Application Note

FESTO

CPX-AP-I-EP with Fanuc Robot R-30iB Controllers

How to commission a CPX-AP-I system on EtherNet/IP with a Fanuc Robot controller.

CPX-AP-I-EP

100431

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Table of contents

1 Components/Software used

Type/Name	Version Software/Firmware	Date of manufacture
CPX-AP-I-EP-M12	Rev. 1.4.5	
VMPAL-EPL-AP	Rev. 1.43.12	
CPX-AP-I-4DI4DO-M8-3P	Rev. 1.43.10	
CPX-AP-I-4IOL-M12	Rev. 1.5.6	
Fanuc R-30iB robot controller	xx	
EtherNet/IP Option for R-30iB	xx	

Table 1.1: 1 Components/Software used

2 Introduction

The CPX-AP-I-EP is an industrial ethernet adapter that supports both EtherNet/IP and Modbus TCP. This note will cover commissioning of the CPX-AP-I system to a Fanuc robot controller using EtherNet/IP. With respect to parametrization, this application note will cover the following method:

- Using “Stored Parameters” for storing the parameters in the CPX-AP-I-EP adapter.
    - This is easily done by using the web server of the CPX-AP-I system.
    - This can also handle the maximum number of parameters of the system.
    - The disadvantage is if the CPX-AP-I-EP adapter needs to be replaced, the parameter settings are lost, and need to be re-installed manually from a file.

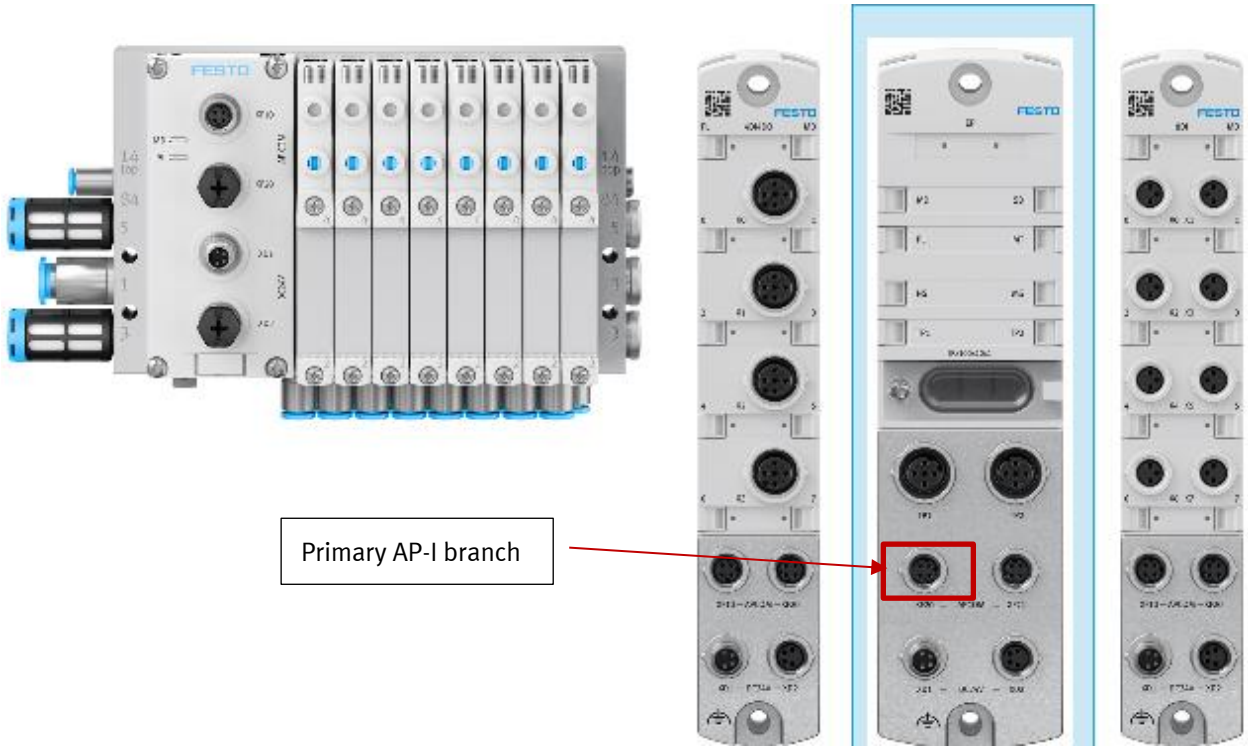
Festo provides documentation in a user manual to configure and use the AP-I system. This application note is intended to provide details and hints specific for use when using a Fanuc robot controller. It is a prerequisite to this note that the user must use the Festo documentation of the AP-I system modules for valves, I/O, and Ether-Net/IP. This is needed to become especially familiar with the following:

- Use of the Rotary switches of the CPX-AP-I-EP module
- Understanding of the LEDs of the system
- Understanding of the power, communication, and network cables used for the system
- Understanding power requirements, power distribution, and grounding of the system
- Understanding the use of module parameters

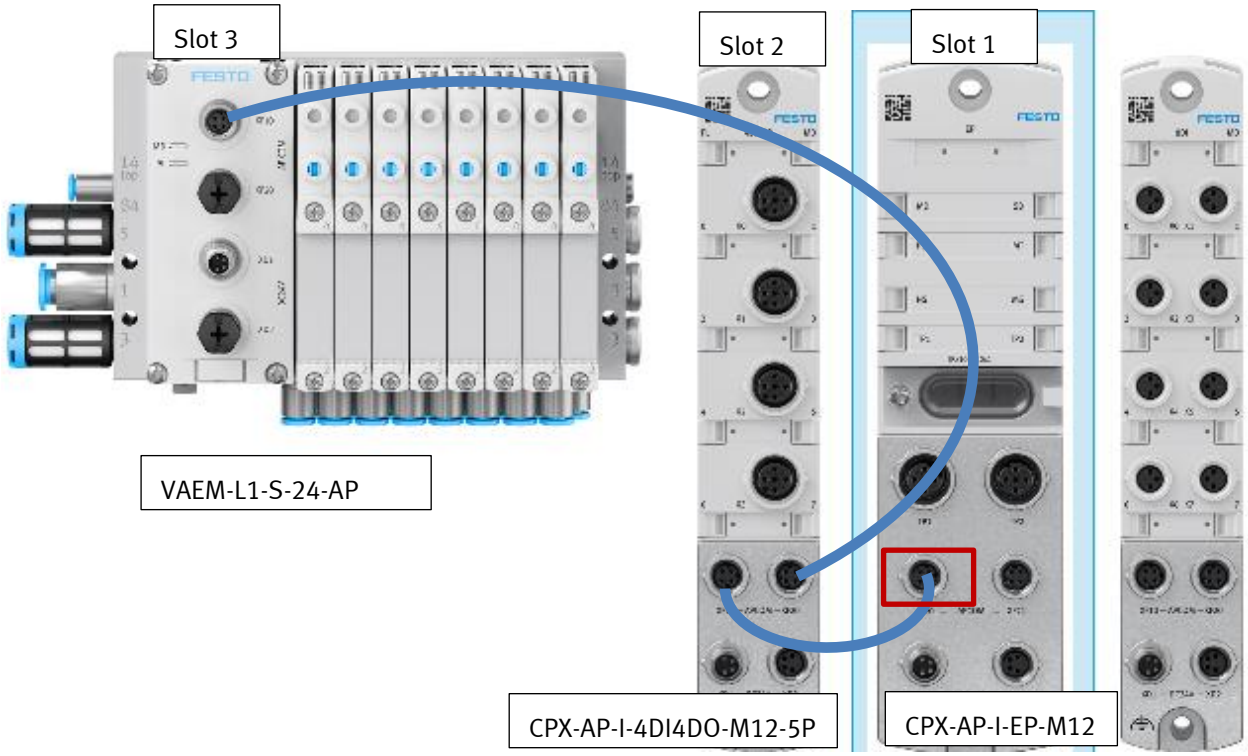
3 Terminal View for AP Modules

3.1.1 AP-I System Primary and Secondary Branches

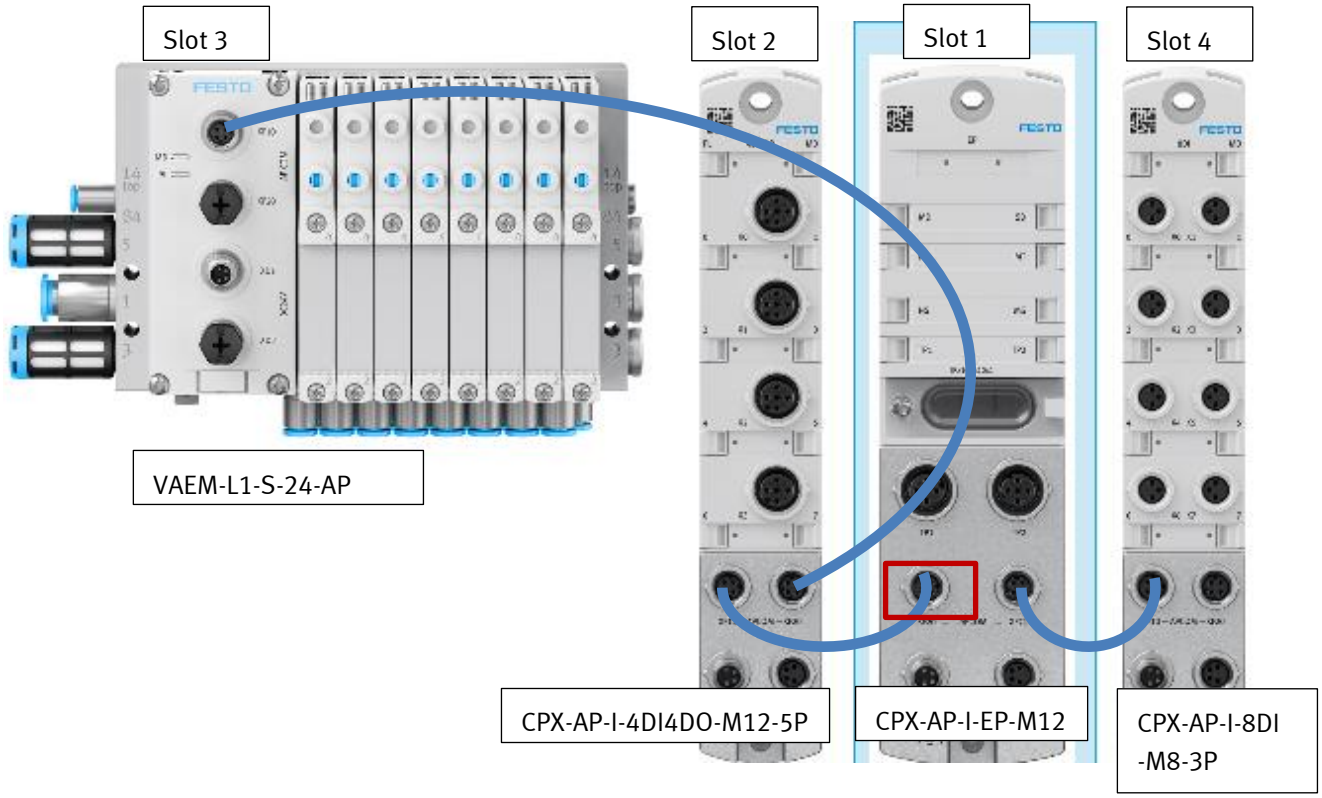
The AP-I system starts with a network adapter that has 2 branches for distributing I/O.



The CPX-AP-I-EP adapter is always slot 1 of the AP system. The left AP-I connector is the primary branch. All modules connected to the primary branch consume the next available slot numbers, in order of connection. The leftmost AP-I connector is the incoming branch (topmost for pneumatic), the rightmost is the outgoing branch.



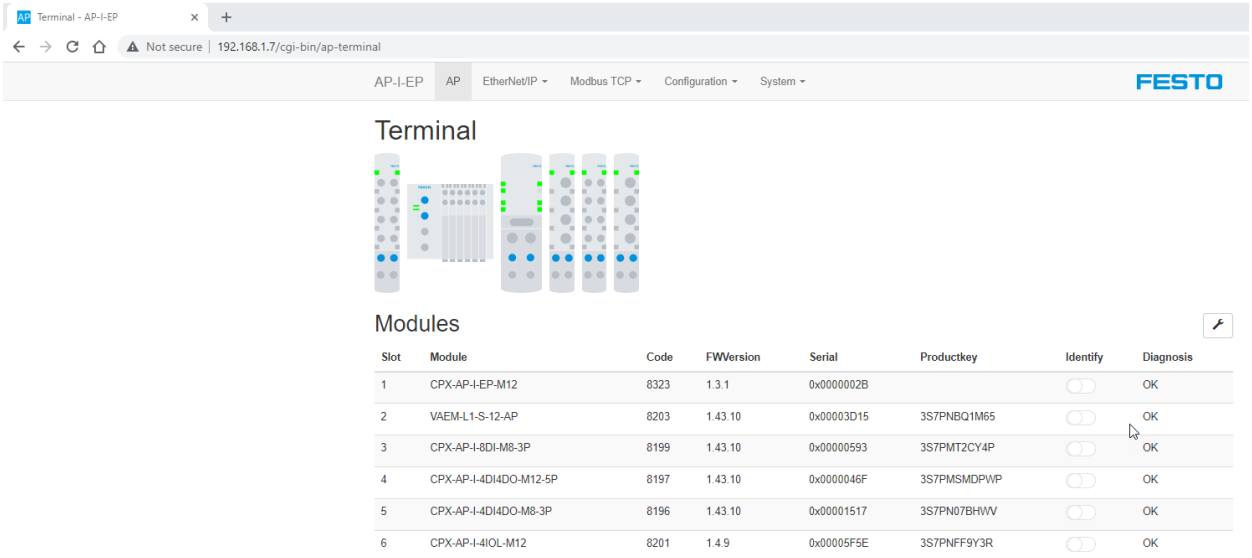
Example of primary branch, modules in slots 1, 2, and 3.



