Application Note

FESTO

Siemens TIA Portal with CPX I-Port Master for IO Link Devices

Basic steps for commissioning the CPX-CTEL-2-M12-5POL-LK with our SDAT-MHS-M80-1L-SA-E-0.3-M8 in the TIA Portal are described in this application note

CPX-CTEL-2-M12-5POL-LK,
SDAT-MHS-M80-1L-SA-E-0.3-M8,
CPX-FB34,
IM151-8F PN/DP CPU

100041

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1 Components/Software used

Type/Name	Version Software/Firmware	Date of manufacture
CPX-CTEL-2-M12-5POL-LK	Rev 2	--
SDAT-MHS-M80-1L-SA-E-0.3-M8	Rev 2	--
CPX-FB34	Rev 23	--
IM151-8F PN/DP CPU	FW 3.2.8	--
TIA Portal	V13 Update 4	--

Table 1.1: 1 Components/Software used

1.1 Utilised manuals

SDAT-MHS-DE manual:

http://www.festo.com/net/SupportPortal/Files/342426/8037938g1.pdf

CPX-CTEL-LK-DE manual:

http://www.festo.com/net/SupportPortal/Files/335395/8034115g1.pdf

2 Introduction

2.1 The CPX-CTEL-2-M12-5POL-LK I-Port Master for IO-Link devices

The CPX-CTEL...-LK has 2 communication ports (X1 & X2):

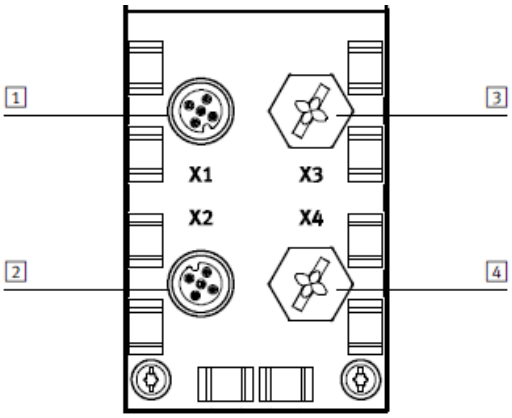
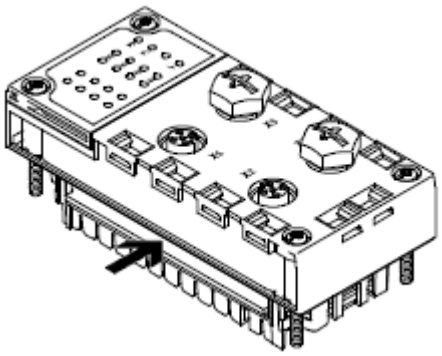


Figure 2.0: Communication ports

➔ And thus up to two IO-Link devices can be connected per interface. The I/O length of the connected device is determined with the DIL switch at the side.

