Eilersen
The Weighing Experts

4x70A Implementation Guide PROFINET

4x70A PROFINET communication module

Implementation using Siemens TIA Portal Function Block (FB)

Software: Use with 4x70.CONCTR_4.211004.1v4 (or newer)

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Introduction

This document is a guide for implementation of a PROFINET interface for Eilersen capacitive load cells, with a Siemens TIA Portal Function Block (FB).

The software library also includes one HMI Screen, with six pop-up screens.

IMPORTANT:

Please note that this PLC program block is only intended as an example for inspiration and is not as such a product on which Eilersen Electric A/S offers any warranty or support.

Furthermore, Eilersen Electric A/S is not responsible for any loss or damage caused as a result of using this program block.

Unauthorized copying or distribution of the program block is prohibited as it is the property of Eilersen Electric A/S.

Import Library

When installing the Function Block and HMI Screen, you will have to drag and drop from the "Eilersen 4x70A" library. The installation of this library is described in this section.

Click on the "Libraries" tab, at the right side of Siemens Tia Portal, then right click at an empty space and click "Open library…". As seen in Figure 1.

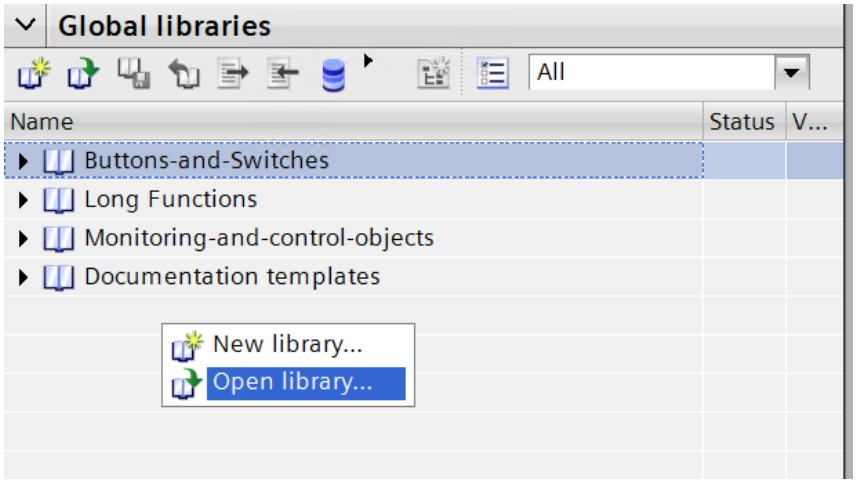


Figure 1 - Right-click on library

Browse and find the "Eilersen 4x70A" library file and click "Open".

Now the library is installed and ready to use.

Install GSD file

In this section you will be guided through how to install the GSD file. The latest GSD file, for this Profinet module, can be found on the Eilersen website.

Go to Options -> Manage general station description files (GSD).

At the “Installed GSDs” tab, check the “Source path” is set to the current location of the GSD file from Eilersen.

Check the box of the GSD file from Eilersen, click on the “Install” button. As seen on Figure 2.

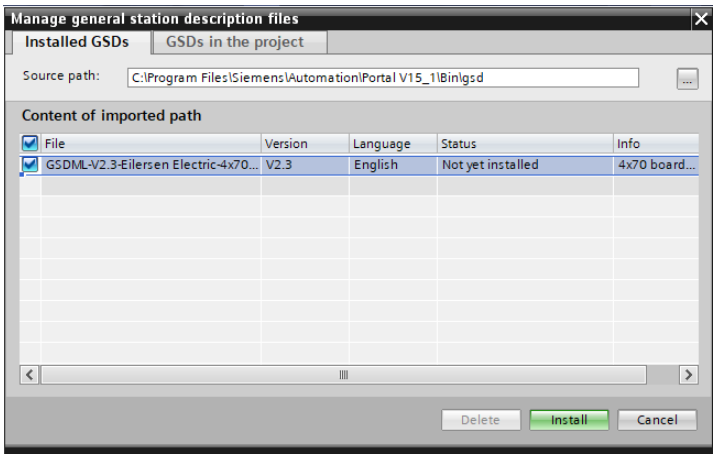


Figure 2 - GSD installation window

Now you have installed the GSD file into Siemens Tia Portal.

Use of the GSD device

Go to “Devices & networks” and click on “Hardware catalog” on the right-hand side.
In the catalog go to “Other field devices” -> “PROFINET IO” -> “I/O” -> “Eilersen Electric” -> “4x70 CONCTR_4”, now drag and drop the “4x70 V1.0” device to your network.

Installation of Function Block (FB)

For the installation of the Function Block, the library must be installed beforehand. See the “Import Library” section.

Go to the “Eilersen 4X70A” global library and right-click on the library, then choose “Update types” and click on “Project…”, as seen on Figure 3.

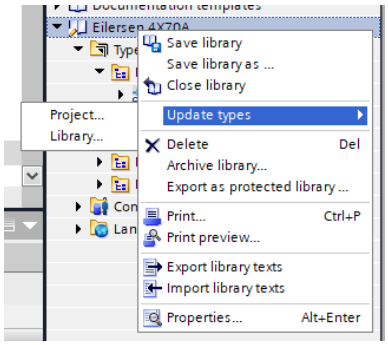


Figure 3 - Global libraries

Now the function block (FB) is imported to your “Project Library”. Next you will have to drag and drop the FB from “Types” in your “Project Library”, into your project.

Remember also to drag and drop the PLC tags from the “Master copies” from the global library to your project.

Now the Function Block is installed and ready to use.

Description of the Function Block

This section describes the required tags on the Function Block (FB) as seen in Figure 4.

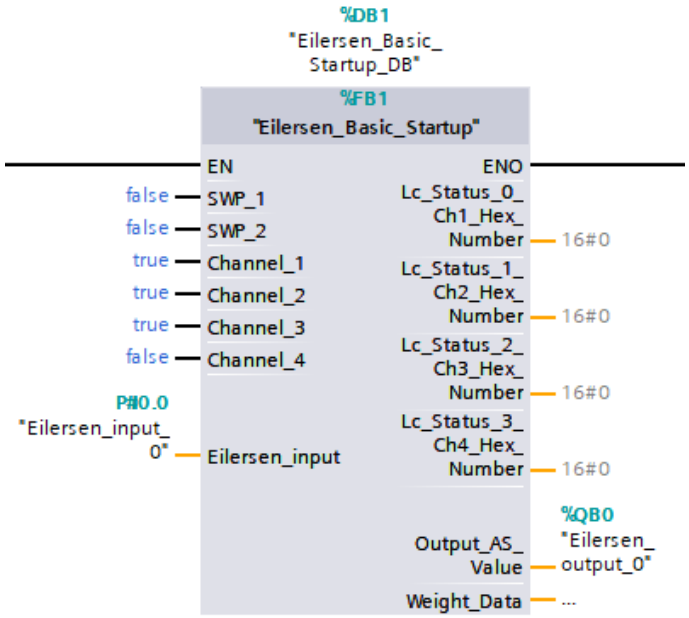


Figure 4 - Function Block

At the next page, there is a description of all input and outputs of this Function Block (FB).