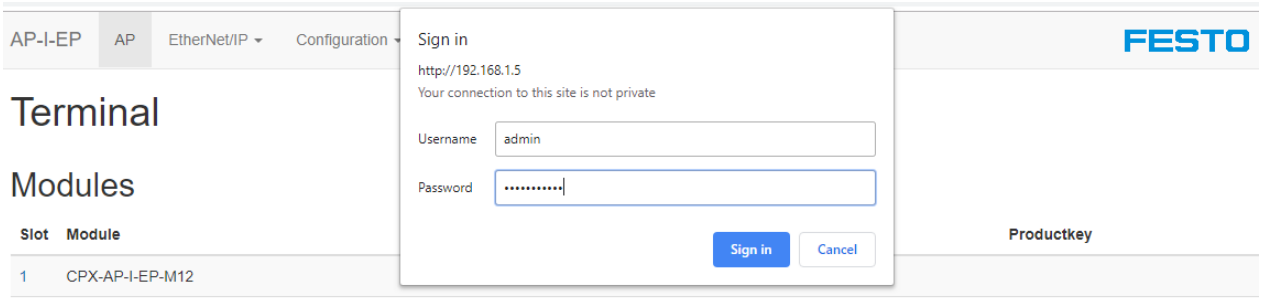
The right AP-I connector is the Secondary branch of the AP-I system. Modules connected to the Secondary branch start consuming slot numbers after the last slot number of the Primary branch. The above example shows the completed test system with all 4 slots consumed.

3.1.2 AP – Terminal and Parameters

The CPX-AP…EP webserver shows the connected configuration of the modules, slots 1 to 6 in this example. The module description, code, FW version, serial numbers, and product key are displayed. The EP product key is not displayed since this is the password for the web access. This is the 11 alpha/numeric code found on the adapter.



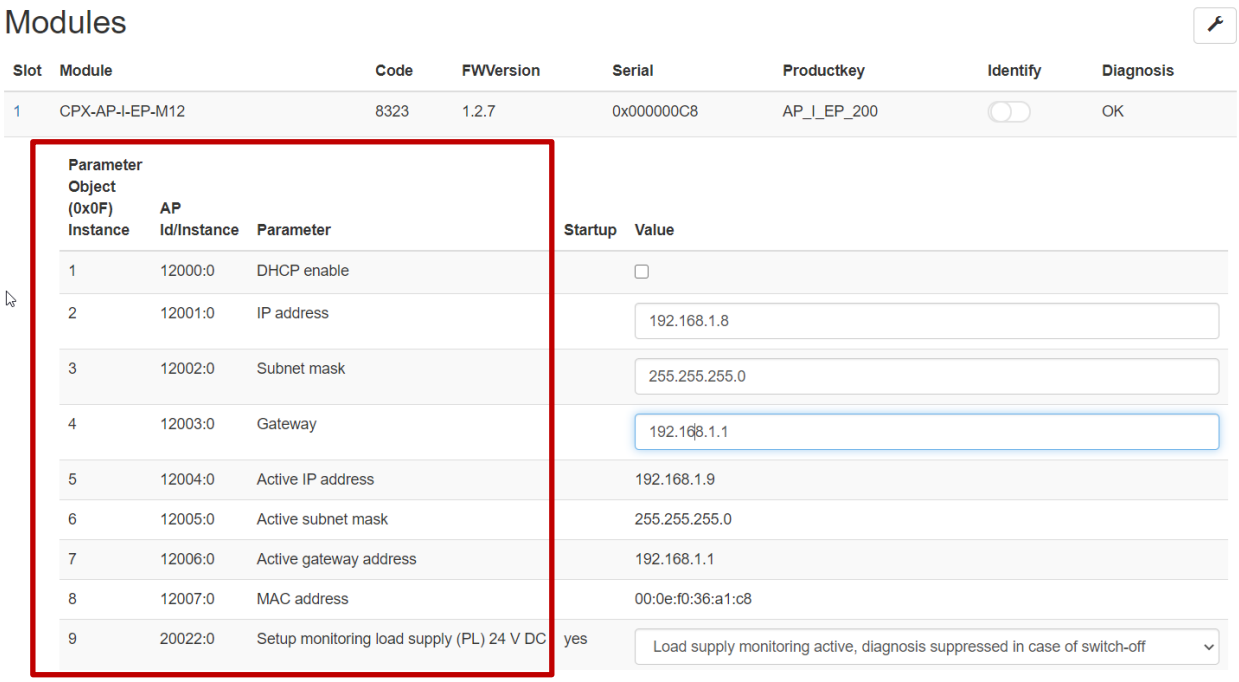
When selecting a module, a Sign-in access is required for the first time in a session. The credentials are:
User: admin
Password: the product key of the EP adapter found on label



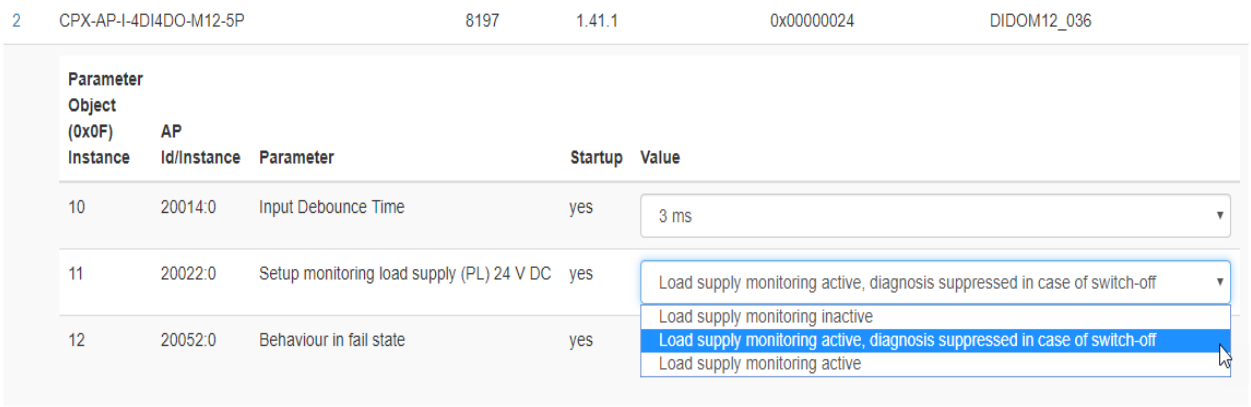
Each module can be configured by clicking on it. For example, slot 1 is the EtherNet/IP adapter. One click on the module opens the parameter selection list for the module.

Slot 1. The CPX-AP-I-EP module has configuration parameters for IP address maintenance and supply voltage diagnostics.

NOTE: Each parameter has instance numbers for the CIP Parameter Object and AP ID instance. This facilitates easy look-up for module parameters. Every module has this list.



Slot 2 example. The CPX-AP-I-4DI4DO-M12-5P has configuration parameters for debounce time, and fail safe state for outputs (default off or hold last state).



Some modules, such as the 4 channel analog input may have an extensive list of parameters. The 4AI module has 52 parameters for configuring the 4 analog channels. Some parameters are required, such as the signal range, so it matches the sensor connected.

5	CPX-AP-I-4AI-U-I-RTD-M12	8202	0.5.9	0x00000046	API4AI00070

Parameter Object (0x0F) Instance	AP Id/Instance	Parameter	Startup	Value
16	20013:0	Behaviour after short circuit	yes	Switch on again
17	20030:0	Enable monitoring of parameter errors	yes	☐
18	20031:0	Enable global diagnosis	yes	☑
19	20036:0	Start calibration		☐
20	20012:0	Enable diagnosis of sensor supply short circuit (Input 0)	yes	☑
21	20012:1	Enable diagnosis of sensor supply short circuit (Input 1)	yes	☑
22	20012:2	Enable diagnosis of sensor supply short circuit (Input 2)	yes	☑
23	20012:3	Enable diagnosis of sensor supply short circuit (Input 3)	yes	☑
24	20032:0	Temperature unit (Input 0)	yes	Fahrenheit
25	20032:1	Temperature unit (Input 1)	yes	Celsius / Fahrenheit / Kelvin
26	20032:2	Temperature unit (Input 2)	yes	Celsius
27	20032:3	Temperature unit (Input 3)	yes	Celsius
28	20034:0	Enable diagnosis for sensor out of range (Input 0)	yes	☑

The IO-Link module also requires parameterization. By default, all the channels are deactivated. When using the IO-Link master(s), certain parameters need to be configured. Primarily:

- The port mode. If Autostart is used, then no need for Validation and Backup
- The Variant Selection must be selected. Default is 8 bytes per channel

After all parameter selections are made, use Stored Parameters, section 3.1.4, for storing them in the CPX-AP-I adapter.

For more information on IO-Link usage, see section 6 for using the Festo IO-Link SW Tool.

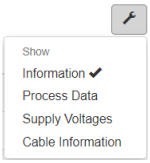
6	CPX-AP-I-4IOL-M12	8201	0.26.5	0x00001800	3S7PN0ZXSQD

Parameter Object (0x0F) Instance	AP Id/Instance	Parameter	Startup	Value
68	20022:0	Setup monitoring load supply (PL) 24 V DC	yes	Load supply monitoring active, diagnosis suppressed in case of switch-off
69	20049:0	Nominal Cycle Time (Port 0)	yes	as fast as possible
70	20049:1	Nominal Cycle Time (Port 1)	yes	as fast as possible
71	20049:2	Nominal Cycle Time (Port 2)	yes	as fast as possible
72	20049:3	Nominal Cycle Time (Port 3)	yes	as fast as possible
73	20050:0	Enable diagnosis of IO-Link device lost (Port 0)	yes	☑
74	20050:1	Enable diagnosis of IO-Link device lost (Port 1)	yes	☑
75	20050:2	Enable diagnosis of IO-Link device lost (Port 2)	yes	☑
76	20050:3	Enable diagnosis of IO-Link device lost (Port 3)	yes	☑
77	20071:0	Port Mode (Port 0)	yes	DEACTIVATED
78	20071:1	Port Mode (Port 1)	yes	IOL_AUTOSTART
79	20071:2	Port Mode (Port 2)	yes	DEACTIVATED
80	20071:3	Port Mode (Port 3)	yes	DEACTIVATED
81	20072:0	Validation & Backup (Port 0)	yes	No Device check

82	20072:1	Validation & Backup (Port 1)	yes	Type compatible Device V1.1, Backup + Restore
83	20072:2	Validation & Backup (Port 2)	yes	No Device check
84	20072:3	Validation & Backup (Port 3)	yes	No Device check
85	20073:0	Nominal Vendor ID (Port 0)	yes	0
86	20073:1	Nominal Vendor ID (Port 1)	yes	0
87	20073:2	Nominal Vendor ID (Port 2)	yes	0
88	20073:3	Nominal Vendor ID (Port 3)	yes	0
89	20080:0	DeviceID (Port 0)	yes	0
90	20080:1	DeviceID (Port 1)	yes	0
91	20080:2	DeviceID (Port 2)	yes	0
92	20080:3	DeviceID (Port 3)	yes	0
93	20074:0	Port status information (Port 0)		DEACTIVATED
94	20074:1	Port status information (Port 1)		OPERATE
95	20074:2	Port status information (Port 2)		DEACTIVATED
96	20074:3	Port status information (Port 3)		DEACTIVATED
97	20075:0	Revision ID (Port 0)		0
98	20075:1	Revision ID (Port 1)		17
99	20075:2	Revision ID (Port 2)		0
100	20075:3	Revision ID (Port 3)		0
101	20076:0	Port transmission rate (Port 0)		NOT_DETECTED
102	20076:1	Port transmission rate (Port 1)		COM2
103	20076:2	Port transmission rate (Port 2)		NOT_DETECTED
104	20076:3	Port transmission rate (Port 3)		NOT_DETECTED
105	20077:0	Actual cycle time in 100 us (Port 0)		0
106	20077:1	Actual cycle time in 100 us (Port 1)		72
107	20077:2	Actual cycle time in 100 us (Port 2)		0
108	20077:3	Actual cycle time in 100 us (Port 3)		0
109	20078:0	Actual VendorID (Port 0)		0
110	20078:1	Actual VendorID (Port 1)		888
111	20078:2	Actual VendorID (Port 2)		0
112	20078:3	Actual VendorID (Port 3)		0
113	20079:0	Actual DeviceID (Port 0)		0
114	20079:1	Actual DeviceID (Port 1)		330248
115	20079:2	Actual DeviceID (Port 2)		0
116	20079:3	Actual DeviceID (Port 3)		0
117	20108:0	InputDataLength (Port 0)		0
118	20108:1	InputDataLength (Port 1)		1
119	20108:2	InputDataLength (Port 2)		0
120	20108:3	InputDataLength (Port 3)		0
121	20109:0	OutputDataLength (Port 0)		0
122	20109:1	OutputDataLength (Port 1)		8
123	20109:2	OutputDataLength (Port 2)		0
124	20109:3	OutputDataLength (Port 3)		0
-	20090:0	Variant selection	yes	CPX-AP-I-4IOL-M12 Variant 8