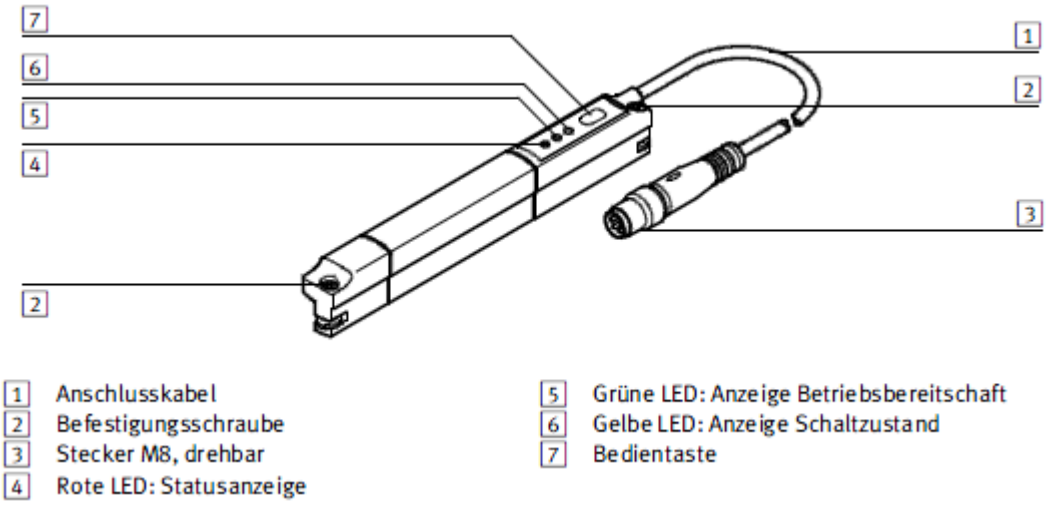


DIL-Schalter 1	S1.1	S1.2	Funktion
	OFF	OFF	4 Byte E/A
	OFF	ON	8 Byte E/A
	ON	OFF	12 Byte E/A
	ON	ON	16 Byte E/A

Figure 2.1: I/O length setting

2.2 The SDAT-MHS-M80-1L-SA-E-0.3-M8

The SDAT-MHS-...M8 is an IO-Link V1.1 position transmitter with a process data width of 2 bytes.



1 Anschlusskabel
2 Befestigungsschraube
3 Stecker M8, drehbar
4 Rote LED: Statusanzeige
5 Grüne LED: Anzeige Betriebsbereitschaft
6 Gelbe LED: Anzeige Schaltzustand
7 Bedientaste

Figure 2.2: SDAT-MHS..

2.3 Why can the CPX-CTEL...-LK communicate with the SDAT-MHS...?

To a certain extent, IO-Link 1.1 master characteristics have been incorporated into the CPX-CTEL...-LK. If a 1.1 IO-Link device such as the SDAT-MHS... is connected, it will function. As a prerequisite, the device must not require IO-Link specification 1.1 characteristics for IO-Link communication, which are not incorporated into the CPX-CTEL...-LK.

Rough IO-Link overview			
IO Link V1.0	**CPX-CTEL...-LK**	**IO-Link V1.1**	**SDAT-MHS... V1.1**
COM1: 4.8 kBaud	COM1: 4.8 kBaud	COM1: 4.8 kBaud	
COM2: 38.4 kBaud	COM2: 38.4 kBaud	COM2: 38.4 kBaud	
Optional: COM3: 230.4 kBaud	COM3: 230.4 kBaud	COM3: 230.4 kBaud	COM: 230.4 kBaud
	This works due to conformity.		
Class A/B port	Class A/B port	Class A/B port	Class A port
	Not implemented	**New:** Parameters configuring function i.e. parameters data are remanently stored to the master's memory.	
	Process data width: **max.** 16 bytes per port	**New:** Process data width of 32 bytes	Process data width: 2 bytes

