# FEIG

# Application example for using an RCCA-A without HMI

## Contents

## 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 SPS, 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.

Connect an input device - any passive buttons/switches will do for demonstration purposes - to sockets X10 (input 1&2), X11 (input 3/4) and X12 (input 5/6).


## 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".


### *Debounce time of the digital inputs*

The debounce time of the digital inputs can be set in the range from 0ms (debounce off) to 255ms.
This setting can be found in the hardware view of the RCCA in the "Digital I/O_1" submodule.
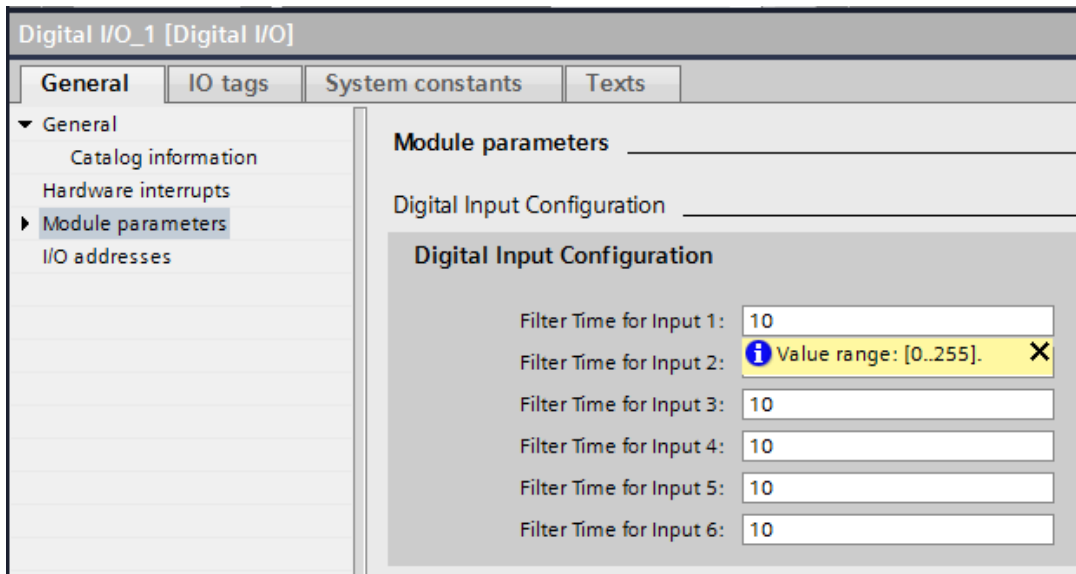
Figure 1: Debouncing

## Program blocks

### Tags

To simplify the subsequent wiring, create a variable table with the variables shown in Fig. 2 and Fig. 3.



| | Name | Data type | Address |
|---|---|---|---|
| 1 | Q_DigIn_1 | Bool | %Q0.3 |
| 2 | Q_DigIn_2 | Bool | %Q0.4 |
| 3 | Q_DigIn_3 | Bool | %Q0.5 |
| 4 | m_Enable | Bool | %M1000.0 |

Figure 2: Variables for program control

Figure 3: Variables of the input bits

The addresses of the digital inputs can be found under the hardware configuration of the RCCA module.



