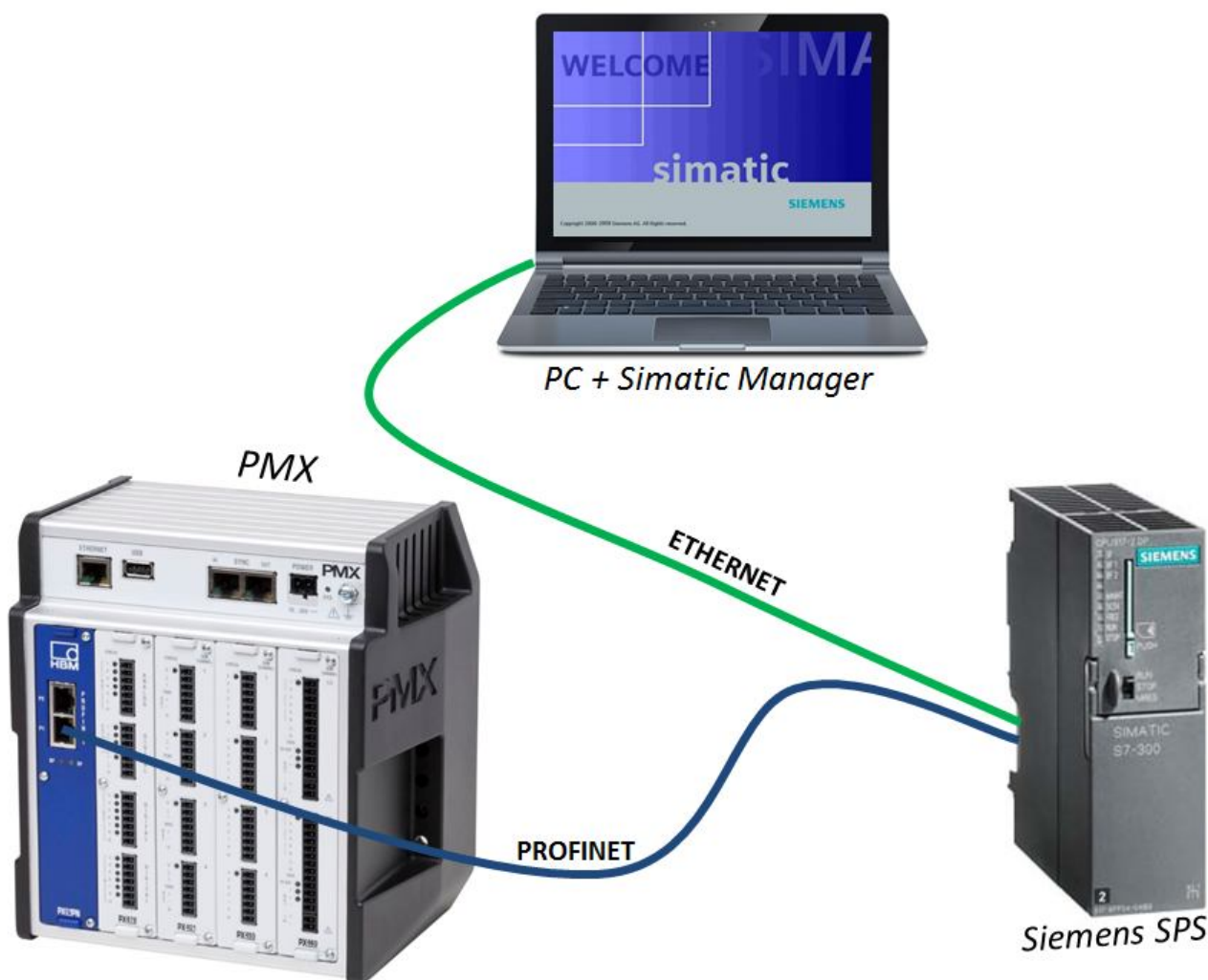


TECH NOTE :: Configuration demo for PMX and read/write consistent data via ProfiNet to Siemens PLC S7-315-2 PN/DP

Version: 2015-04-02
Author: Michael Guckes
Status: HBM: Public

Short description

This short example considers a simple configuration demo for the PMX amplifier connected to a Siemens PLC type S7-315-2 PN/DP.



Introduction

The PMX is equipped with ProfiNet interface PX01PN (Slot 0) and measuring boards PX878 slot 1, PX455 slot 2 (strain gauge sensors e.g. force) and PX401 slot 3 (analog signals +/-10V or +/-20mA).