Table 2.0: Rough overview, IO-Link specification

3 Installation

3.1 How do I connect the CPX-CTEL...-LK to the SDAT-MHS...?

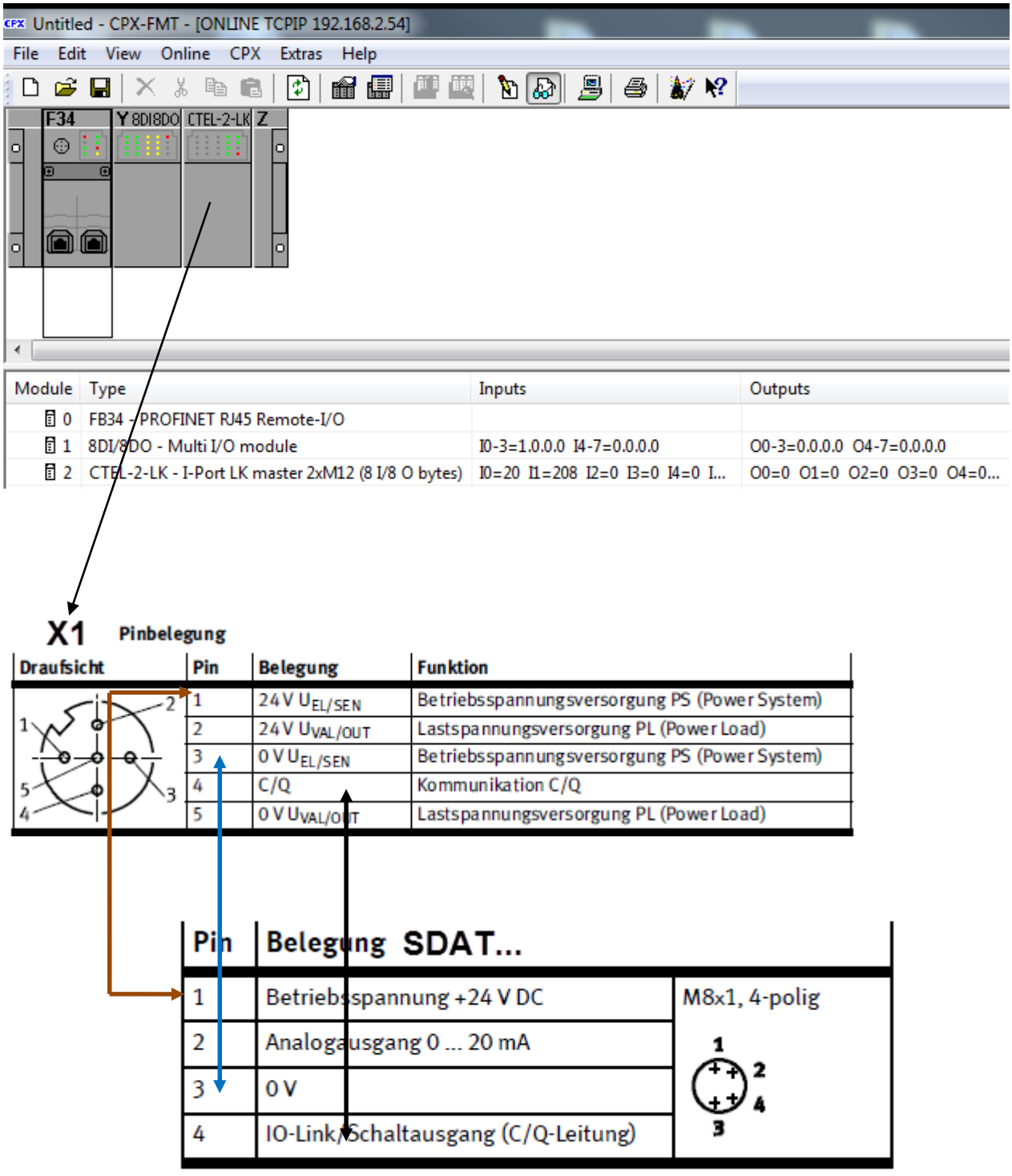
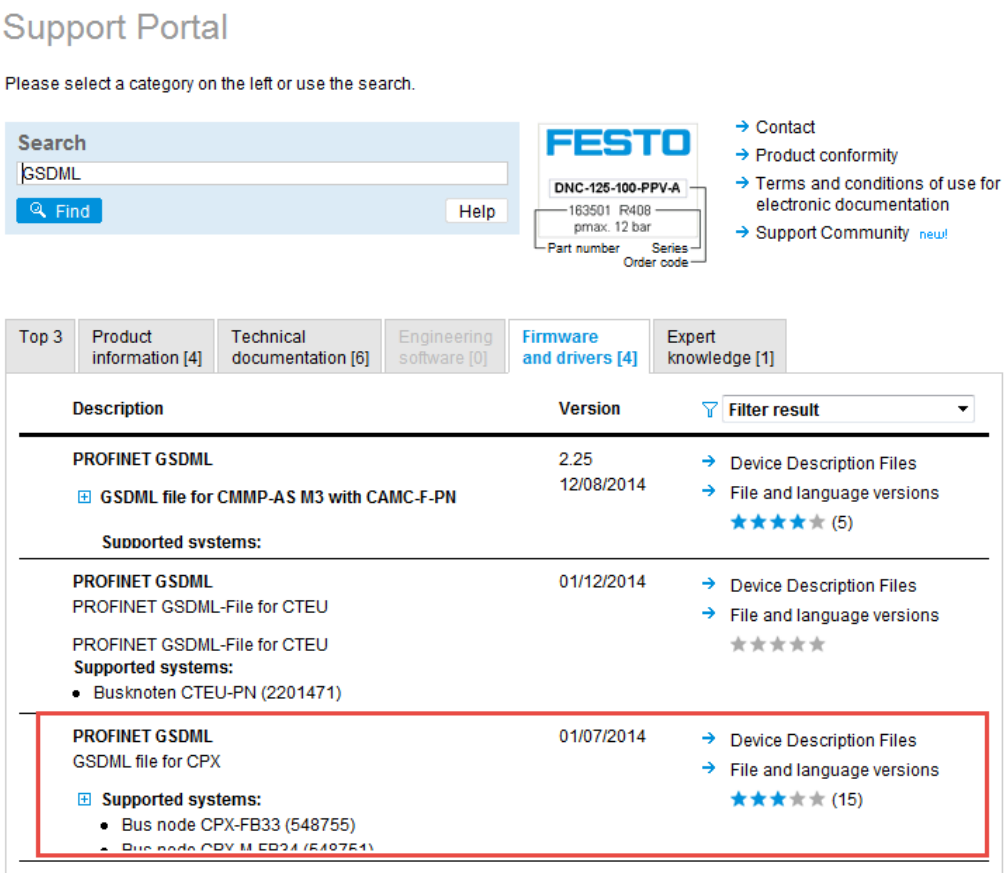