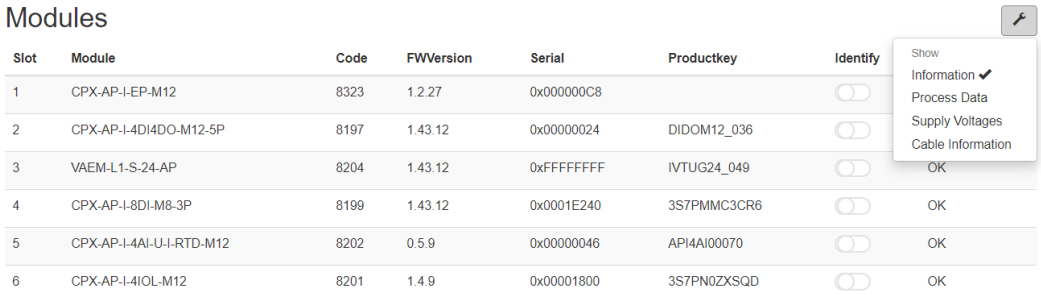
3.1.3 AP Terminal – Tool View

As of FW version 1.2.7, the AP Terminal page has a Tool View which allows the user to change the page with a different focus. The options are as follows:



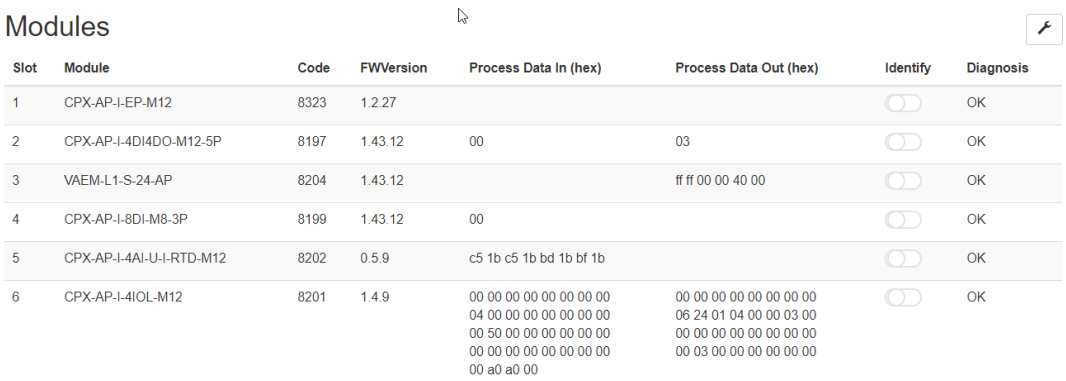
Select the “wrench” icon to change the focus to display process data, supply voltage, or cable info.

The Information page is the default page. In addition to the module name, code, FW version, serial number, product key, and diagnostic status, the is an identify slide. Select “Identify” to flash the MD led of the module to locate it in a system.



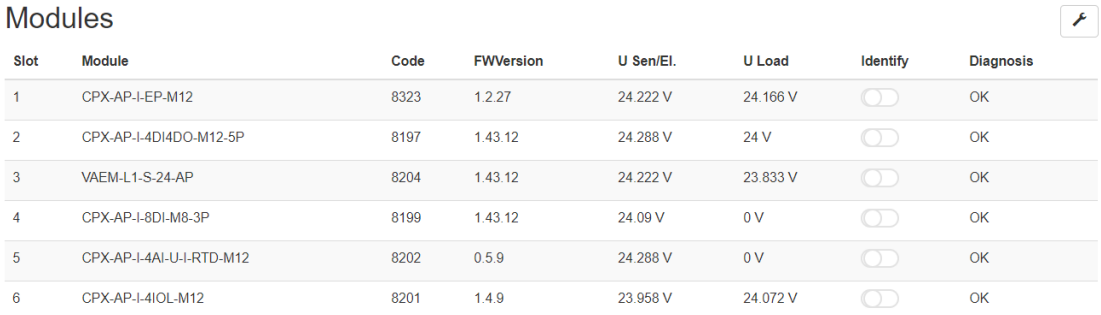
Slot	Module	Code	FWVersion	Serial	Productkey	Identify	
1	CPX-AP-I-EP-M12	8323	1.2.27	0x000000C8			
2	CPX-AP-I-4DI4DO-M12-5P	8197	1.43.12	0x00000024	DIDOM12_036		
3	VAEM-L1-S-24-AP	8204	1.43.12	0xFFFFFFFF	IVTUG24_049		OK
4	CPX-AP-I-8DI-M8-3P	8199	1.43.12	0x0001E240	3S7PMMC3CR6		OK
5	CPX-AP-I-4AI-U-I-RTD-M12	8202	0.5.9	0x00000046	API4AI00070		OK
6	CPX-AP-I-4IOL-M12	8201	1.4.9	0x00001800	3S7PN0ZXSQD		OK

The Process Data focus shows the actual I/O status, dynamically, with an update rate of about 1 second.



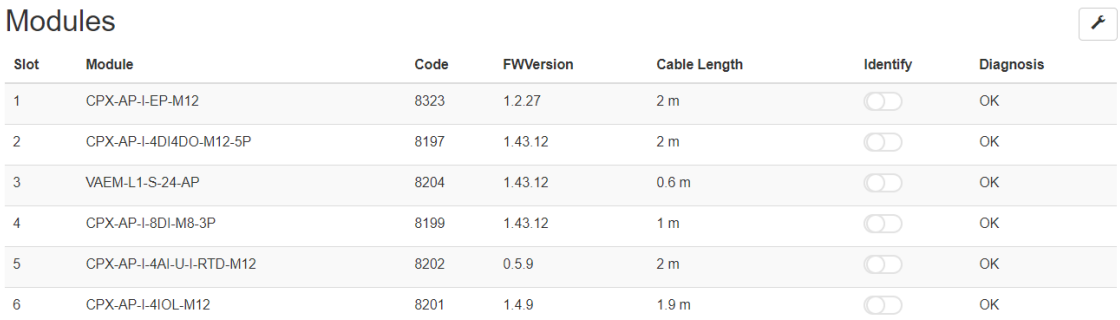
Slot	Module	Code	FWVersion	Process Data In (hex)	Process Data Out (hex)	Identify	Diagnosis
1	CPX-AP-I-EP-M12	8323	1.2.27				OK
2	CPX-AP-I-4DI4DO-M12-5P	8197	1.43.12	00	03		OK
3	VAEM-L1-S-24-AP	8204	1.43.12		ff ff 00 00 40 00		OK
4	CPX-AP-I-8DI-M8-3P	8199	1.43.12	00			OK
5	CPX-AP-I-4AI-U-I-RTD-M12	8202	0.5.9	c5 1b c5 1b bd 1b bf 1b			OK
6	CPX-AP-I-4IOL-M12	8201	1.4.9	00 00 00 00 00 00 00 00 04 00 00 00 00 00 00 00 00 50 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 a0 a0 00	00 00 00 00 00 00 00 00 06 24 01 04 00 00 03 00 00 00 00 00 00 00 00 00 00 03 00 00 00 00 00 00		OK

The Supply Voltage focus shows the dynamic value of the various voltage supplies of each module.



Slot	Module	Code	FWVersion	U Sen/El.	U Load	Identify	Diagnosis
1	CPX-AP-I-EP-M12	8323	1.2.27	24.222 V	24.166 V		OK
2	CPX-AP-I-4DI4DO-M12-5P	8197	1.43.12	24.288 V	24 V		OK
3	VAEM-L1-S-24-AP	8204	1.43.12	24.222 V	23.833 V		OK
4	CPX-AP-I-8DI-M8-3P	8199	1.43.12	24.09 V	0 V		OK
5	CPX-AP-I-4AI-U-I-RTD-M12	8202	0.5.9	24.288 V	0 V		OK
6	CPX-AP-I-4IOL-M12	8201	1.4.9	23.958 V	24.072 V		OK

The Cable Information focus shows the cable lengths detected by the system.



Slot	Module	Code	FWVersion	Cable Length	Identify	Diagnosis
1	CPX-AP-I-EP-M12	8323	1.2.27	2 m		OK
2	CPX-AP-I-4DI4DO-M12-5P	8197	1.43.12	2 m		OK
3	VAEM-L1-S-24-AP	8204	1.43.12	0.6 m		OK
4	CPX-AP-I-8DI-M8-3P	8199	1.43.12	1 m		OK
5	CPX-AP-I-4AI-U-I-RTD-M12	8202	0.5.9	2 m		OK
6	CPX-AP-I-4IOL-M12	8201	1.4.9	1.9 m		OK

The information in the various focus views provide useful troubleshooting information during commissioning and routine maintenance.

3.1.4 AP Configuration – Stored Parameters

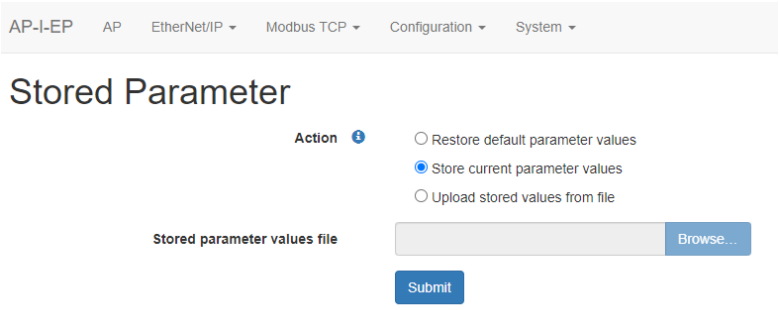
The CPX-AP-I system for EtherNet/IP and Modbus can store parameters internally in FW 1.2.7 or later. This is especially useful for the following users:

- Modbus TCP users where no standard parameter setting process from a controller exists.
- EtherNet/IP users where there is no ability to store parameters in the controller and push into the CPX-AP-I system via the Forward Open message. This may include some robot controllers, PC control, or other controllers.

First set all desired parameters. You can then store them by going to the Configuration-› Stored Parameter option.

Your first time before storing, your options will be as follows.

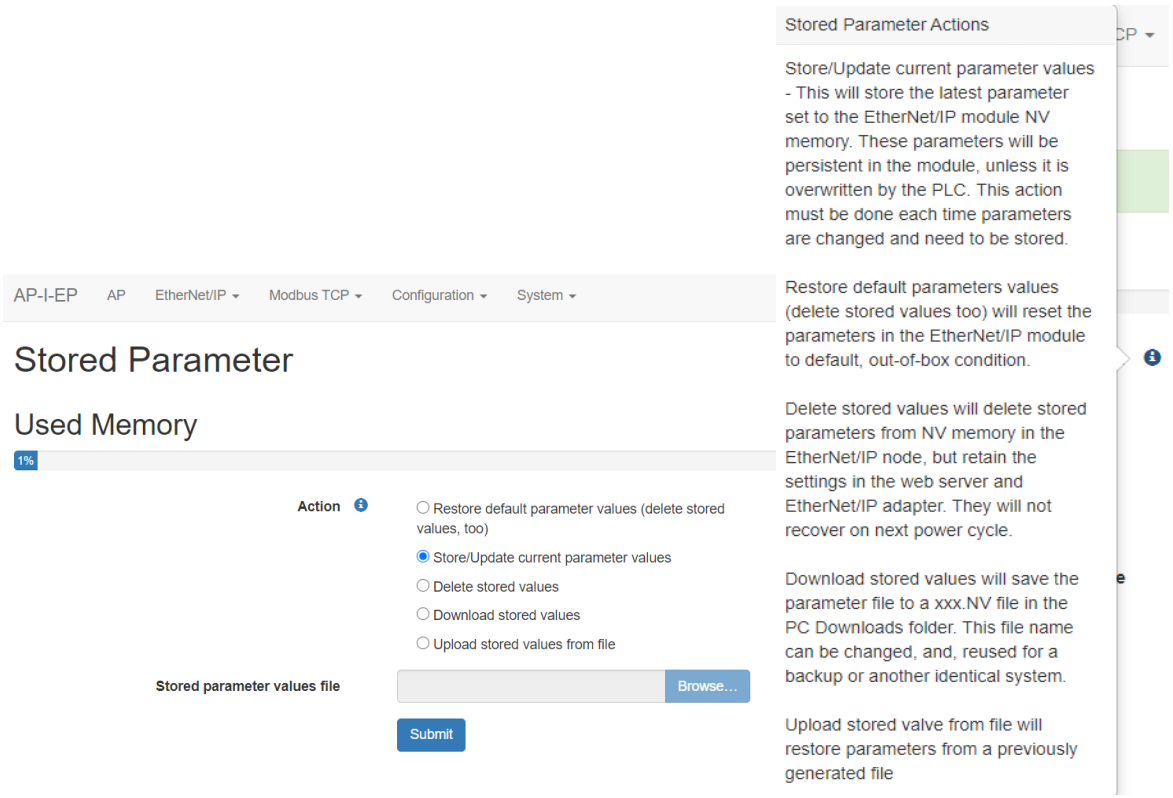
- Default is to store current values.
- You can use this page to restore all values to their default.
- If you have a file from the same or a previous system with an EXACT configuration, you can also upload the values from that file.