Operand	Data type	Type	Description
SWP_1	BOOL	Input	This is the physical SWP.1 switch setting, must be set true (1) or false (0), as on the 4x70A Profinet module.
SWP_2	BOOL	Input	This is the physical SWP.2 switch setting, must be set true (1) or false (0), as on the 4x70A Profinet module.
Channel_1	BOOL	Input	This must be set true (1) if a load cell is connected to channel 1, if not then this must be set false (0).
Channel_2	BOOL	Input	This must be set true (1) if a load cell is connected to channel 2, if not then this must be set false (0).
Channel_3	BOOL	Input	This must be set true (1) if a load cell is connected to channel 3, if not then this must be set false (0).
Channel_4	BOOL	Input	This must be set true (1) if a load cell is connected to channel 4, if not then this must be set false (0).
Eilersen_input	UDT – "Eiler-sen_input"	Input	Input address area from the Profinet module.
Lc_Status_0_Ch1_Hex_Number	WORD	Output	Channel 1 raw value from Profinet module.
Lc_Status_1_Ch2_Hex_Number	WORD	Output	Channel 2 raw value from Profinet module.
Lc_Status_2_Ch3_Hex_Number	WORD	Output	Channel 3 raw value from Profinet module.
Lc_Status_3_Ch4_Hex_Number	WORD	Output	Channel 4 raw value from Profinet module.
Output_AS_Value	Sint	Output	Output data to the 4x70A PROFINET module.
Weight_Data	Struct	Output	Structure that contains 3 Real values(Floating point) "Net_Weight", "Gross_Weight" and "Cal_Factor".

Installation of HMI Screen

This section clarifies how to install the HMI Screen and pop-ups. The HMI Screen has been developed using a TP1200 Comfort and MTP1200(Unified) panel as a template. If you use a smaller panel, you will have to resize the screen to fit yours.

To install the HMI project, you will have to drag and drop the "Eilersen_Template", from the global library, into your HMI project.

From the global library, two folders exist.
The WinCC advanced folder suits all applications applicable to "WinCC Advanced Runtime" e.g. Comfort Panels, WinCC advanced PC runtime etc.

The WinCC Unified folder suits all Unified comfort panels and Unified PC Runtime.

All Submodules, HMI Tags etc. are required to be transferred and connected accordingly.

Pop-ups

To install all six pop-up screens, navigate the global library under HMI -> Pop-up screens and drag and drop all six pop-ups to your HMI project under Screen management -> Pop-up screens for WinCC Advanced applications, or to root or subfolder under “Screens” in WinCC Unified applications.

HMI Functionality

This section shows examples from the HMI screen and all pop-up screens.

All example figures are from the WinCC advanced application however all figures are either identical or very similar in the WinCC unified application.

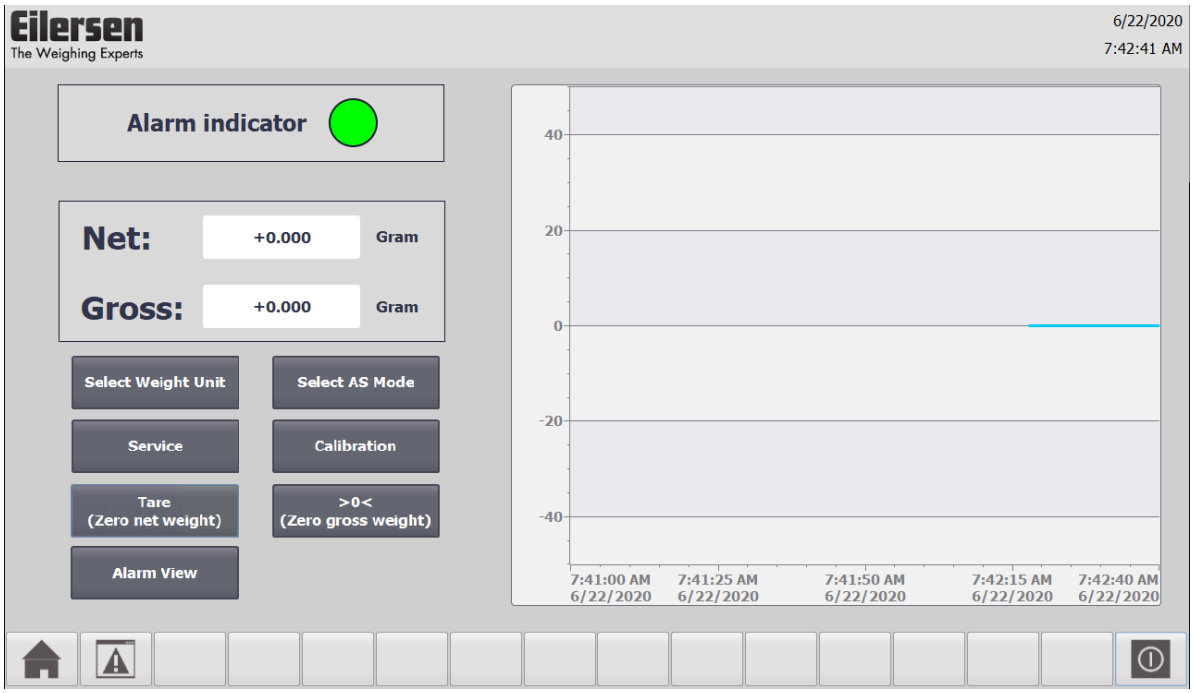


Figure 5 - HMI Front screen

On the HMI screen, there are shown two parameter values: “Net” and “Gross” weight. See Figure 5.

These values are visible only when AS mode is set to 0, 1 or 2

Each of the parameters has a button for zeroing the weight:

- “Tare (Zero net weight)”

and

- “>0< (Zero gross weight)”

When either of these buttons are pressed, a warning associated with that button is shown, as seen on Figure 6 and Figure 7.

