SIEMENS

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).

Contents

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
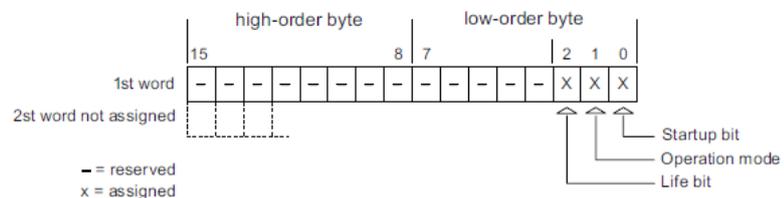
2.3 DB100 (DB100_HMI_Data)

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

	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>				

Connections to S7 PLCs in Devices & Networks

Connections

Parameter | Area pointer

Active	Display name	PLC tag	Access mode	Address	Length	Acquisiti
☑	Coordination	DB10_HMI_AreaPointer.Coordination	<symbolic access>		1	Cyclic co
☐	Date/time	<Undefined>	<symbolic access>		6	Cyclic co
☐	Job mailbox	<Undefined>	<symbolic access>		4	Cyclic co
☐	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
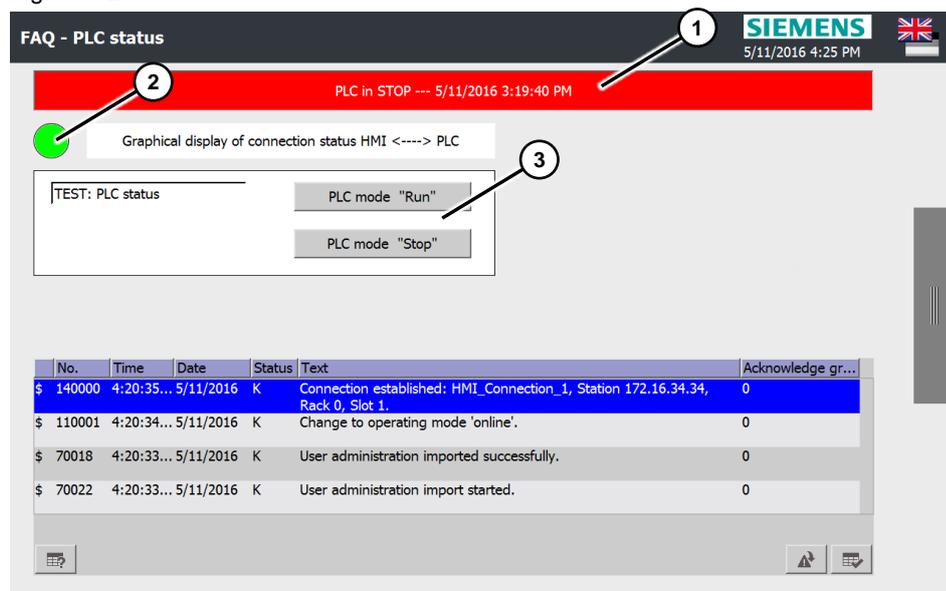
3.6 "Topic_002.0" Screen

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

PLC status "RUN"

Figure 3-3

PLC status "STOP"

Figure 3-4