After submitting the values, they are stored in the CPX-AP-I adapter. There are now additional options.

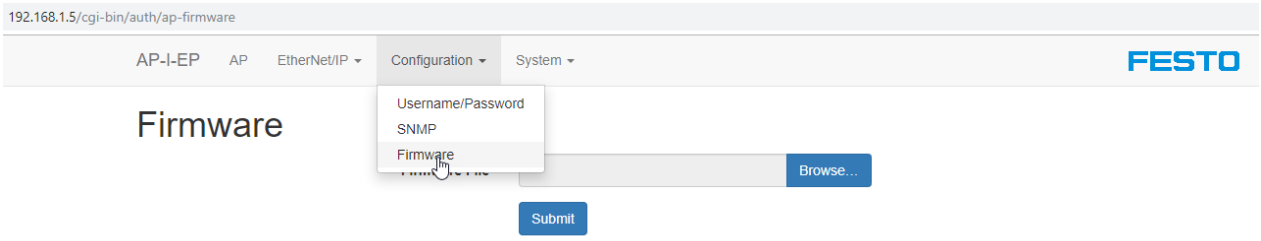
- Delete stored values
- Download Stored Values

Hint: The Info Button has detailed information on the actions within Stored Parameters



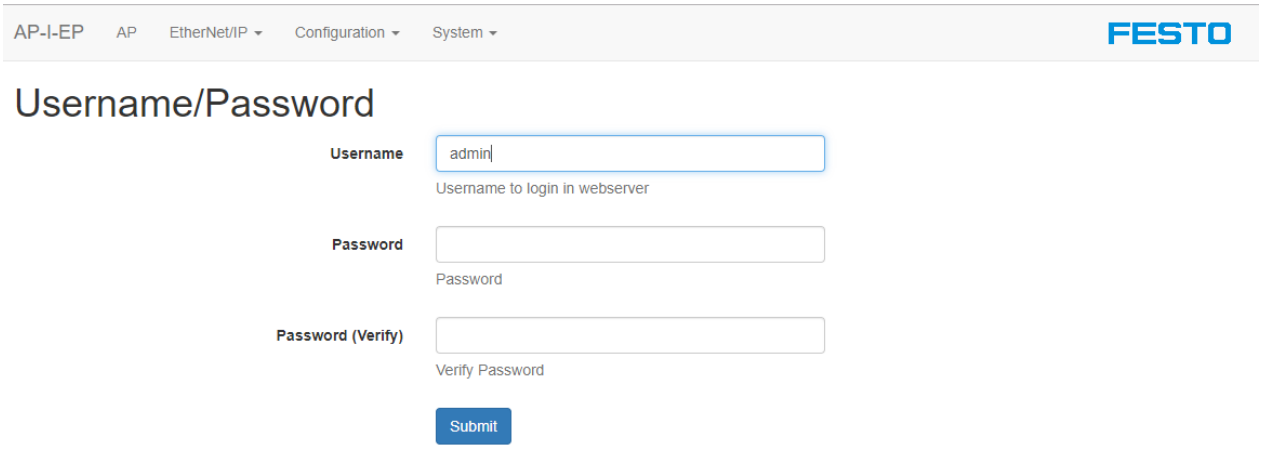
3.1.5 AP Configuration - Firmware

The CPX-AP-I-EP EtherNet/IP module can load new FW simply by browsing a FFWU file on a PC.



3.1.6 AP Configuration – Username/Password

The username / password can be changed. Follow user manual to reset to default values if forgotten.

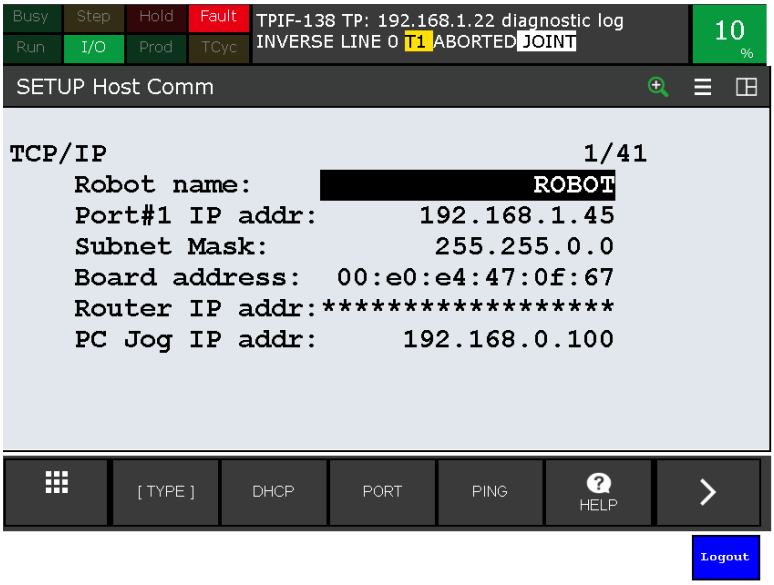


4 Getting started with Fanuc and EtherNet/IP

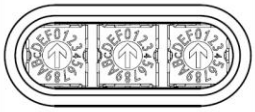
The commissioning of the Fanuc robot controller EtherNet/IP settings are quite easy. Commissioning can be done directly from the robot pendant station, or from a PC using a remote viewer. In this case, "Navigate iPendant (JCGTP)" was used.

4.1.1 IP Addresses

- Be sure the robot controller, PC (if used), and CPX-AP-I system are all on the same IP address subnet.
- In this example, the IP address for Fanuc is 192.168.1.45. Go to Menu -› Setup -› Host Comm -› TCP/IP. Enter IP address and Subnet.



- The CPX-AP-I has multiple methods for setting IP address.
  - Any DHCP server
  - Rotary switches for last octet of public IP address 192,.168.1.xxx
  - Festo Field Device Tool can change any IP address already entered into the CPX-AP-I
  - Festo Automation Suite has a DHCP server that can be used with this device.
- In this example, the rotary switches were used to set the IP address to 192.168.1.5

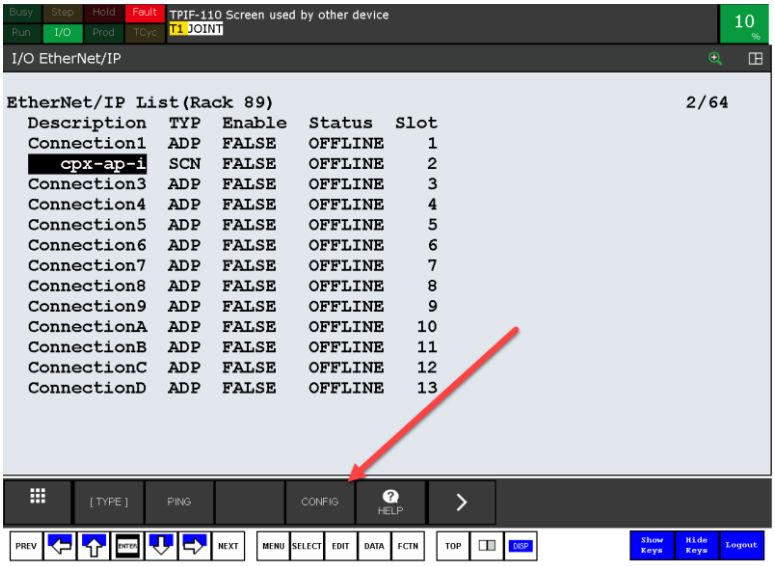
Rotary switch	Function
IPx100x10x1 	The 3 rotary switches are used to set the 4th octet of the IP address (192.168.1.XXX). Possible settings: – 0 = dynamic addressing via DHCP (factory setting) – 1 … 255 = permissible address range Valid values: – EtherNet/IP: 300 … 555 (IP address = value – 300) – Modbus TCP: 600 … 855 (IP address = value – 600) – Reset to factory setting: 900 If values are invalid, the IP parameters are reset to the factory settings. In the range 0 … 255 both network protocols are active. The network protocol that first sets outputs has priority over the outputs.

- From Festo manual p/n 8099750, set switches to 305, 300 being the least significant value for EtherNet/IP.

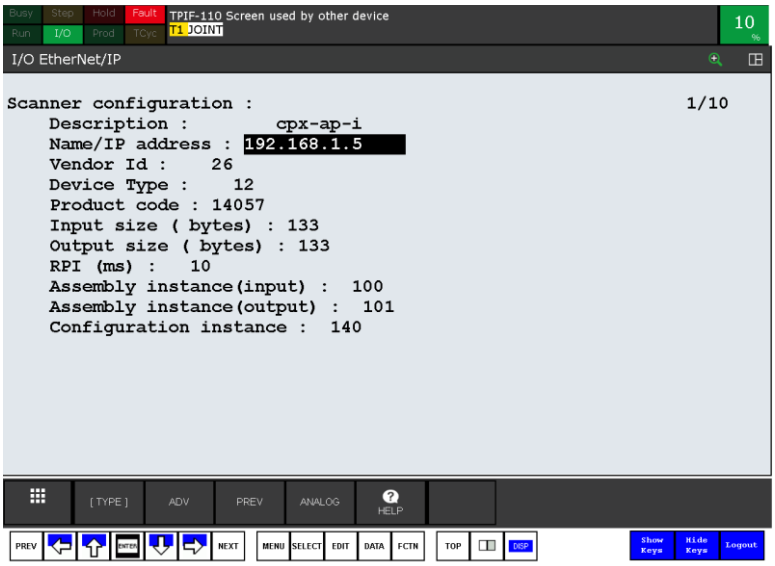
4.1.2 EtherNet/IP Setup

Note: In order for the EtherNet/IP scanner/adapter functionality to be enabled the user has to add the EtherNet/IP option which might be sold separately by Fanuc.

1. Once the IP addresses are set, navigate to the EtherNet/IP setup, Menu -› I/O -› EtherNet/IP
2. From the EtherNet/IP List select the desired connection and if desired assign a custom name.
3. Chane the Type to SCN (Scanner).



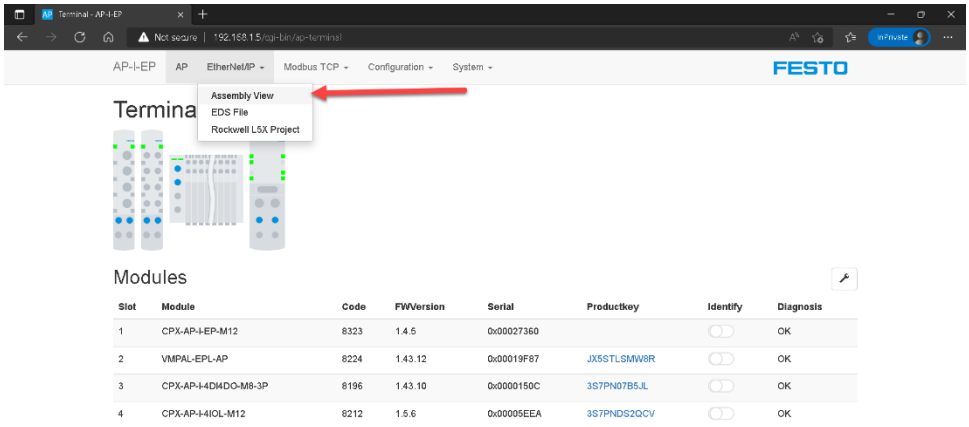
4. Tap the CONFIG option to enter the Scanner Configuration screen.
5. Specify the IP address of the CPX-AP-I-EP module which was previously set in section 4.1.1
6. Set the following information which can be found in the EDS of CPX-AP-I-EP:
    a. Vendor Id: 26
    b. Device Type: 12
    c. Product code: 14057
    d. Input size (bytes): See next section
    e. Output size (bytes): See next section
    f. RPI (ms): 10 (depends on your application)
    g. Assembly instance (input): 100
    h. Assembly instance (output): 101
    i. Configuration instance: 140