Figure 7 - Tare warning display

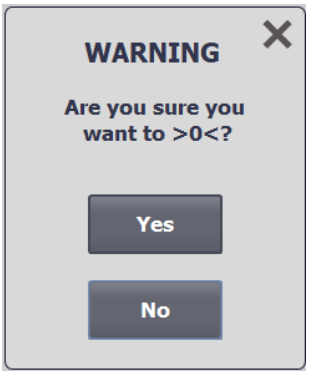


Figure 6 - >0< warning display

The alarm indicator seen in Figure 5, switches from green to red only if a major alarm occurs.

There is also a live graph of both the Net and Gross weight, as seen in Figure 5.

When the "Select AS Mode" button is pressed a pop-up appears, see Figure 8.

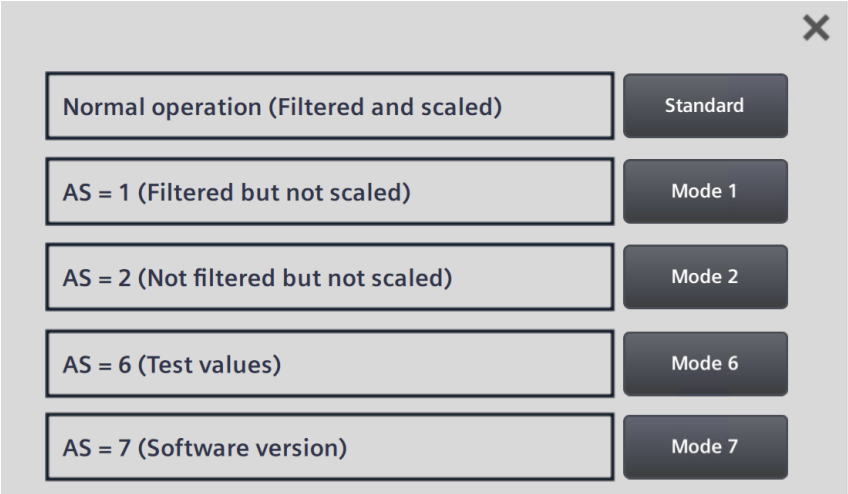


Figure 8 - AS mode pop-up

Here it is possible to select between four modes, which are:

- Standard: Filtered and scaled (Default mode)
- Mode 1: Filtered but not scaled (The signal is not scaled but it is "adjusted by the calibration factor" E.g. if there are 3 legs on a tank and only 1 load cell, the signal weight shown will be tripled)
- Mode 2: Not filtered and not scaled (The signal is not scaled but it is "adjusted by the calibration factor")
- Mode 6 (Test mode): shows hardcoded signal values, in AS mode 6, net and gross weight are paused for updating and invisible in "HMI Front screen"
- Mode 7 (Software version): shows software version for the profinet module, in AS mode 7, net and gross weight are paused for updating and invisible in "HMI Front screen"
-

These “AS” modes are described in more details in Eilersen user manual for the 4x70 module.

When the “Calibration” button is pressed, a pop-up appears, see Figure 9.

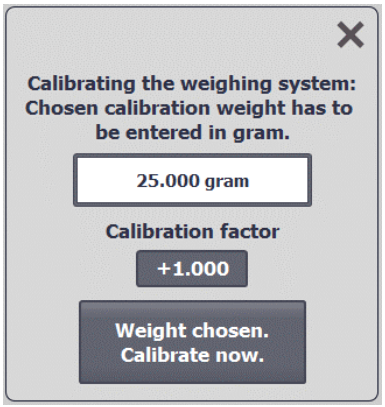


Figure 9 - Calibration pop-up-window

From here it is possible to calibrate the weighing system.
Enter the known weight into the input display (in gram) and then pressing the “Weight chosen. Calibrate now” button.
You can also adjust the calibrating factor by pressing the input display.
Note that if you press the “Weight chosen. Calibrate now” button, after you manually adjusted the calibrating factor, then this manual change will not take effect.

After the system is calibrated, you can see the calibrating factor by pressing the “Service” button.

Ensure that the calibration factor is not too far from what is described in Eilersen user manual section “System calibration of weighing system”.

When the “Service” button is pressed, a pop-up appears, see Figure 10.

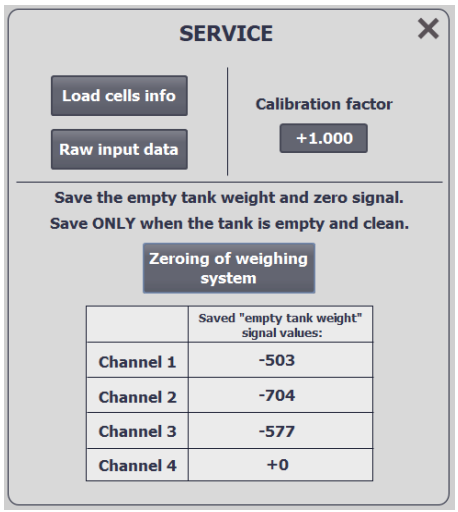


Figure 10 - Service pop-up

This is a service window, from here it is possible to:

- See the Raw input data from the PROFINET-module, by pressing the “Raw input data” button. When pressed, a new pop-up appears, see Figure 11.
- See each load cell’s serial number, exponent and capacity, by pressing the “Load cells info” button. When pressed, a new pop-up appears, see Figure 12.
- See calibration factor
- Save the empty tank weight by pressing the “Zeroing of weighing system” button. (This is a raw calibration)
- Change the empty tank signal values manually