Figure 4: Address of digital inputs EB1

### 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.
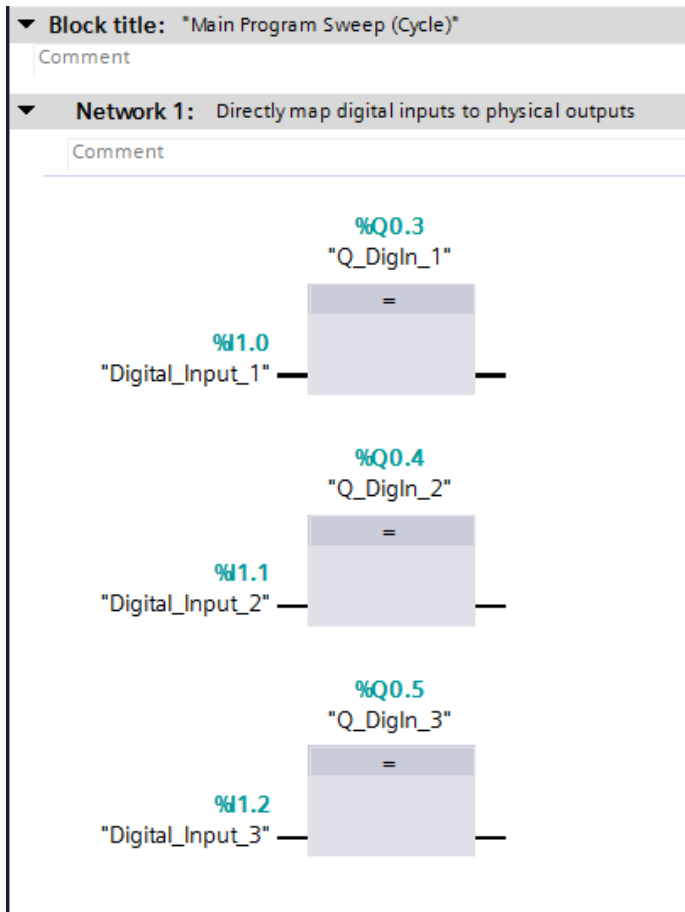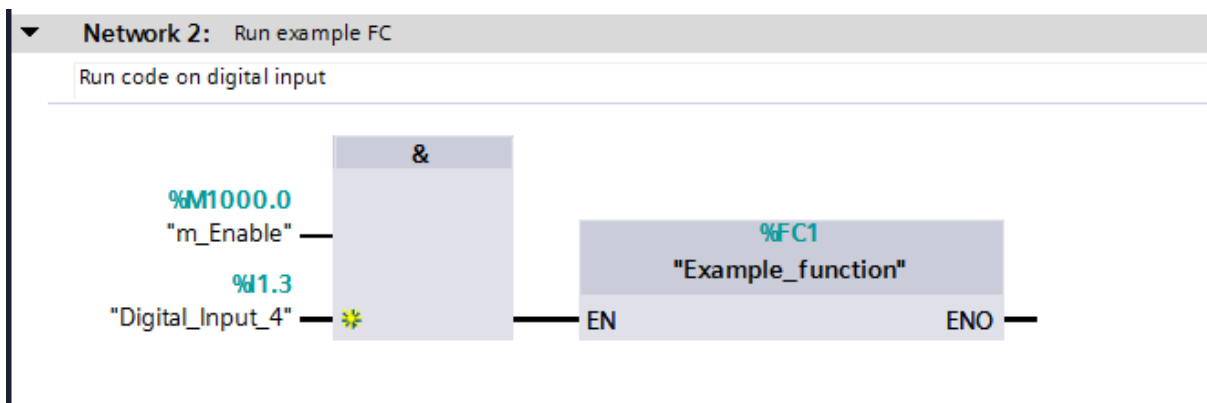Data from the digital inputs can be used directly for programme control.

**Block title:** "Main Program Sweep (Cycle)"
Comment

▼ **Network 1:** Directly map digital inputs to physical outputs
Comment

```
                    %Q0.3
                  "Q_DigIn_1"
                    ┌──────────┐
                    │    =     │
          %I1.0     │          │
    "Digital_Input_1" ─┤          ├─


                    %Q0.4
                  "Q_DigIn_2"
                    ┌──────────┐
                    │    =     │
          %I1.1     │          │
    "Digital_Input_2" ─┤          ├─


                    %Q0.5
                  "Q_DigIn_3"
                    ┌──────────┐
                    │    =     │
          %I1.2     │          │
    "Digital_Input_3" ─┤          ├─
```

*Figure 5: Direct control of outputs*

▼ **Network 2:** Run example FC
Run code on digital input

```
                    ┌──────────┐
                    │    &     │
      %M1000.0      │          │
      "m_Enable" ──┤          │              %FC1
                    │          │        "Example_function"
          %I1.3     │          │        ┌──────────────────┐
    "Digital_Input_4" ─┤✳        ├────────┤ EN           ENO ├──
                    └──────────┘        └──────────────────┘
```

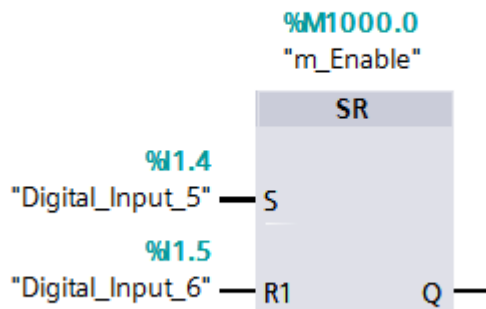*Figure 6: Digital input controls programme sequence*

Figure 7: Digital inputs control enable

## Watch and control

Now translate and transfer the hardware configuration and control programme.
The processing of the digital inputs can now be read directly from the output indicators of the control unit. As the physical outputs 4 - 6 of the PLC are directly linked to the digital inputs 1 - 3, the output directly represents the status of the input.

To monitor all functions and input states, create a new monitoring table under "Monitoring and force tables" and complete it as shown in Figure 11.



| | i | Name | Address | Display format | Monito |
|---|---|---|---|---|---|
| 1 | | "Digital_Input_1" | %I1.0 | Bool | |
| 2 | | "Digital_Input_2" | %I1.1 | Bool | |
| 3 | | "Digital_Input_3" | %I1.2 | Bool | |
| 4 | | "Digital_Input_4" | %I1.3 | Bool | |
| 5 | | "Digital_Input_5" | %I1.4 | Bool | |
| 6 | | "Digital_Input_6" | %I1.5 | Bool | |
| 7 | | "Q_DigIn_1" | %Q0.3 | Bool | |
| 8 | | "Q_DigIn_2" | %Q0.4 | Bool | |
| 9 | | "Q_DigIn_3" | %Q0.5 | Bool | |
| 10 | | "m_Enable" | %M1000.0 | Bool | |

Figure 8: Watch and Control