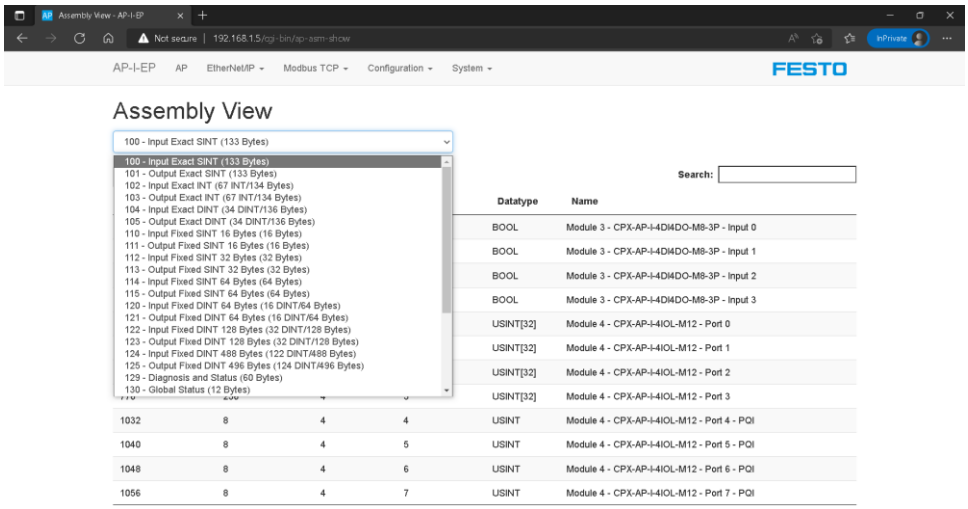
5 EtherNet/IP Assembly View – Addresses for CPX-AP-I System

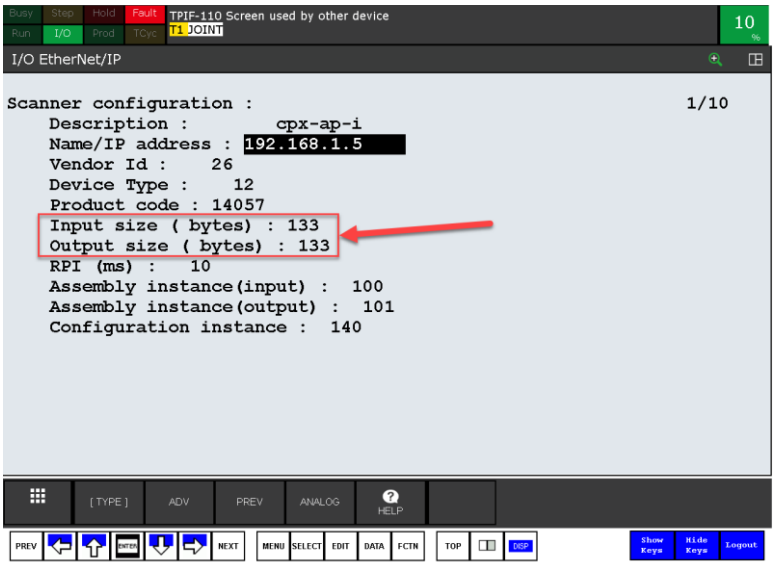
At this point, it is necessary to understand how the I/O is assigned in the CPX-AP-I system. An EtherNet/IP Assembly View is included in the CPX-AP-I webserver to facilitate the mapping of a CPX-AP-I system with an EtherNet/IP scanner. The mapping can also be calculated based on the CPX-AP-I configuration.

EtherNet/IP View in Webserver:

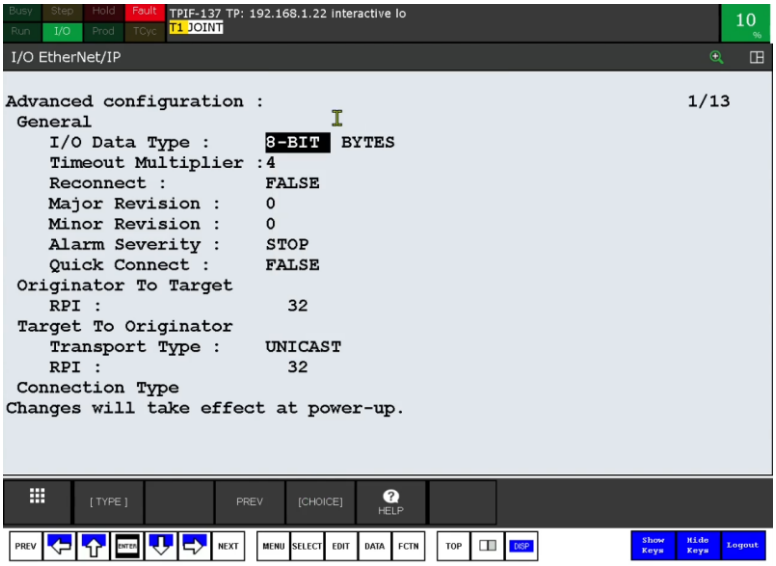


From the Assembly View drop-down menu, instances 100 for Inputs, 101 for Outputs and 140 for Configuration are shown along with the size for each in parenthesis. These sizes will vary depending on which and how modules are present in the AP topology. The two values are used in the Fanuc Scanner Configuration as shown below:

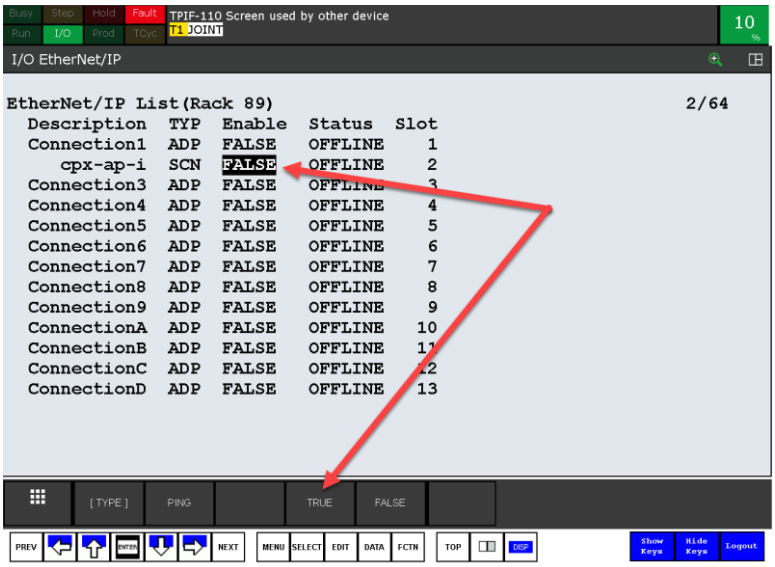




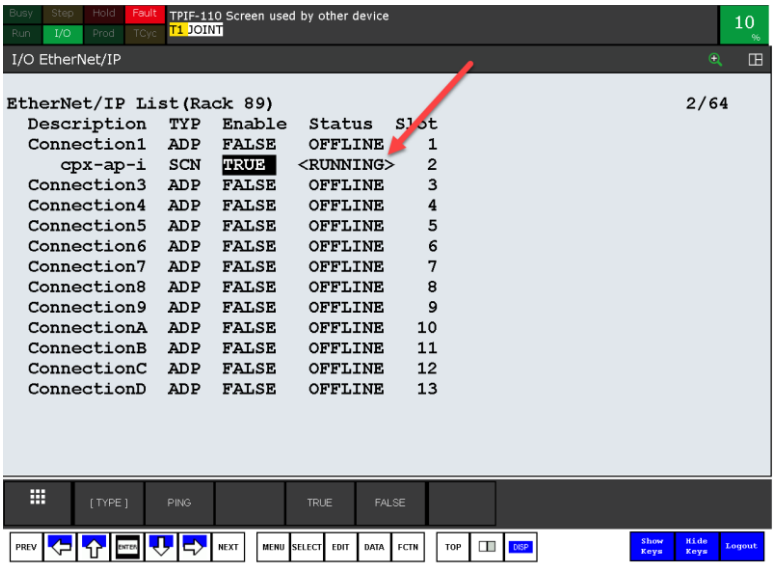
Note: Fanuc offers 2 different data formats for the I/O size, words (16-bit) and bytes (8-bit). The user can change the data type by going to the "Advanced configuration" screen within the "Scanner configuration". This Application Note utilizes byte data format.



The last step is to enable the connection by setting the "Enable" option to TRUE, a power cycle to the Fanuc controller is needed to changes to become effective:



If the configuration is done correctly the connection Status should show RUNNING:

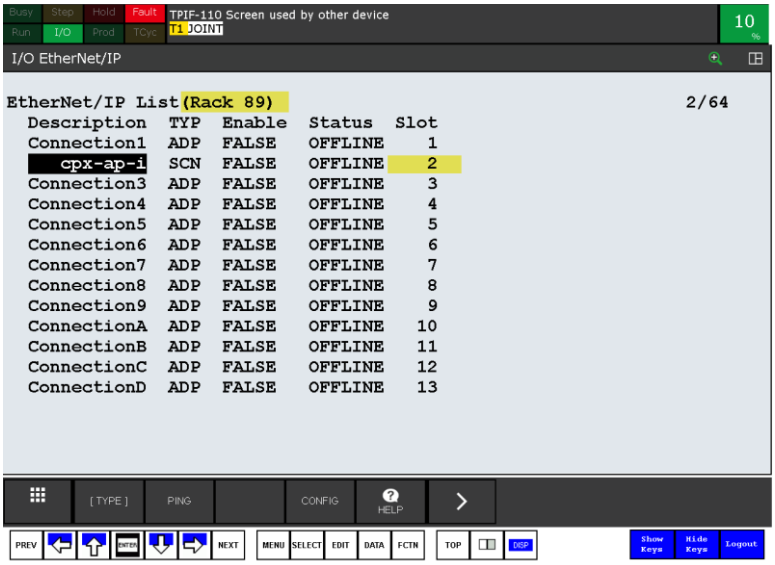


6 Integrating the CPX-AP-I to the Fanuc Controller via EtherNet/IP

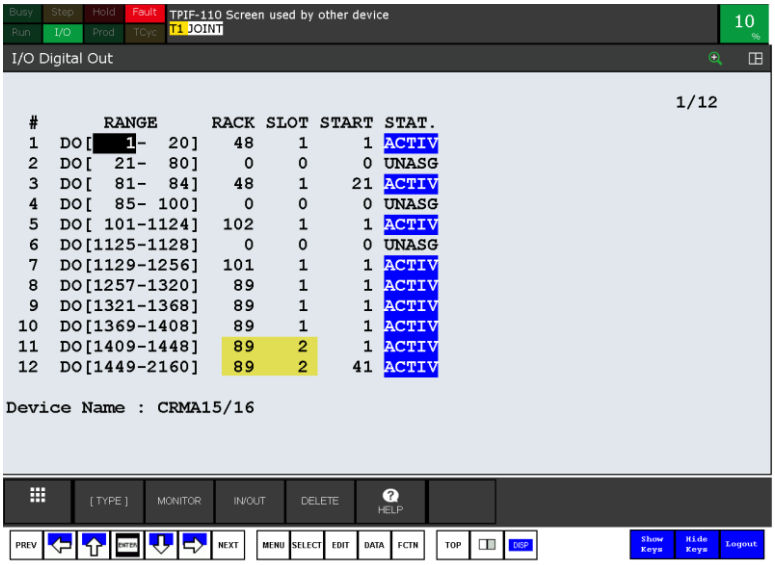
Once the EtherNet/IP setup has been finalized the I/O can be tested by navigating to Menu -› I/O -› Digital -› Config.

6.1.1 Identifying Rack and Slot numbers

The Inputs and Outputs can be identified by Rack and Slot numbers which are shown under the EtherNet/IP List, in the below example I/O will be under Rack 89 / Slot 2:

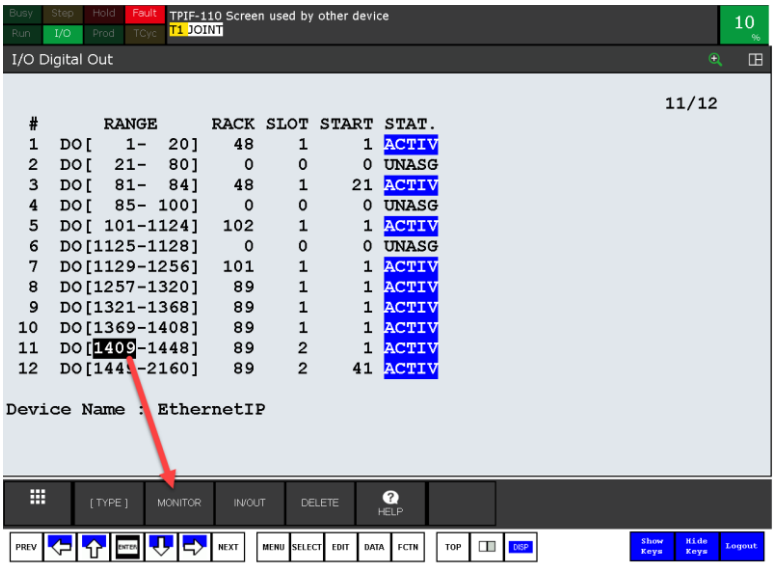


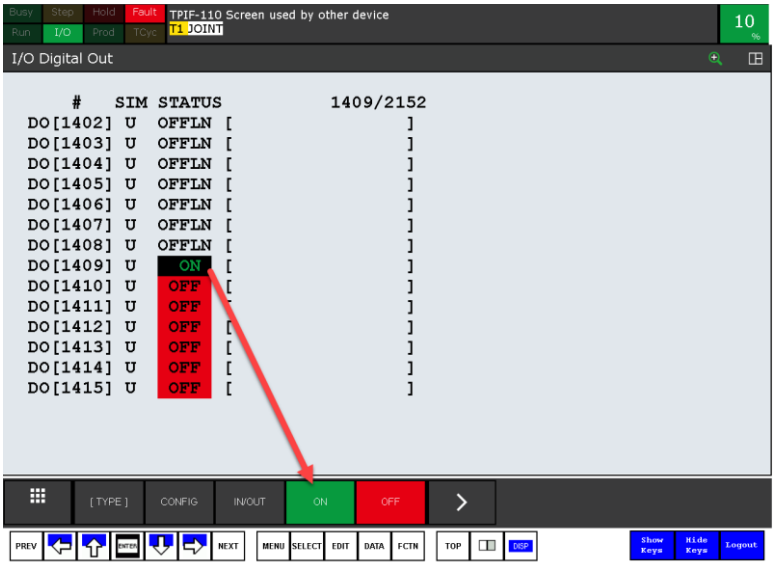
The STATUS on both Inputs and Outputs should show ACTIVE:



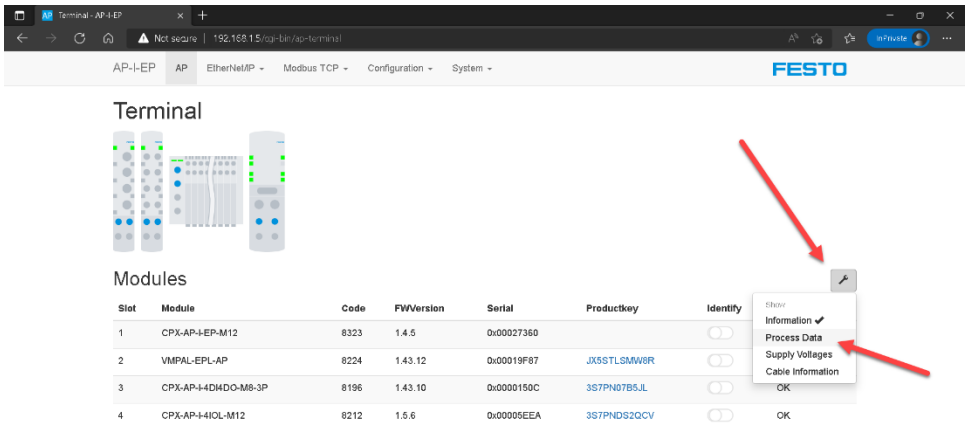
6.1.2 Monitoring and Modifying I/O

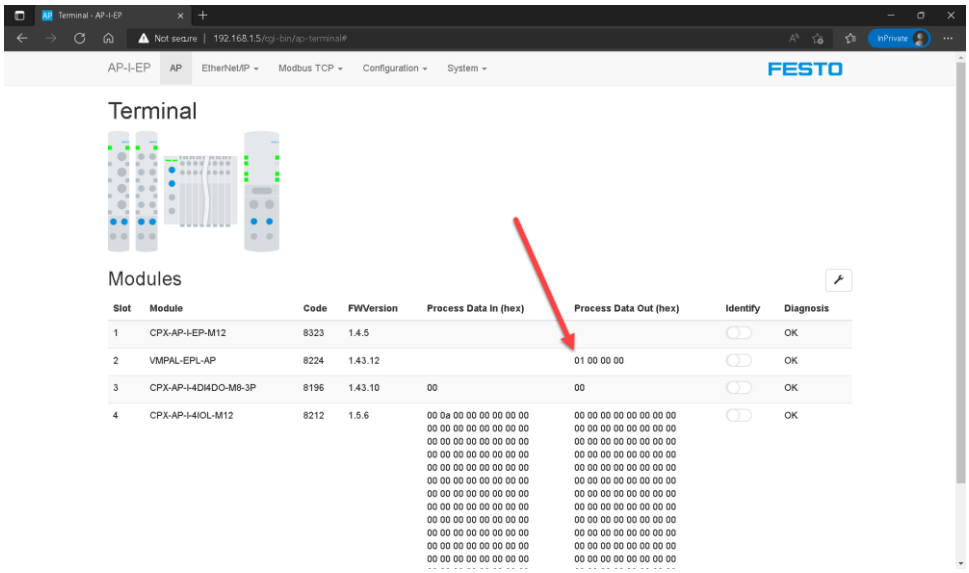
By navigating to the MONITOR section, I/O can be tested:





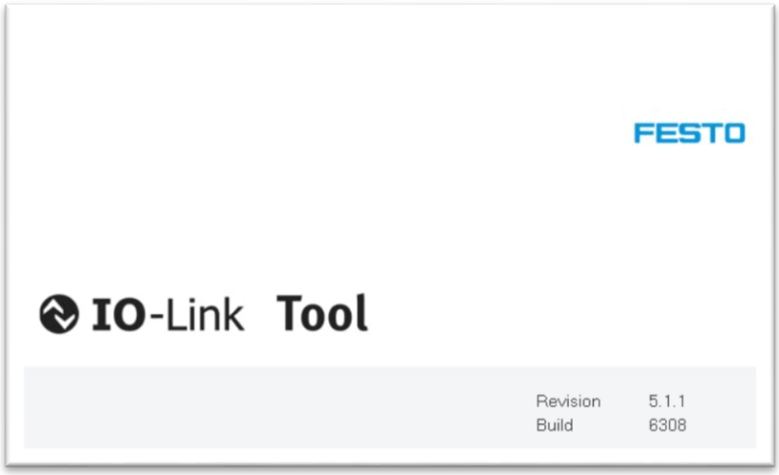
As described on section 3.1.3 the process data can be monitored on the CPX-AP-I visualization:




Terminal - AP-I-EP
Not secure | 192.168.1.5/cgi-bin/ap-terminal#
InPrivate
AP-I-EP
AP
EtherNet/IP
Modbus TCP
Configuration
System
FESTO
Terminal
Modules
Slot Module Code FWVersion Process Data In (hex) Process Data Out (hex) Identify Diagnosis
1 CPX-AP-I-EP-M12 8323 1.4.5 OK
2 VMPAL-EPL-AP 8224 1.43.12 01 00 00 00 OK
3 CPX-AP-I-4DI4DO-M8-3P 8196 1.43.10 00 00 OK
4 CPX-AP-I-4IOL-M12 8212 1.5.6 OK

7 Festo IO-Link Tool

The Festo IO-Link Tool is a software tool to configure a CPX-AP-I IO-Link master. It uses the IODD file of any IO-Link device to allow it to be parameterized from a PC, and for storage of the settings to be placed in the master. This tool is available from the Festo website. Be sure to review the user manual that comes with the tool.

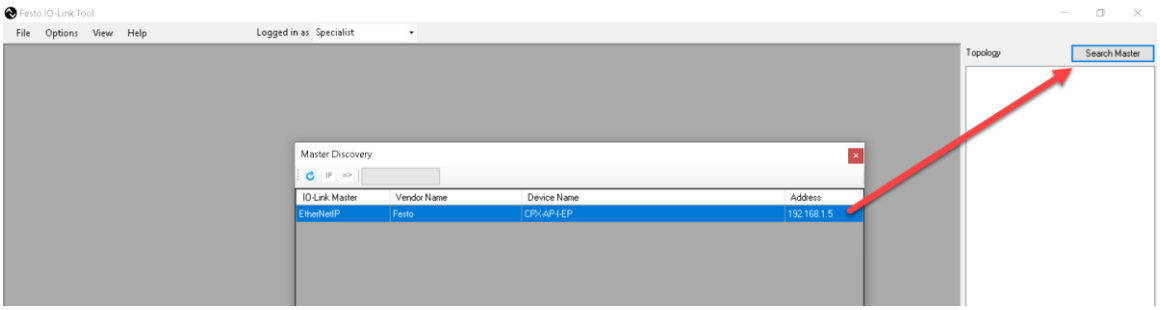


7.1.1 Getting Started

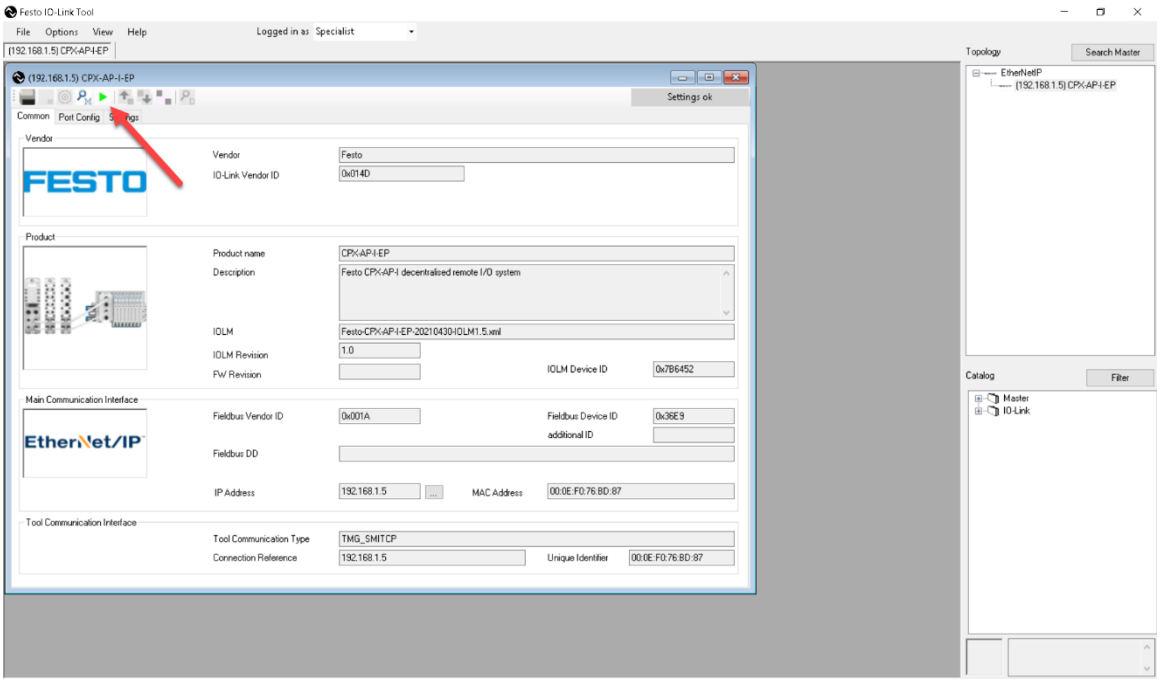
- Follow the installation instructions that comes with the IO-Link Tool software.
- Be sure the appropriate CPX-AP-I IOLM master description file for EtherNet/IP is installed. Since EtherNet/IP is shared with Modbus TCP, use EtherNet/IP instructions.
- Be sure the IODD files necessary are imported or are already present in the IOL Tool, shown in the catalog window.

7.1.2 Sequence of Commissioning

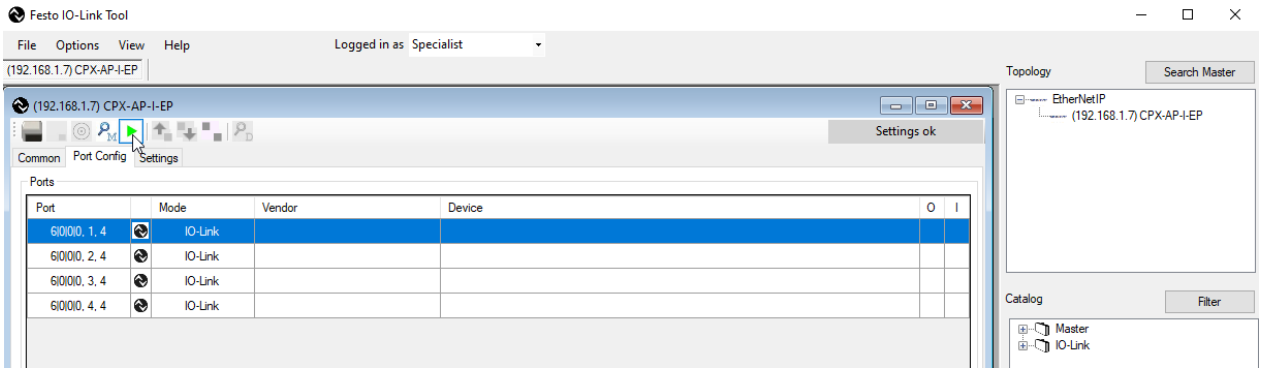
1. Go on-line. In a new project, select “Search Master”. The module discovery window will appear. A green bar will show progress identifying all masters.



