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Application example for using an RCCA-A without HMI

Contents

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Preconditions

To understand this example, the following components are required: RCCA-A with current firmware (V1.0.30 or newer) GSMDL file for the TST RCCA, Siemens S7-1200 PLC, Siemens TIA Portal development environment not older than version V15. TST FUF2/FU3F with activated RCCA functionality and activated parameter P.804 = 1.

To simplify the interaction between PG, PLC and RCCA, the use of an Ethernet switch is recommended. The address range of the adapter used in the PG must be set to 192.168.0.xxx/24.

Hardware configuration

Create a new project and add your control unit to the project. A Siemens S7-1211C DC/DC/DC is used in the example. ProfiNet® support is a prerequisite for communication via an RCCA-A.

If you have already integrated the GSDML into your project, select the hardware variant "TST-RCCA-A" from the hardware catalogue under "Other field devices" -> "PROFINET IO" -> "I/O" -> "FEIG ELECTRONIC GmbH" -> "Door control" and add it to your project.

Establish the ProfiNet connection between the control unit and RCCA under "Network view".

Configuration of the TST

Check the settings of the input profiles for input 13 and 14 as well as output 21, 22 and 23 in the door control unit.
Set the following profiles:
P.50D = 0101 Open command
P.50E = 0701 Close command
P.D01 = 0701 Flashing during open and close movement
P.D02 = 0101 Door in open position

Program tags

Tags

To simplify the subsequent wiring, create a variable table with the variables shown in Fig. 1.

		Name	Data type	Address	Comment
	Default tag table				
1		Q_Blink	Bool	%Q0.0	physical out 0
2		Q_Open	Bool	%Q0.1	physical out 1
3		Q_Closed	Bool	%Q0.2	physical out 2
4		m_In13	Bool	%M0.0	
5		m_In14	Bool	%M0.1	
6		m_open	Bool	%...	
7		m_stop	Bool	%M0.3	
8		m_close	Bool	%M0.4	

Figure 1

Example library

Open "Feig RCCA V1.1" under "Global libraries" and copy "Module" and "PLC data types" from the templates to the appropriate place in your project.