Figure 3.0: IO-Link connection

4 Commissioning the TIA Portal

4.1 Installation of the Profinet GSDML in the TIA Portal

The CPX GSDML file can be found in the Festo Support Portal:



http://www.festo.com/net/en-gb_gb/SupportPortal/default.aspx?q=GSDML&tab=5&s=t#result

Figure 4.0: Support Portal, GSDML

After downloading, it's installed via the TIA Portal:

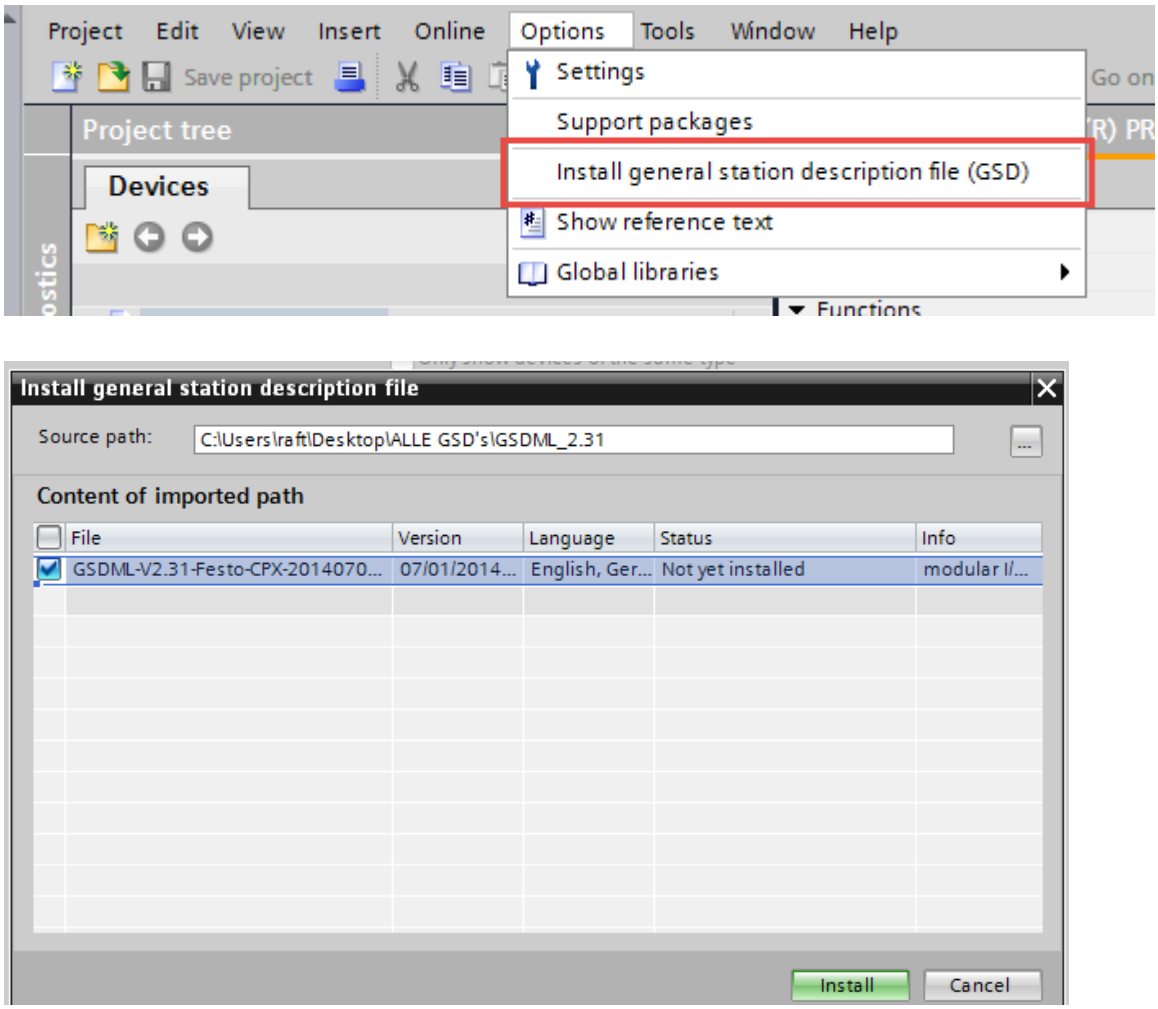