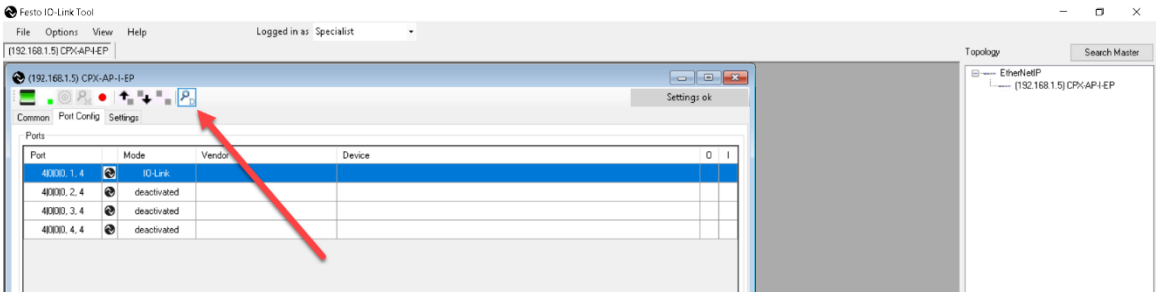
2. When complete, double click on EtherNet/IP master. The master page will appear. The master will be shown in the Topology Window. Then click the “Go Online” button:

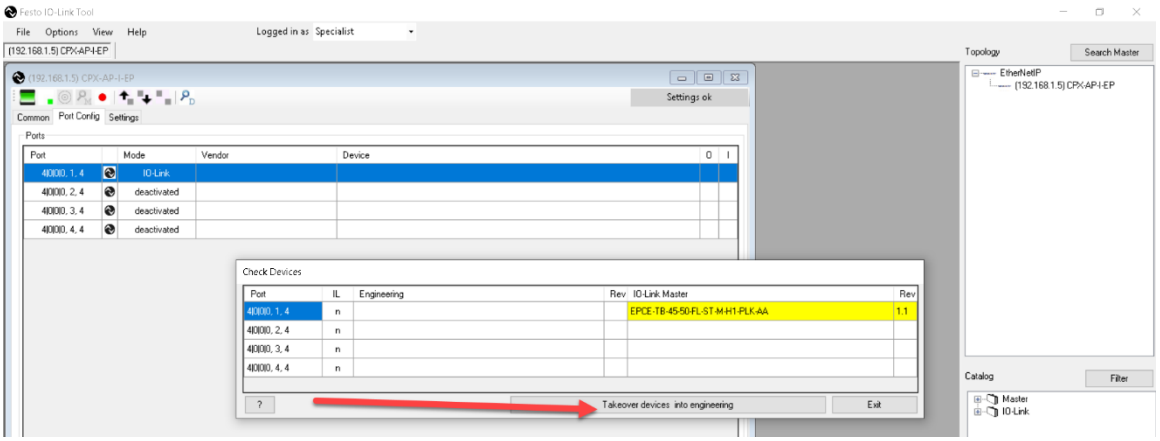


3. Go to the Port Config tab. The Port addresses of the IOL master will be represented by the module number, and port number of the module.

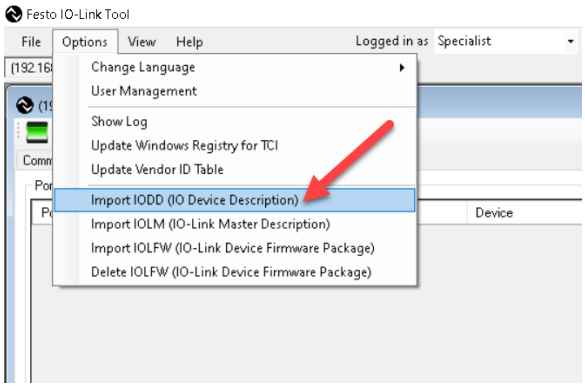


4. Once on-line, a Green Bar will indicate on-line is active. Click on “Check Devices”, and a window will appear showing the connected devices at each port. Select “Takeover devices into engineering”.

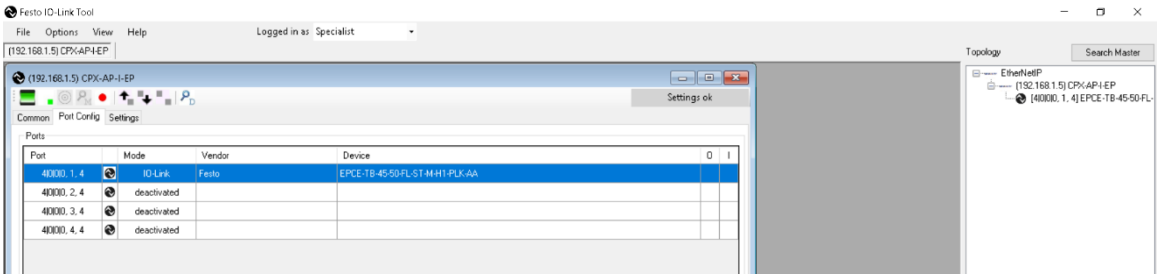




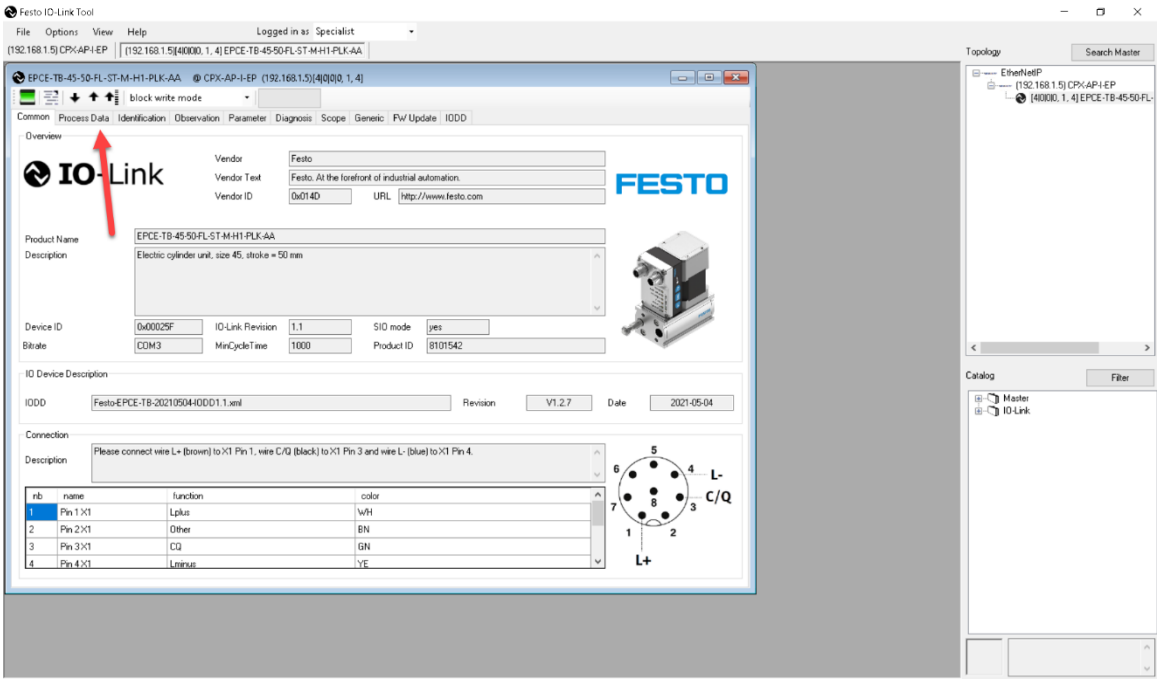
Note: If device is shown as unknown it's very likely that the proper IODD file is not installed, this can be done by importing the IODD file from the "Options" menu:



Once taken-over, the Port Config page will contain the devices connected.



5. Double click on a device to open its IODD parameters and other information available from the IODD file. Follow the manufacturer's instructions from each device on setting parameters or other actions. In this example, the EPCE Electric Cylinder is opened.



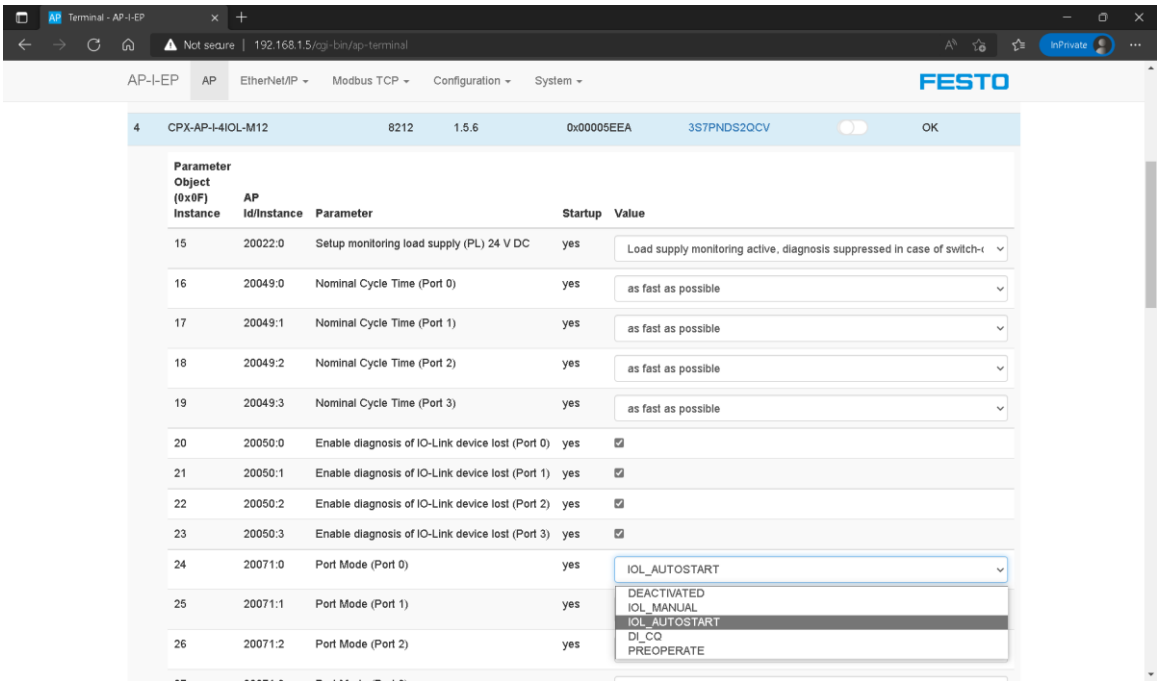
6. Go to the webserver of the CPX-AP-I system. Click on the IOL master module. Set basic IOL module parameters for the master.

   Many of the parameters are self-explanatory, but some require explanation:

Port Mode IOL_MANUAL	The target device will operate via IO-Link based on the user defined configuration including validation from the choices below. Use this mode with Backup & Restore.
Port Mode IOL_AUTOSTART	The target device will operate via IO-Link without the user defined configuration and validation. This will not work with Backup, Restore, etc.
Port Mode DI_CQ	The target device will operate as a digital input in SIO mode
Port Mode PREOPERATE	The master can assign parameters to the target device via ISDUs, but it must be operating to exchange process data.

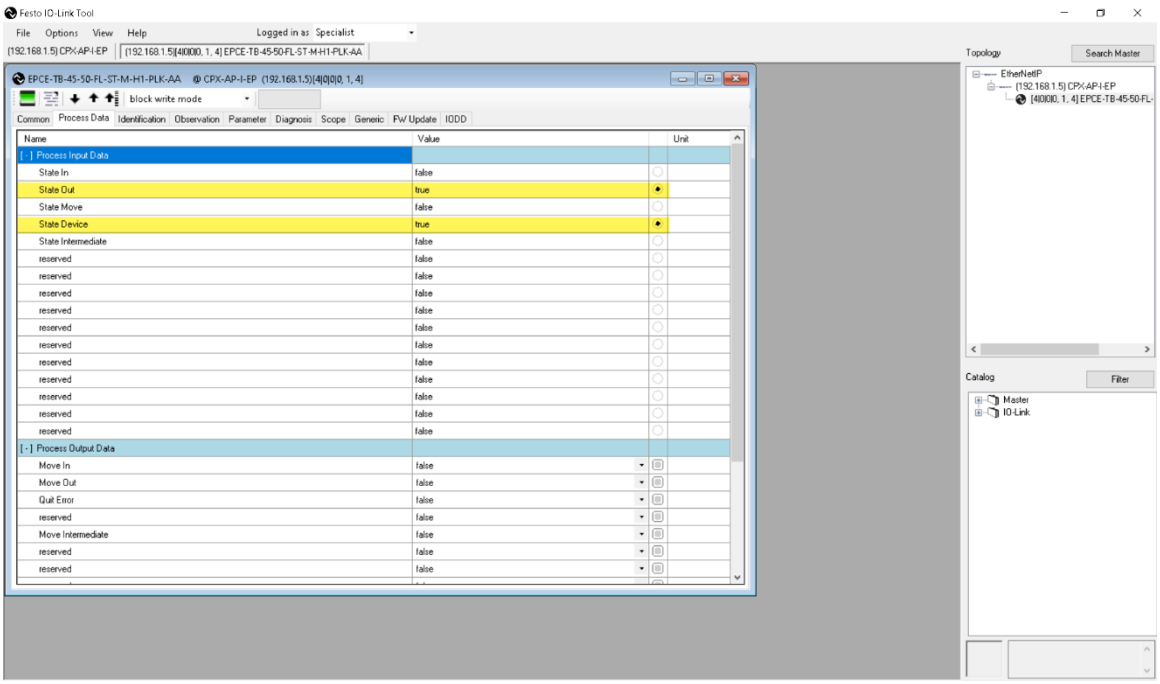
Type Compatible Device V1.1 – Backup & Restore	The target device supports V1.1 and data storage is enabled for both upload and download. When replacing a device, the device is automatically parameterized with the parameters stored in the master. But if the device was e.g. pre-parameterized with a USB IO-Link master, then the data is loaded from the device into the master.
Type Compatible Device V1.1 – Restore	The target device supports V1.1 and data storage is enabled for download. This is usually configured when an application has been accepted and the settings should no longer be changed.