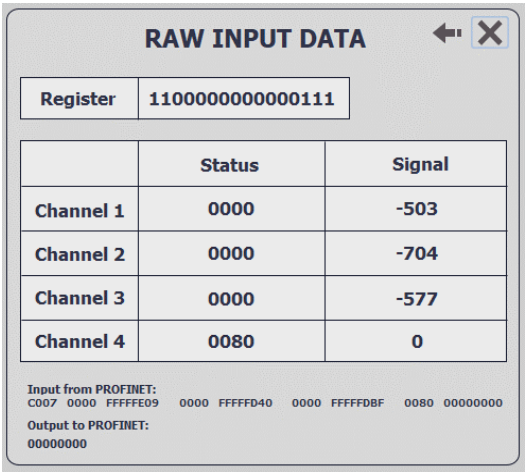


Figure 11 - Raw input data from PROFINET-module

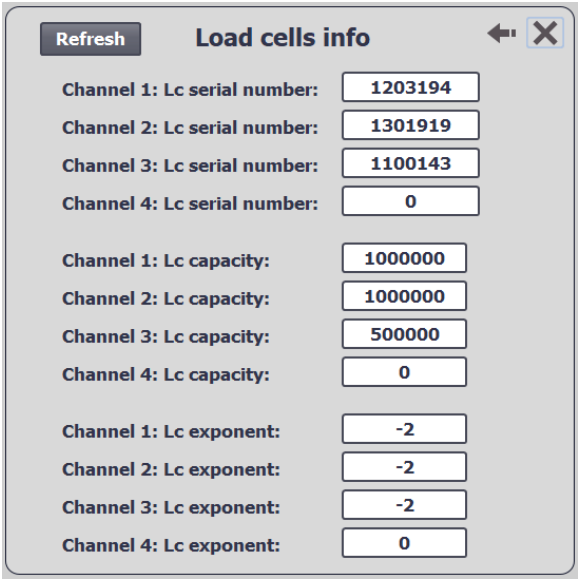


Figure 12 - Load cells info pop-up

When the button “Select Weight Unit” is pressed, a pop-up appears, see Figure 13. From the pop-up it is possible to choose between weight units: Gram, Kg, Ton. Weight unit selection is not available when any error is active.

Figure 13 - Select weight unit pop-up

The Button “Alarm View”, see Figure 20, brings up a pop-up window where all available diagnostics data and current pending alarms are displayed from the following in-built alarm classes.

- Errors – This is the alarm class for the alarms generated in the “Eilersen_Basic_Startup” block.
- Warnings – This is a WinCC in-built generic alarm class
- System – This is a WinCC in-built alarm class for displaying device specific diagnostics data
- Diagnosis events – This is a WinCC in built alarm class for displaying overall diagnostics of current configured devices.

The alarms related to the “Eilersen_Basic_Startup” FB is configured and imported at the time of importing the “EilersenHMITags”

Pending alarms can be acknowledged by pressing

Alarm status is as defined under alarm class properties in WinCC Advanced or under “Runtime settings” in WinCC Unified

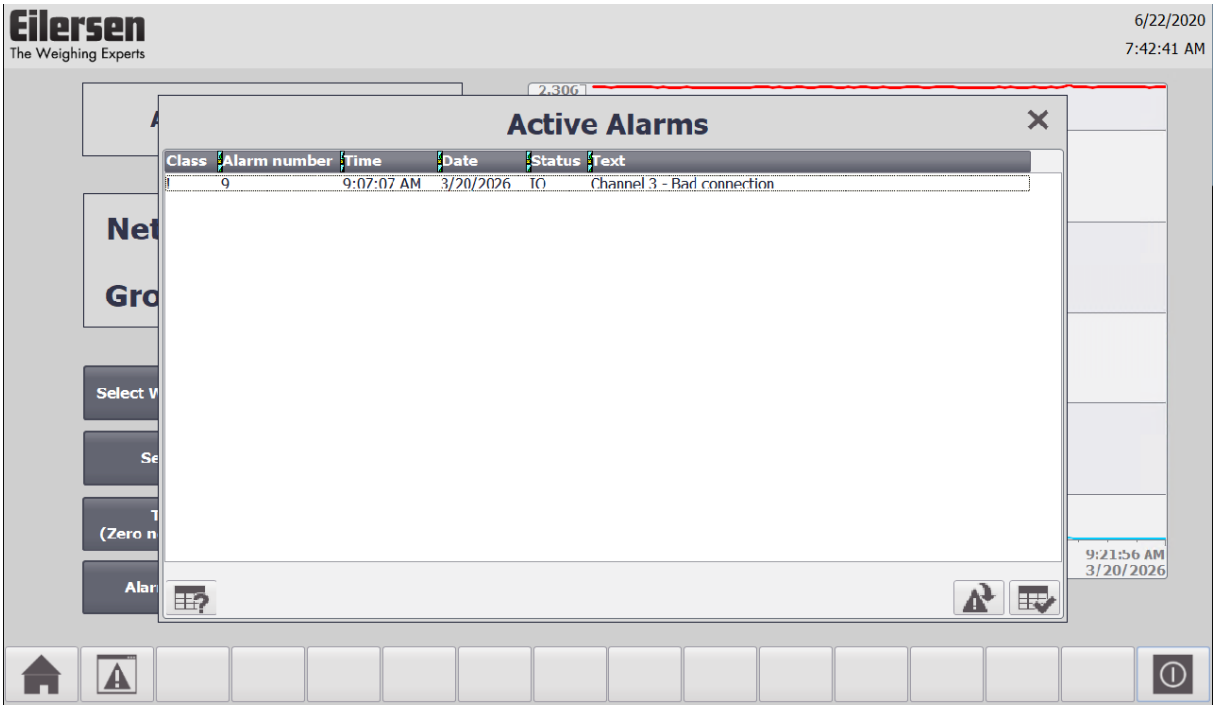


Figure 20 – Alarm View pop-up

Alarm classes can be configured accordingly to meet current requirements under tree section “HMI Alarms” see figure 21.