Figure 4.1: Installing the GSDML

4.2 Hardware configuration of the CPX valve terminal

After creating a new TIA Portal project and installing the CPX GSDML, the Festo Profinet valve terminal can be configured.

- First of all, drag and drop the correct CPX entry into the network to this end.

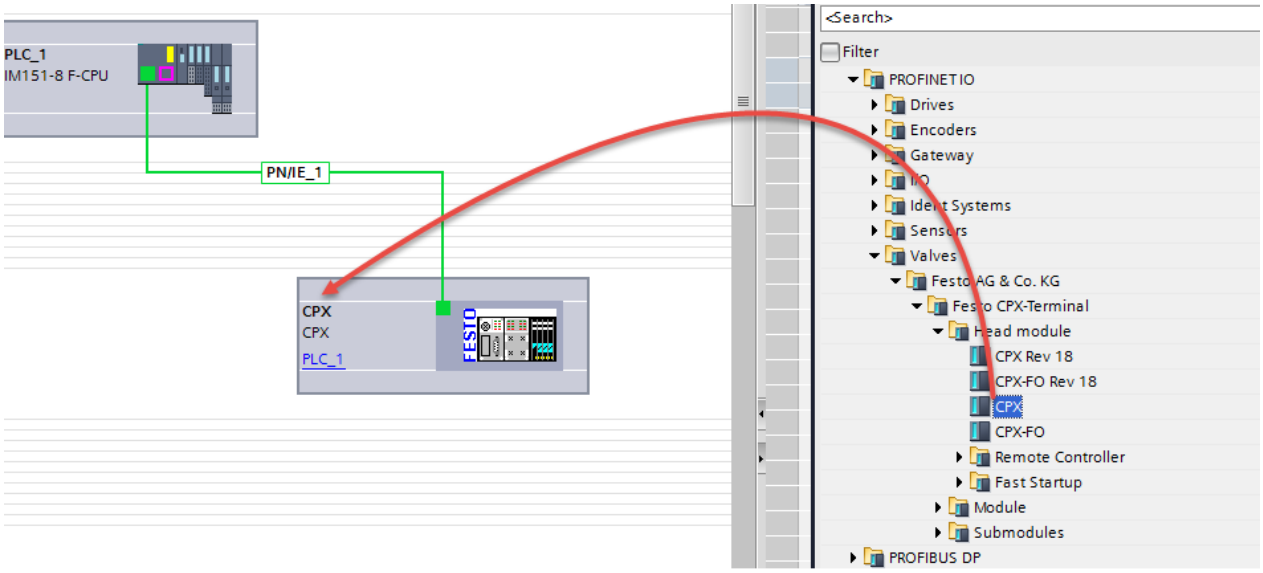


Figure 4.2: Drag and drop

Then conduct module configuration:

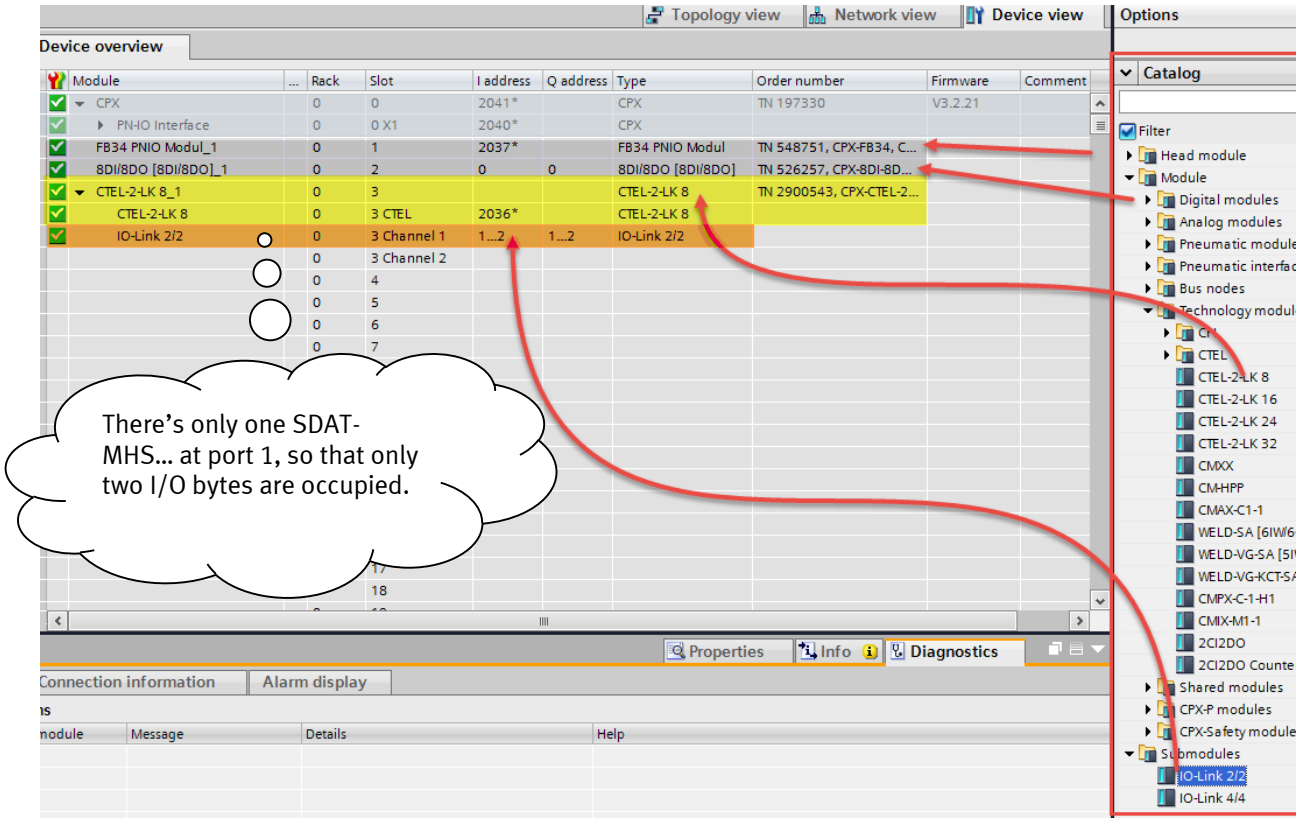


Figure 4.3: Drag and drop, module configuration

Recommendation: Use CPX-FMT software to compare the configuration.