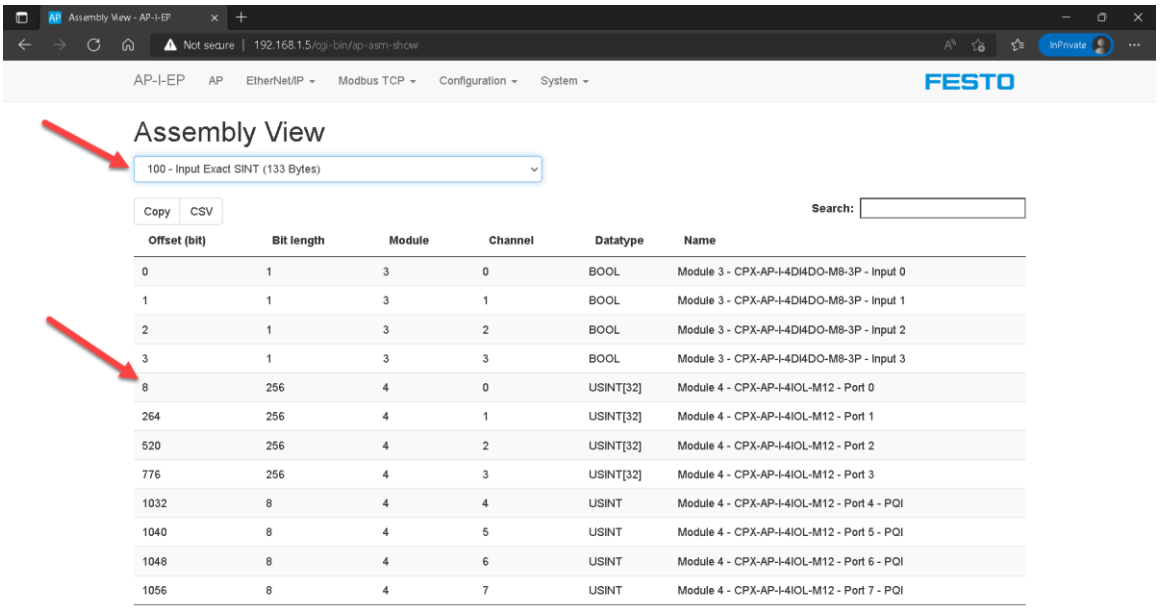
In this example, IOL_AUTOSTART will be used for Port 0:

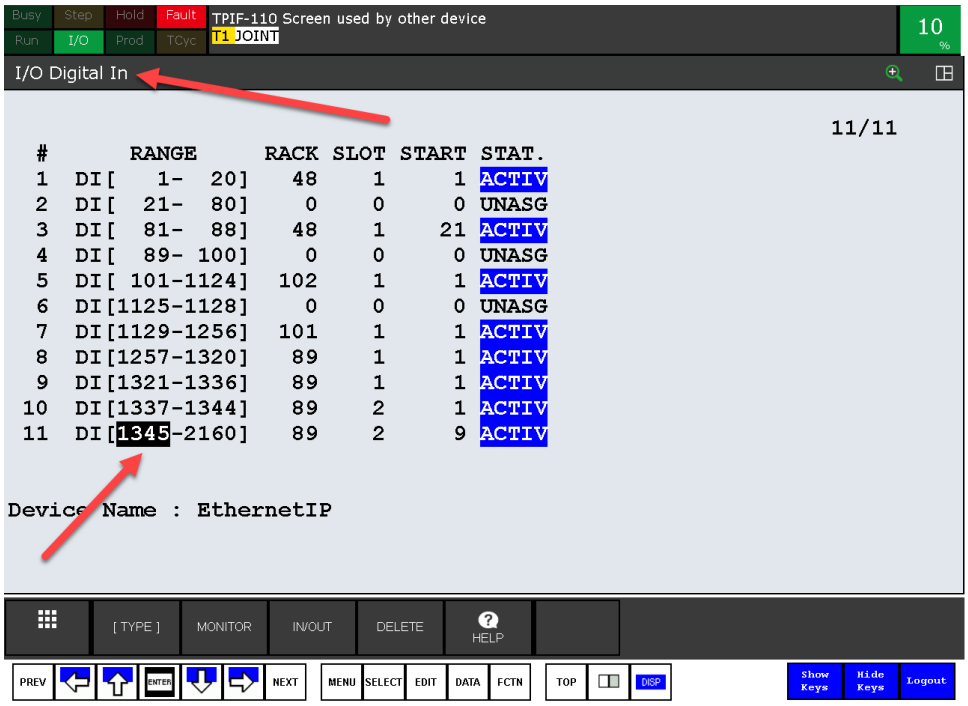


7.1.3 Monitoring and Modifying IO-Link Process Data

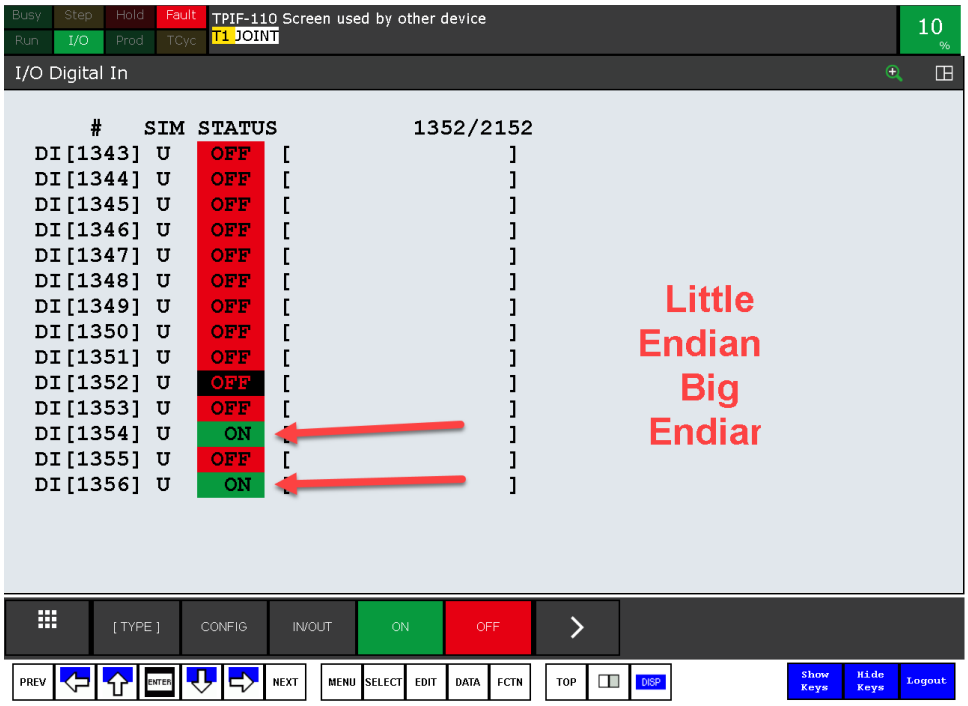
1. Once the communication is established data can be monitored:



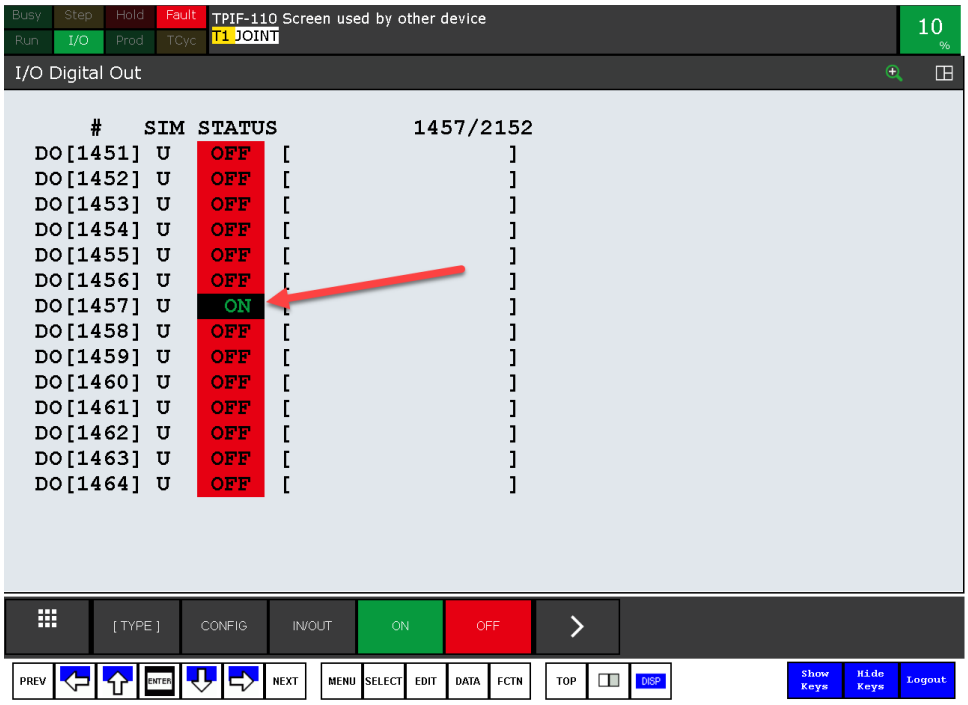


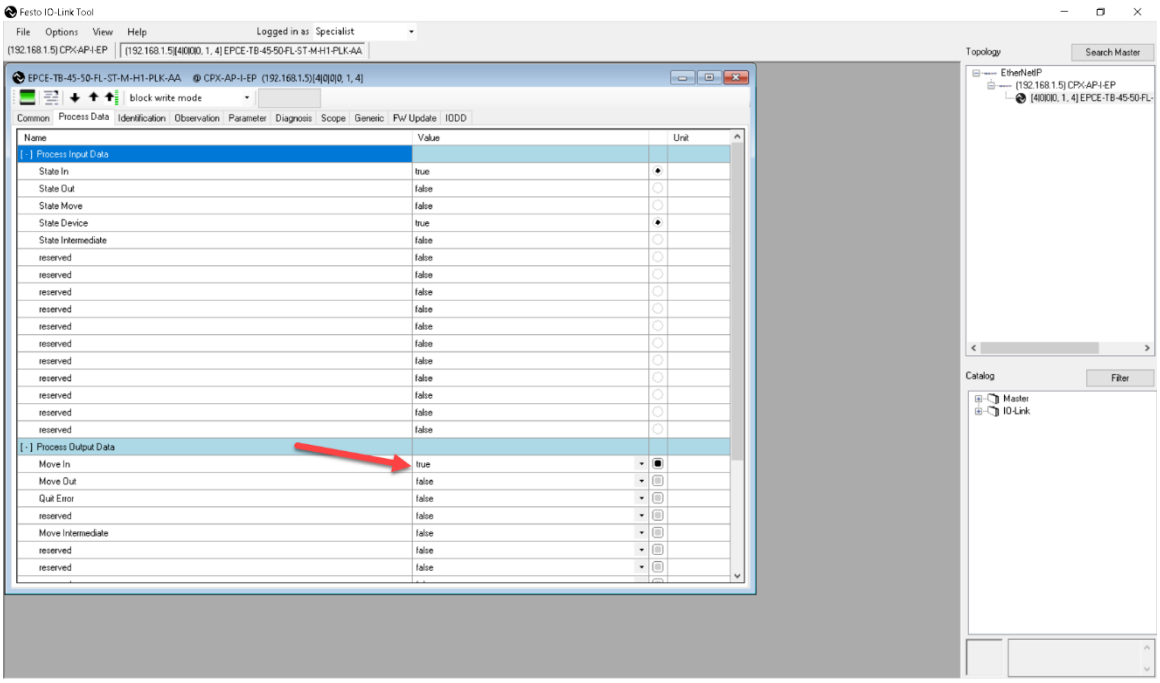


Note: There is the possibility of byte swapping due to little endian vs. big endian, please check your device accordingly. In this case the bytes are swapped. As observed in the screenshots above, the input data for IO-Link port 0 starts at bit 8 which on the Fanuc side would be address 1345. However, due to the byte swapping our data is visible starting on address 1353 as shown below.



As mentioned on the previous note, the same applies for output data:




Festo IO-Link Tool
File Options View Help
Logged in as Specialist
(192.168.1.5) CPX-AP-I-EP
(192.168.1.5)[40|0|0], 1, 4] EPCE-TB-45-50-FL-ST-M-H1-PLK-AA
EPCE-TB-45-50-FL-ST-M-H1-PLK-AA @ CPX-AP-I-EP (192.168.1.5)[4|0|0|0, 1, 4]
block write mode
Common Process Data Identification Observation Parameter Diagnosis Scope Generic FW Update IODD
Name
Value
Unit
[-] Process Input Data
State In
State Out
State Move
State Device
State Intermediate
reserved
[-] Process Output Data
Move In
Move Out
Quit Error
reserved
Move Intermediate
reserved
reserved
Topology
Search Master
EtherNetIP
(192.168.1.5) CPX-AP-I-EP
[40|0|0], 1, 4] EPCE-TB-45-50-FL-
Catalog
Filter
Master
IO-Link