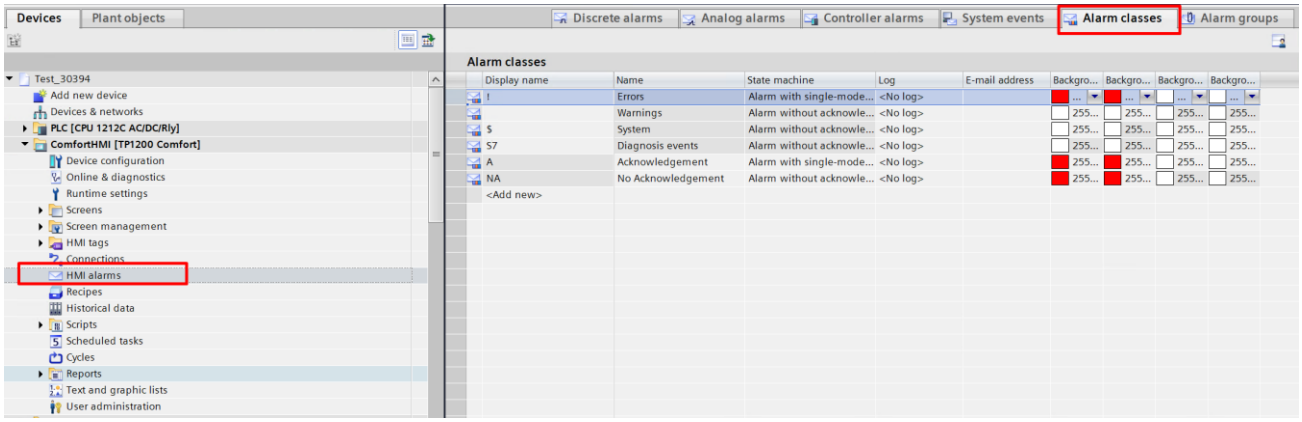


Figure 21 – Alarm class configuration

First time usage

- Ensure that the tank on the load cells is empty and clean.
- Press “Service” and then press the “Zeroing of weighing system” button.
- Put the calibration weight in / on the tank.
- Press the “Calibration” button. Enter the calibration weight into the input display in gram.
- Press the “Weight chosen. Calibrate now” button.
- Make sure that the weight now showing on the “Front screen”, is the same as the calibration weight.

Appendix – FAQ, Tips and Tricks

This section contains Frequently Asked Questions (FAQ), Tips and Tricks related to the PROFINET PLC Function Block (FB) for the 4x70A PROFINET module. This appendix is to be considered a supplement in addition to the information stated in the preceding sections.

How to Setup/Configure the PLC block?

1) It is possible to implement the PLC block without inclusion of the HMI interface, but will require more basic knowledge on how zeroing, taring, calibration, selection of unit and selection of AS-mode is made using read and write of the different variables available in the PLC block. Please also refer to the document describing the software version in the 4x70A PROFINET module.
2) The PROFINET connection between the PLC and the 4x70A PROFINET module is configured using the supplied GSDML file. The GSD-device needs to be configured with an IP address and assigned an address area in the PLC. The PLC block is then inserted into the PLC project.
3) In order to correctly configure the PLC block, for example in a system with 2 load cells using a 4270A PROFINET module (see later in this appendix for sample screen shots of such a system), the following must be performed with ***names*** referring to variables in the PLC block:
4) The PLC block must be configured so the **Eilersen_input** is mapped to the input byte that the GSD-device has been assigned to.
5) The PLC block must be configured so the **Output_AS_Value** is mapped to the output byte that the GSD-device has been assigned to.
6) The **SWP_1** and **SWP_2** variables must be set to represent the actual setting of the SWP.1 and SWP.2 switches on the 4270A module to ensure correct scaling. Normally both DIP switches are set in the OFF position; hence **SWP_1** and **SWP_2** should normally be FALSE.
7) The **Channel_1** to **Channel_4** variables should be set to reflect the number of load cells connected to the system. Thus in a system with a 4270A PROFINET module and 2 load cells both **Channel_1** and **Channel_2** should be TRUE, while the remaining **Channel_3** and **Channel_4** both should be FALSE.
8) The calibration factor (**Cal_Factor**) should be set to 1.00000 (possibly a different value in systems where not all supporting points are equipped with a load cell; see below) until a calibration is performed and overwrites this value.
9) The desired weight unit (**Weight_Unit**) for the system should be selected (Gram, Kg or Tons). The choice should reflect the actual load cells and their capacity. The choice is made by setting one of the following three to TRUE while the remaining two must remain FALSE: **Chosen_Gram_On_HMI** , **Chosen_Kg_On_HMI** or **Chosen_Ton_On_HMI**.
   Once the selection has been made the **Weight_Unit** will reflect the choice as:

   Weight_Unit = 1 = Gram
   Weight_Unit = 2 = Kg
   Weight_Unit = 3 = Tons

10) During normal operation it should be ensured that the **Output_AS_Value** is 0. This is done by writing TRUE to **Chosen_AS_Value_Is_0**. Please refer to the document describing the software version in the 4x70A PROFINET module for how the different AS values are handled. Setting the AS value to a different value than 0 is used for test purpose or to

transfer other values than the load cell signals. Setting the AS to a value different than 0 will cause the load cell status from the 4x70A PROFINET module to differ from 0.

How to read the raw load cell signals?

1) The raw load cell signals for the connected load cells that are received on the PROFINET and used to generate the system gross weight, they can be read directly in **Ch[1]** to **Ch[4]**.
2) This can be useful during error finding.

How to handle error codes and alarms?

1) The status of each of the connected load cells (and enabled load cells using **Channel_1** to **Channel_4**) can be read from: **Lc_Status_0_Ch1_Hex_Number** to **Lc_Status_3_Ch4_Hex_Number**.
2) During normal operation the status of all connected load cells should be 0. If the load cell status is different from 0, this is an error code signaling that something is wrong.
3) An error code can be simulated/provoked by disconnecting a load cell from its BNC connector and verify that an error code appears in the appropriate status register, and then reconnecting it again once the check has been made.
4) The load cell status codes are use by the PLC block to generate certain alarm flags, that should be monitored as well.
5) **IMPROTANT:** During normal operation the load cell signals and weight values from the PLC block may **NOT** be used if an error is indicated. Also if an error is indicated, then actions such as Zero, Tare, Calibration, etc. should **NOT** be performed/attempted.

How to Zero (zero gross weight)?

1) Prior to performing a **Zero** operation (zero of gross weight), make sure that the weighing system on the load cells is empty and clean.
2) To perform the **Zero** operation set **Calc.Set_Gross_Weight_Unitless_Zero** to TRUE, and then set **Calc.Set_Gross_Weight_Unitless_Zero** back to FALSE again.
3) The **Zero** operation should NOT be attempted or allowed if an error/alarm is indicated.
4) The actual zero value stored as a result of the **Zero** operation can be read from **Calc.Gross_Weight_Set_Zero**.

How to Tare (zero net weight)?

1) To perform a **Tare** operation (zero of net weight) set **Calc.Zeroing_Net_Tare** to TRUE, and then set **Calc.Zeroing_Net_Tare** back to FALSE again.
2) The **Tare** operation should NOT be attempted or allowed if an error/alarm is indicated.
3) The actual tare value stored as a result of the **Tare** operation can be read from **Calc.Net_Weight_Set_Zero**.

How to change the calibration manually/directly?