Program sequence

The programme is processed cyclically in OB1 of the control programme.
Create a sequence according to the scheme: Read data, edit commands, write data.
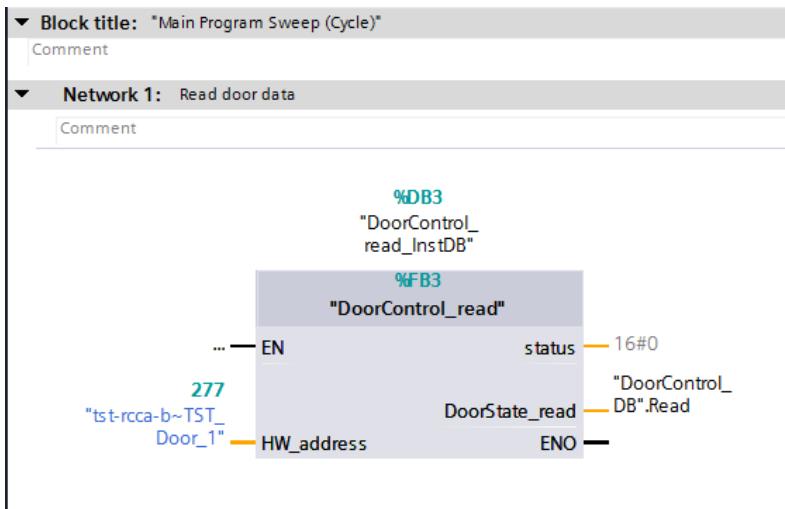
Figure 1: Read data
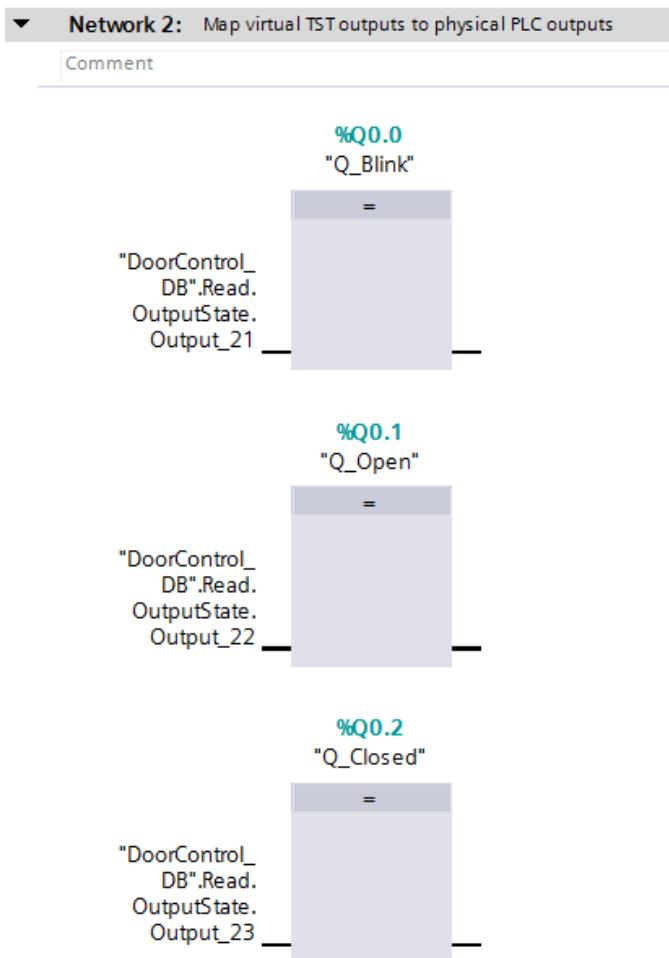
Figure 2: TST map virtual outputs
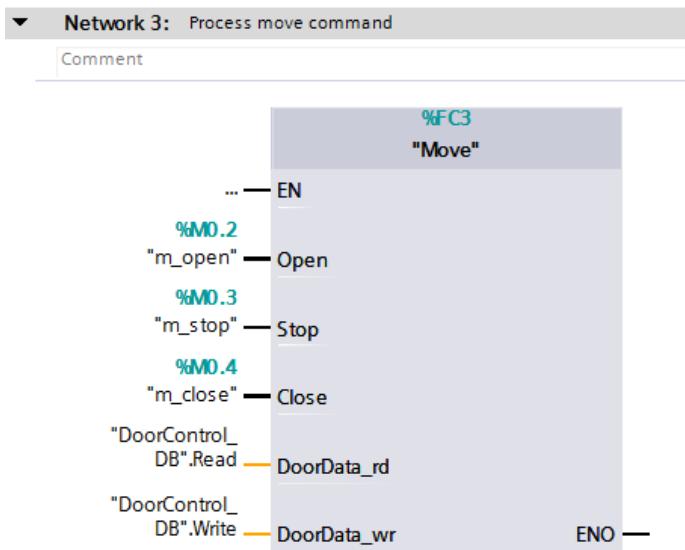
Figure 3: Edit movement command
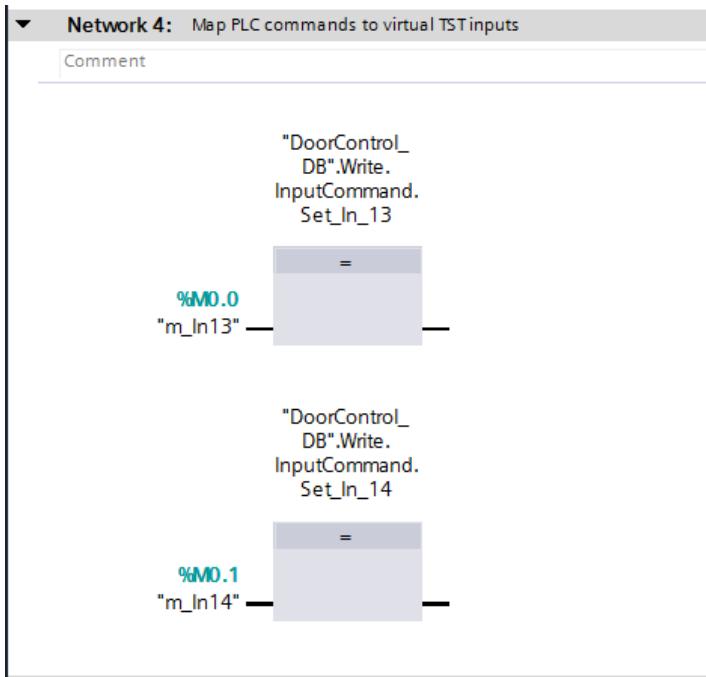