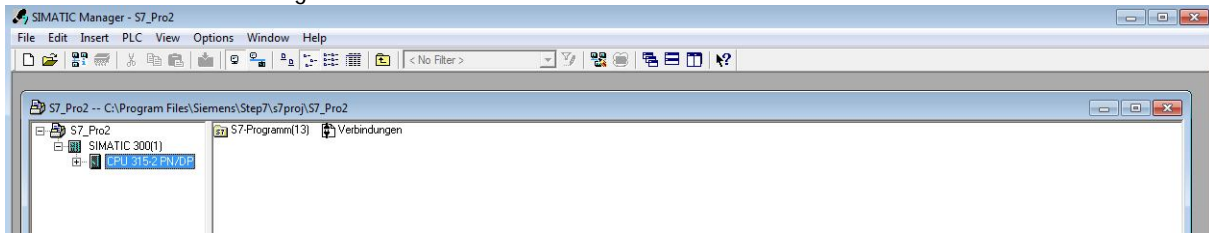
Connection

Use RJ45 cable to connect the S7-315-2 ProfiNet interface to the PMX ProfiNet interface board PX01PN slot 0. Power on both devices.

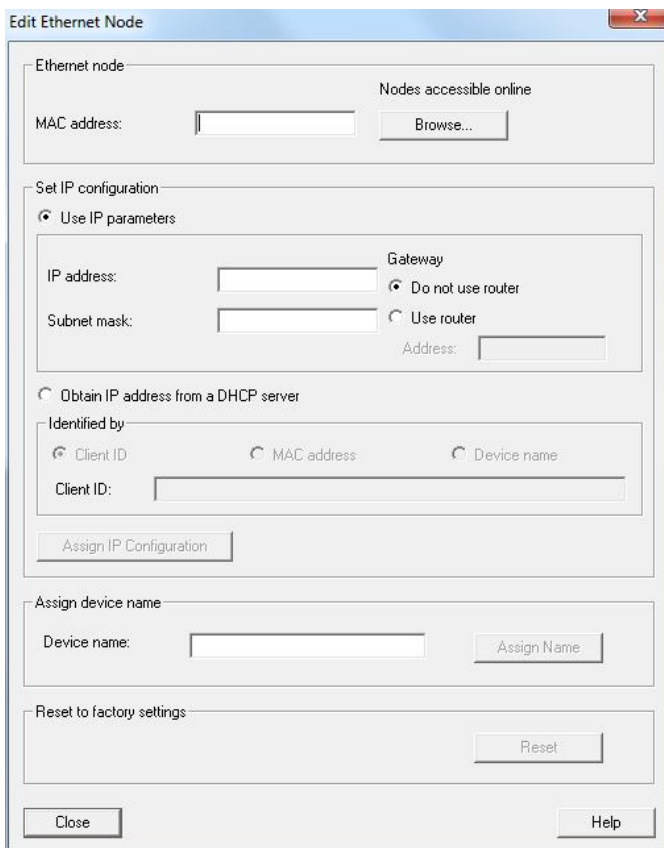
Program start

Start Simatic-manager / TiA-portal and open the demo project (DemoKoff), transfer it to the PLC and start it.

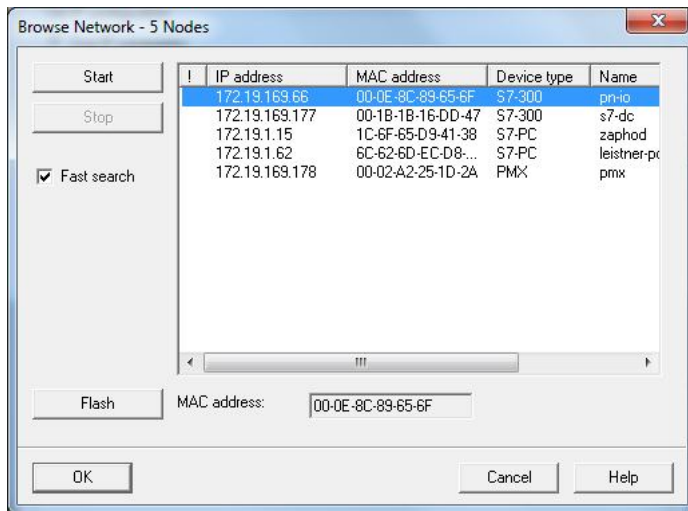
Start STEP7 SIMATIC Manager.



Select "Edit Ethernet Node" from the PLC menu. This results in the following overview:



Click "Browse" in the "Ethernet node" section. This opens a window where network devices found are displayed (this may take some time). Diverse devices can be displayed.