1) The PLC block contains a calibration factor (**Cal_Factor**) that is used to calibrate the final gross weight (**Weight_Data.Gross_Weight**) and hence also the final net weight (**Weight_Data.Net_Weight**).
2) The final gross weight (**Weight_Data.Gross_Weight**) is determined as the gross weight prior to calibration (**Calc.Gross_Weight**) multiplied by the calibration factor (**Cal_Factor**).
3) The calibration factor (**Cal_Factor**) can be changed directly. So if you increase the calibration factor by 1%, for instance from 1.00000 to 1.01000, the final gross weight and net weight values will increase by 1%.
4) There is no upper or lower limit on the value of the calibration factor (**Cal_Factor**).
5) In normal systems with load cells under each supporting point, the calibration factor (**Cal_Factor**) should be close to 1.00000 depending on a performed calibration (see below). If the calibration factor is below 0.90000 or above 1.10000, this could indicate a mechanical problem in the weighing system, that has to be taken care of.
6) After changing the calibration factor (**Cal_Factor**) always check, that the weight reading is correct when a known load is applied to the system.

How to use the calibration feature?

1) Make sure that the weighing system on the load cells is empty and clean.
2) Perform a **Zero** operation as well as a **Tare** operation.
3) Place the known calibration load on/in the weighing system. To optimize the calibration, make sure the used calibration load is as close to the maximum capacity of the system as possible.
4) Write this used calibration load into **Calc.Cal_Load** ensuring it is entered using the proper unit.
5) To perform the **Calibration** operation set **Calc.System_Calibration_Of_Weighing_System** to TRUE, and then set **Calc.System_Calibration_Of_Weighing_System** back to FALSE again.
6) The calibration factor (**Cal_Factor**) should now be updated and used to determine the final gross weight.
7) Verify that the weight reading is now correct and matches the used calibration load.
8) The **Calibration** operation should NOT be attempted or allowed if an error/alarm is indicated.

How to handle systems with less load cells than supports?

1) If the weighing system does not have load cells under all supporting points (i.e. such as a 3 legged tank with load cell under 1 leg, or a 4 legged tank with load cells under 2 legs), and if the weighing system is symmetrical, and if the load/content can be considered evenly distributed on the weighing system, then correct weight reading can obtained by scaling up to the final gross weight (**Weight_Data.Gross_Weight**) using the calibration factor (**Cal_Factor**) as follows.
2) As an example in a system with 3 supporting points and only 1 load cell under one of the points, the calibration factor (**Cal_Factor**) should be set to 3.00000 as the system otherwise will only show approximately 1/3 of the actual load as 2/3 of the load will be ab-

sorbed by the supporting points without load cells. Similar for a system with 4 supporting points and only 2 load cells, the calibration factor (**Cal_Factor**) should be set to 2.00000.

3) Care should be taken if the build in calibration feature is used to fine calibrate the system, as this requires the applied load to be distributed evenly among the supporting points with or without load cells. Using this calibration feature should result in a calibration factor (**Cal_Factor**) close to either 3.00000 or 2.00000 in the 2 above examples respectively.
4) After changing the calibration factor (**Cal_Factor**) always check, that the weight reading is correct when a known load is applied to the system.

Sample PLC screenshots

The following section shows sample PLC screenshots of a system with 2 load cells using a 4270A PROFINET module.