Figure 4: Map input commands
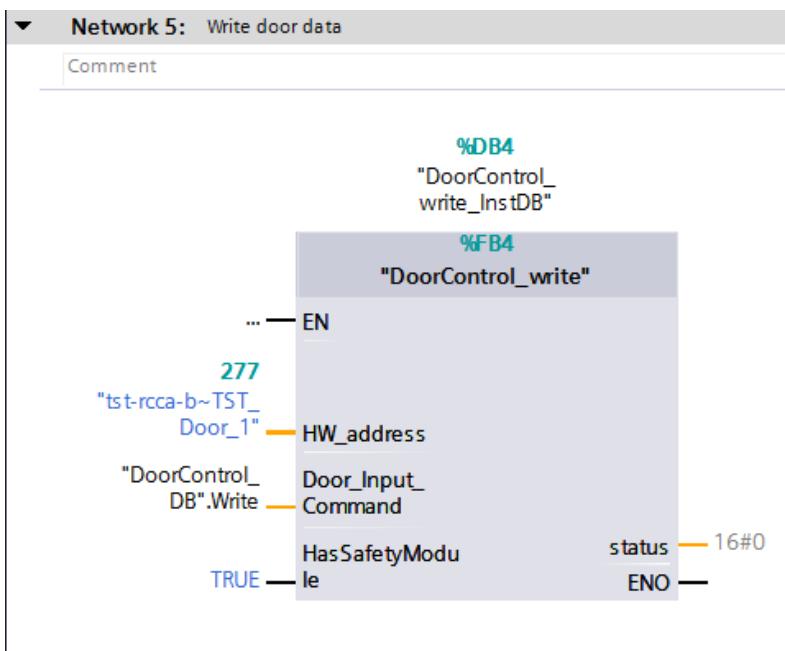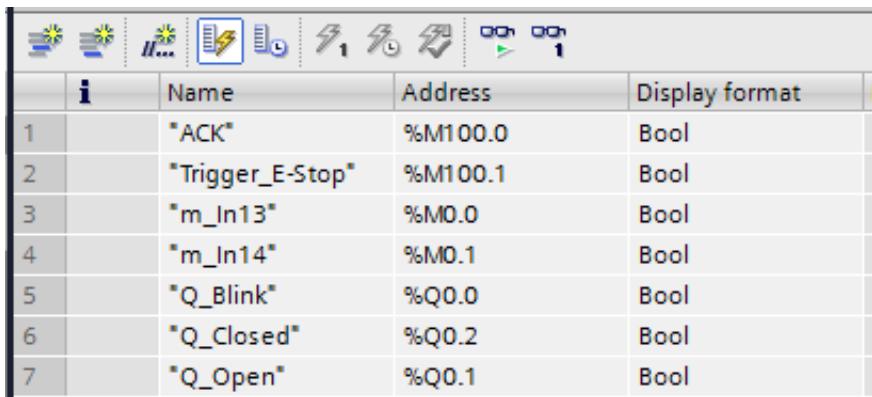
Figure 5: Write data

The hardware address of the module "RCCA_A~TST_Door_and_Control_1" can be found in the PLC variables under "Standard variables".

Watch and control

Now translate and transfer the hardware configuration and control programme. Create a new monitoring table under "Monitoring and force tables", open it and add the control flags m_In13 and m_In14 to it. The Q_Blink, Q_Open and Q_Closed flags can also be monitored here. However, as they are assigned to discrete outputs, it is also possible to monitor the PLC indicators.

The door control unit now accepts input commands via the force table. An open command is triggered with m_In13 and a close command with m_In14.

Figure 6: Control and monitoring

All other available door control information can be called up via the DB "DoorControl_DB".