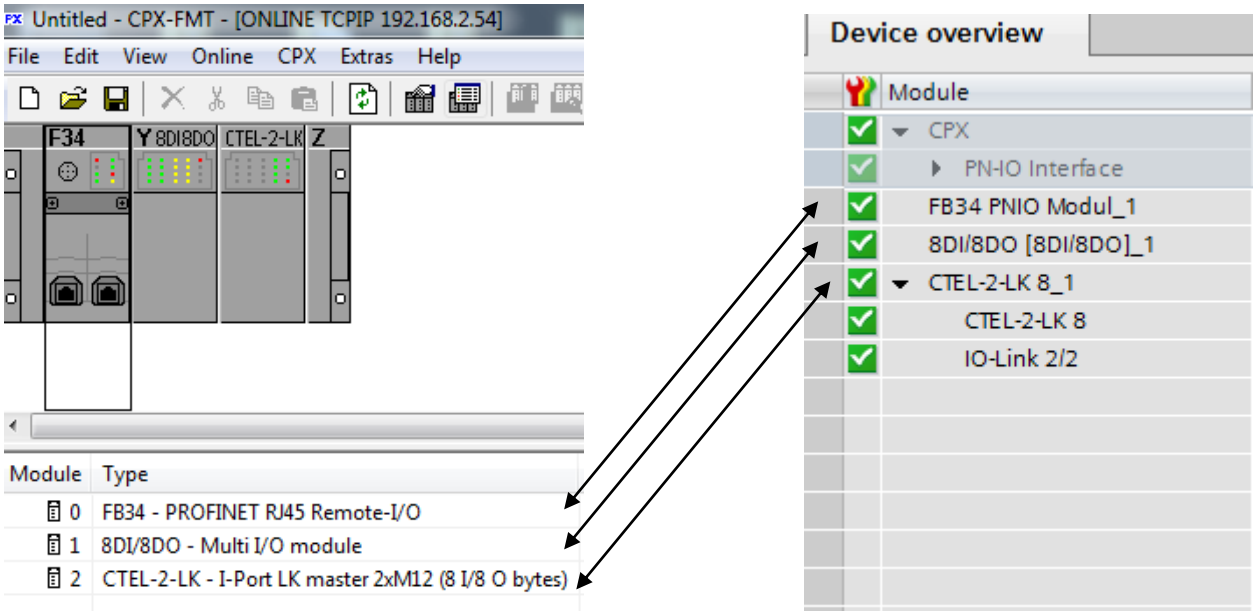


Figure 4.4: Comparing FMT with TIA module configuration

Note

Details concerning successful **Profinet** commissioning are included in the CPX-Profinet manual:
http://www.festo.com/net/SupportPortal/Files/349007/548759g1.pdf

4.3 Online test

After successful project downloading, no more errors are apparent in the TIA Portal online mode:

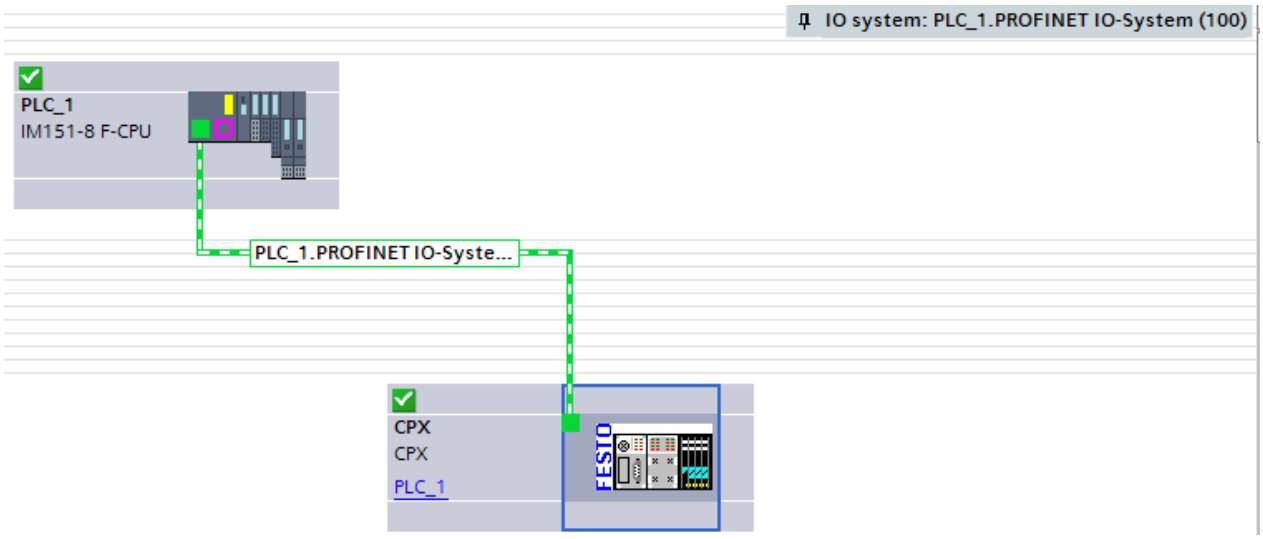


Figure 4.5: Online

Compliance of the SDAT values in the TIA Portal with FMT can be additionally checked using a TIA “watch table”.

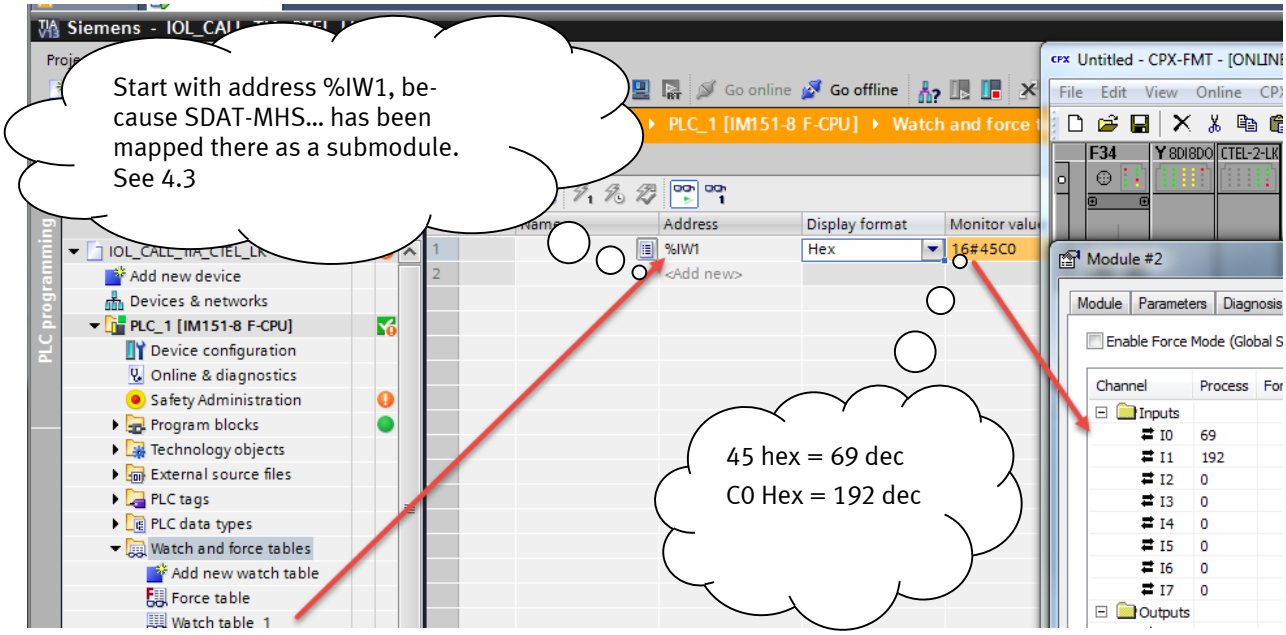


Figure 4.6: TIA “watch table” and FMT