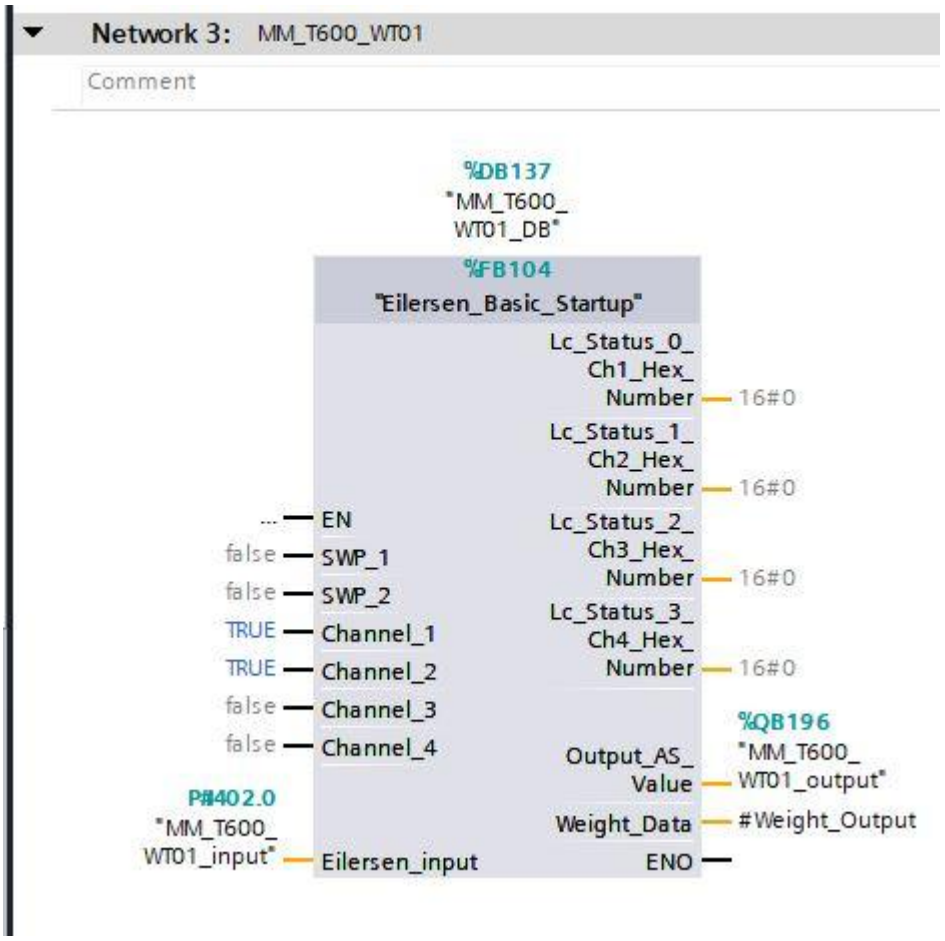


Figure 14 – PLC Function Block

MM_T600_WT01_DB

	Name	Data type	Offset	Start value	Monitor value	Retain
1	Input					
2	SWP_1	Bool	0.0	false	FALSE	☑
3	SWP_2	Bool	0.1	false	FALSE	☑
4	Channel_1	Bool	0.2	false	TRUE	☑
5	Channel_2	Bool	0.3	false	TRUE	☑
6	Channel_3	Bool	0.4	false	FALSE	☑
7	Channel_4	Bool	0.5	false	FALSE	☑
8	Eilersen_input	"Eilersen_input"	2.0			☑
9	Output					
10	Lc_Status_0_Ch1_Hex...	Word	28.0	16#0	16#0000	☑
11	Lc_Status_1_Ch2_Hex...	Word	30.0	16#0	16#0000	☑
12	Lc_Status_2_Ch3_Hex...	Word	32.0	16#0	16#0000	☑
13	Lc_Status_3_Ch4_Hex...	Word	34.0	16#0	16#0000	☑
14	Output_AS_Value	SInt	36.0	0	0	☑
15	Weight_Data	Struct	38.0			☑
16	Net_Weight	Real	38.0	0.0	0.0	☑
17	Gross_Weight	Real	42.0	0.0	0.0	☑
18	Cal_Factor	Real	46.0	0.0	0.0	☑
19	InOut					
20	Static					
21	Unit	Struct	50.0			☑
22	Weight_Unit	Int	50.0	0	2	☑
23	Weight_Unit_Nor...	Int	52.0	0	2	☑
24	Chosen_Gram_On...	Bool	54.0	false	FALSE	☑
25	Chosen_Kg_On_HMI	Bool	54.1	false	FALSE	☑
26	Chosen_Ton_On_...	Bool	54.2	false	FALSE	☑
27	Calc	Struct	56.0			☑
28	Gross_Weight_Set...	DInt	56.0	0	0	☑
29	Gross_Weight_Uni...	DInt	60.0	0	904999	☑
30	Gross_Weight	Real	64.0	0.0	904.999	☑
31	Set_Gross_Weight...	Bool	68.0	false	FALSE	☑
32	Net_Weight_Unitless	Real	70.0	0.0	6209.0	☑
33	Net_Weight	Real	74.0	0.0	6.209	☑
34	Net_Weight_Set_Z...	DInt	78.0	0	898790	☑
35	Zeroing_Net_Tare	Bool	82.0	false	FALSE	☑
36	Lc_Signal_Tot	DInt	84.0	0	904999	☑
37	Help_Calculation	DInt	88.0	0	904999	☑
38	Cal_Load	Real	92.0	0.0	0.0	☑
39	SWP_Value	Real	96.0	0.0	1000.0	☑
40	System_Calibratio...	Bool	100.0	false	FALSE	☑
41	Input_Signal	Struct	102.0			☑
42	Ch	Array[1..4] of DInt	102.0			☑
43	Ch[1]	DInt	102.0	0	196939	☑
44	Ch[2]	DInt	106.0	0	708060	☑
45	Ch[3]	DInt	110.0	0	0	☑
46	Ch[4]	DInt	114.0	0	0	☑

Figure 15 – PLC Function Block Variables (1/3)

47	Weight_And_Signal	Struct	118.0			☑
48	Save	Bool	118.0	false	FALSE	☑
49	Ch	Array[1..4] of DInt	120.0			☑
50	Ch[1]	DInt	120.0	0	0	☑
51	Ch[2]	DInt	124.0	0	0	☑
52	Ch[3]	DInt	128.0	0	0	☑
53	Ch[4]	DInt	132.0	0	0	☑
54	Total	DInt	136.0	0	0	☑
55	Check_Status	Struct	140.0			☑
56	Value_16_Ch	Array[1..4] of Int	140.0			☑
57	Value_32_Ch	Array[1..4] of Int	148.0			☑
58	Value_64_Ch	Array[1..4] of Int	156.0			☑
59	Value_128_Ch	Array[1..4] of Int	164.0			☑
60	Value_2048_Ch	Array[1..4] of Int	172.0			☑
61	Value_4096_Ch	Array[1..4] of Int	180.0			☑
62	Alarm	Struct	188.0			☑
63	Some_Alarm_Has_...	Bool	188.0	false	FALSE	☑
64	HMI_Alarm	Int	190.0	0	0	☑
65	Before	Struct	192.0			☑
66	Pwr_Failure_Ch	Array[1..4] of Bool	202.0			☑
67	No_Answer_Ch	Array[1..4] of Bool	204.0			☑
68	New_Lc_Or_Lc_Sw...	Array[1..4] of Bool	206.0			☑
69	Normal_Oper_NO...	Array[1..4] of Bool	208.0			☑
70	AS_Mode	Struct	210.0			☑
71	AS_Value_Chosen	SInt	210.0	0	0	☑
72	AS_Value_Chosen...	SInt	211.0	0	0	☑
73	Chosen_AS_Value...	Bool	212.0	false	FALSE	☑
74	Chosen_AS_Value...	Bool	212.1	false	FALSE	☑
75	Chosen_AS_Value...	Bool	212.2	false	FALSE	☑
76	Chosen_AS_Value...	Bool	212.3	false	FALSE	☑
77	Chosen_AS_Value...	Bool	212.4	false	FALSE	☑
78	Chosen_AS_Value...	Bool	212.5	false	FALSE	☑
79	AS_Value_Is_6	Bool	212.6	false	FALSE	☑
80	Alarm_Stop	Bool	212.7	false	FALSE	☑
81	Serial_Number_Ch...	DInt	214.0	0	0	☑
82	Serial_Number_Ch...	DInt	218.0	0	0	☑
83	Serial_Number_Ch...	DInt	222.0	0	0	☑
84	Serial_Number_Ch...	DInt	226.0	0	0	☑
85	Lc_Capacity_Chan...	DInt	230.0	0	0	☑
86	Lc_Capacity_Chan...	DInt	234.0	0	0	☑
87	Lc_Capacity_Chan...	DInt	238.0	0	0	☑
88	Lc_Capacity_Chan...	DInt	242.0	0	0	☑
89	Lc_Exponent_Cha...	DInt	246.0	0	0	☑
90	Lc_Exponent_Cha...	DInt	250.0	0	0	☑
91	Lc_Exponent_Cha...	DInt	254.0	0	0	☑
92	Lc_Exponent_Cha...	DInt	258.0	0	0	☑

Figure 16 – PLC Function Block Variables (2/3)

