLC\_Status" folder.

- DB10\_HMI\_AreaPointer\_Coordination  
Tag for the "Coordination" area pointer.
- LifeBit  
The tag was addressed absolutely.  
The address is from the "Coordination" area pointer.
  - Properties - "Acquisition type": Cyclic continuous
  - Properties - "Events" Call of the system function "GetPLCMode"

- DB100\_HMI\_Data\_DateTime\_01  
HMI tag via which the current PLC time when the PLC went into "STOP" mode is output.
  - Properties - "Acquisition type":   Cyclic continuous
- DB100\_HMI\_Data\_Tag\_GetPLCMode\_01  
HMI tag via which the return value of the system function "GetPLCMode" is output.
  - Properties - "Acquisition type":   Cyclic continuous

### 3.4 Text List

The current PLC mode is output via the text list.

The texts are then display via a symbolic IO field depending on the two values "4" and "8".

In addition to the output text "PLC in STOP", a tag was inserted via which the current time of the PLC is read out. For this you click in the text field. Right-click to open the pop-up menu. There you select the function "Insert control tag field...".

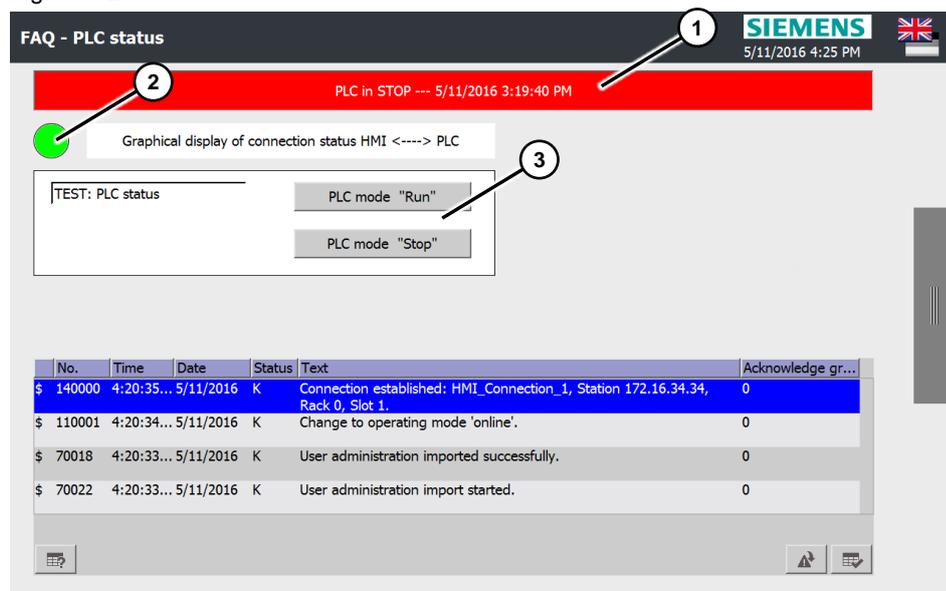
### 3.5 "Topic\_001.0" Screen

The PLC mode from the text list is then output via the symbolic IO field in accordance with the evaluation of the "GetPLCMode" system function.

The screen also includes a graphical object and is for displaying the connection status of the "HMI ↔ PLC" (2).

You can use the two switches to switch the "RUN/STOP" mode of the PLC.

Figure 3-2



### 3.6 "Topic\_002.0" Screen

The screen includes the diagnostics display via which the PLC status can be queried.

PLC status "RUN"

Figure 3-3

System diagnostics view			
S71500/ET200MP-Station_1			
Status	Name	Operating state	Slot
✓	S71500/ET200MP-Station 1		
✓	PLC_1	🟢	1

PLC status "STOP"

Figure 3-4

System diagnostics view			
S71500/ET200MP-Station_1			
Status	Name	Operating state	Slot
✓	S71500/ET200MP-Station 1		
✓	PLC_1	🟡	1