93	Timer_AS_0	TON_TIME	262.0			☑	☑	☑	☑	☑	
94	PT	Time	266.0	T#0ms	T#0MS	☑	☑	☑	☑	☐	
95	ET	Time	270.0	T#0ms	T#0MS	☑	☑	☐	☑	☐	
96	IN	Bool	274.1	false	FALSE	☑	☑	☑	☑	☐	
97	Q	Bool	274.2	false	FALSE	☑	☑	☐	☑	☐	
98	Timer_AS_5	TON_TIME	278.0			☑	☑	☑	☑	☑	
99	PT	Time	282.0	T#0ms	T#0MS	☑	☑	☑	☑	☐	
1...	ET	Time	286.0	T#0ms	T#0MS	☑	☑	☐	☑	☐	
1...	IN	Bool	290.1	false	FALSE	☑	☑	☑	☑	☐	
1...	Q	Bool	290.2	false	FALSE	☑	☑	☐	☑	☐	
1...	Timer_AS_4	TON_TIME	294.0			☑	☑	☑	☑	☑	
1...	PT	Time	298.0	T#0ms	T#0MS	☑	☑	☑	☑	☐	
1...	ET	Time	302.0	T#0ms	T#0MS	☑	☑	☐	☑	☐	
1...	IN	Bool	306.1	false	FALSE	☑	☑	☑	☑	☐	
1...	Q	Bool	306.2	false	FALSE	☑	☑	☐	☑	☐	
1...	Timer_Alarm_Stop	TON_TIME	310.0			☑	☑	☑	☑	☑	
1...	PT	Time	314.0	T#0ms	T#0MS	☑	☑	☑	☑	☐	
1...	ET	Time	318.0	T#0ms	T#0MS	☑	☑	☐	☑	☐	
1...	IN	Bool	322.1	false	FALSE	☑	☑	☑	☑	☐	
1...	Q	Bool	322.2	false	FALSE	☑	☑	☐	☑	☐	

Figure 17 – PLC Function Block Variables (3/3)

Where to find or insert the hardware address for module?

1) Open “Device configuration” for the module and navigate to “General”, see figure 18
2) Change Start address or use the one automatically assigned.

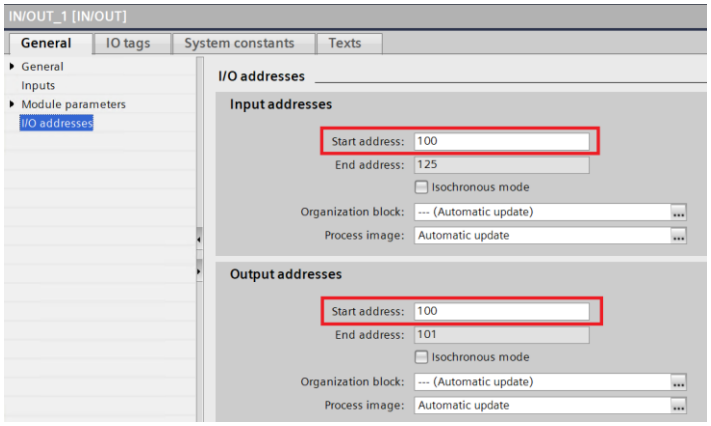


Figure 18 – Properties - General

3) Ensure the PLC tags have the same address, see figure 19

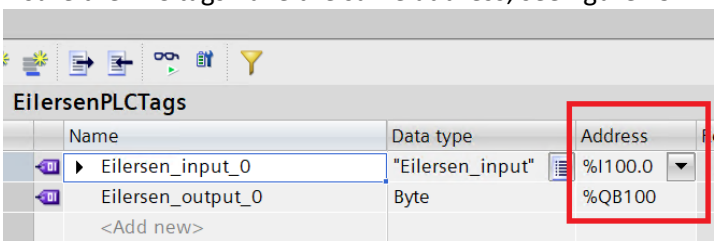
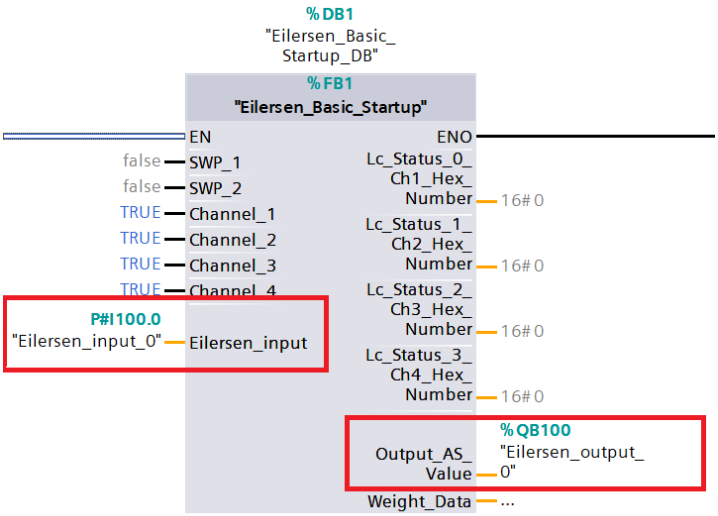


Figure 19 – PLC tag address

4) Insert the PLC tag on the program block


%DB1
"Eilersen_Basic_
Startup_DB"
%FB1
"Eilersen_Basic_Startup"
EN
ENO
false
SWP_1
false
SWP_2
TRUE
Channel_1
TRUE
Channel_2
TRUE
Channel_3
TRUE
Channel_4
P#I100.0
"Eilersen_input_0"
Eilersen_input
Lc_Status_0_
Ch1_Hex_
Number
16#0
Lc_Status_1_
Ch2_Hex_
Number
16#0
Lc_Status_2_
Ch3_Hex_
Number
16#0
Lc_Status_3_
Ch4_Hex_
Number
16#0
%QB100
"Eilersen_output_
0"
Output_AS_
Value
Weight_Data
...

Revision History

Date	*Author*	*Rev.*	*Update*
2020-08-21	*HJA*	*1v2*	*Initial document created.* *(based on Guide_Siemens_Eilersen_V1.2)*
2020-11-26	*HJA*	*1v2a*	*Added disclaimer in the introduction.*
2022-02-01	*HJA*	*1v2b*	*Added "Appendix – FAQ , Tips and Tricks".*
2022-02-03	*HJA*	*1v2c*	*Modified "Appendix – FAQ , Tips and Tricks".*
2026-03-05	*GM*	*1v2d*	*Modified "Appendix – FAQ , Tips and Tricks".*
2026-03-26	*RDH*	*1v2e*	*Replacement of screenshots, Additional Alarm management*
2026-04-21	*HJA & MD*	*1v4*	*Renamed document from* *Guide_Siemens_Eilersen_V1.2 (4x70) (200624-1v2e-eng)* *to* *Guide_Siemens_Eilersen_V1.4 (4x70) (260421-1v4-eng)* *and made minor changes to front page and revision history.*

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