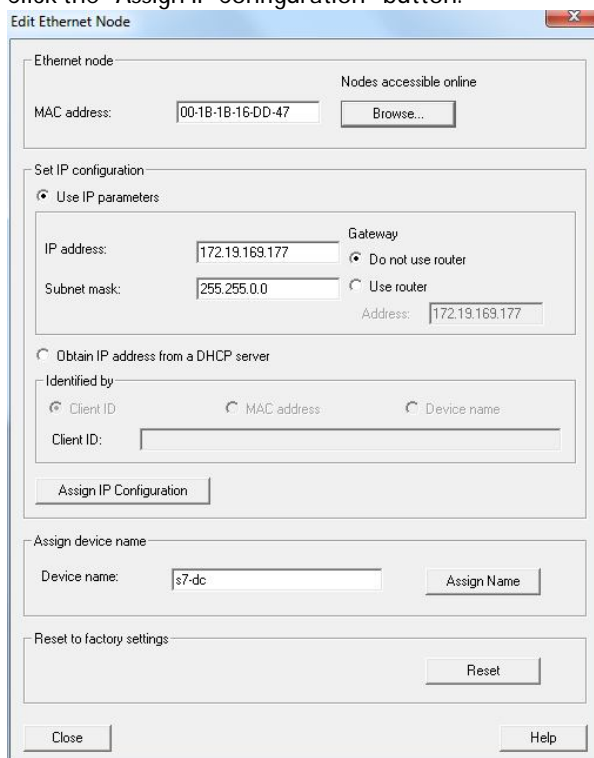


In this case, the S7 unit with MAC address 00-1B-1B-16-DD-47 is selected (address can be found on the device). Then an IP address has to be assigned to the PMX in the "Set IP configuration" section. The following addresses are used:

IP address: 172.19.169.178

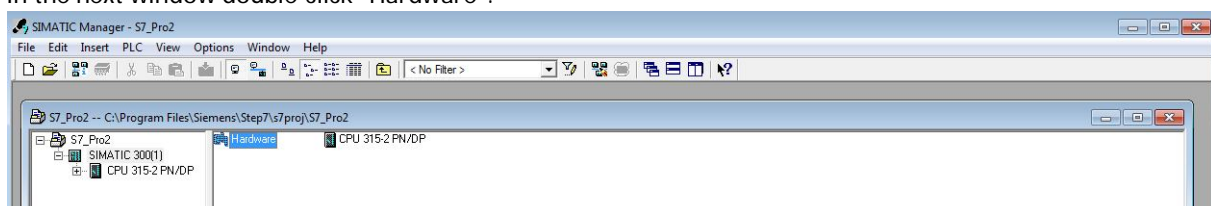
Subnet mask: 255.255.0.0

Click the "Assign IP Configuration" button.

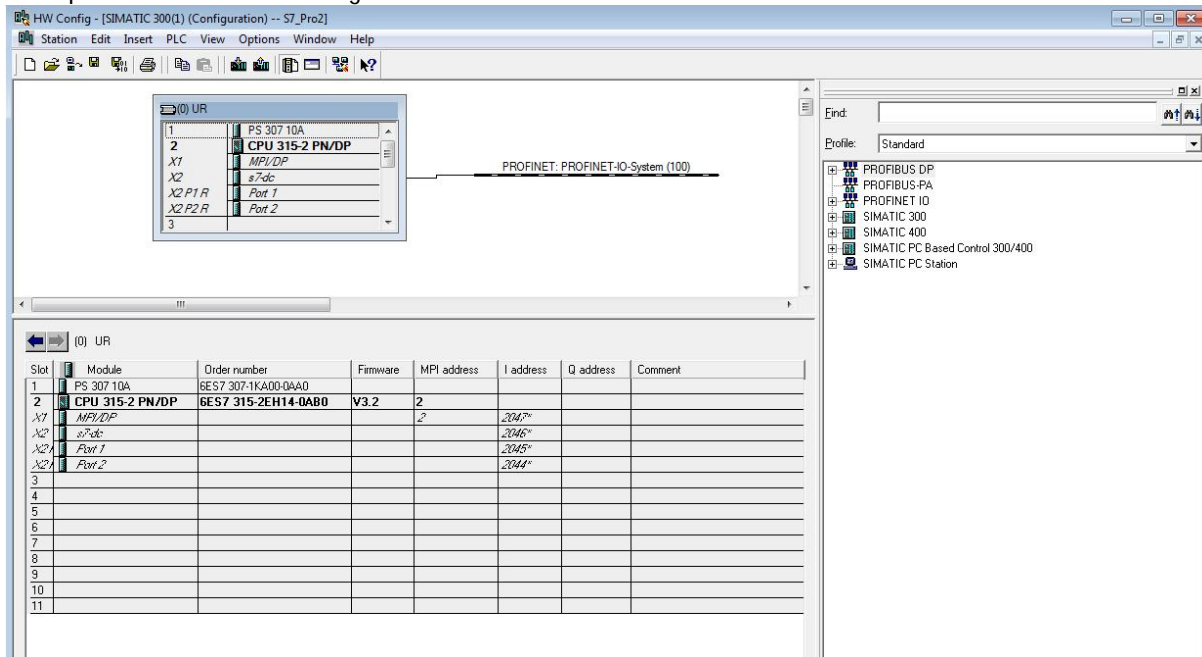


Close the dialog.

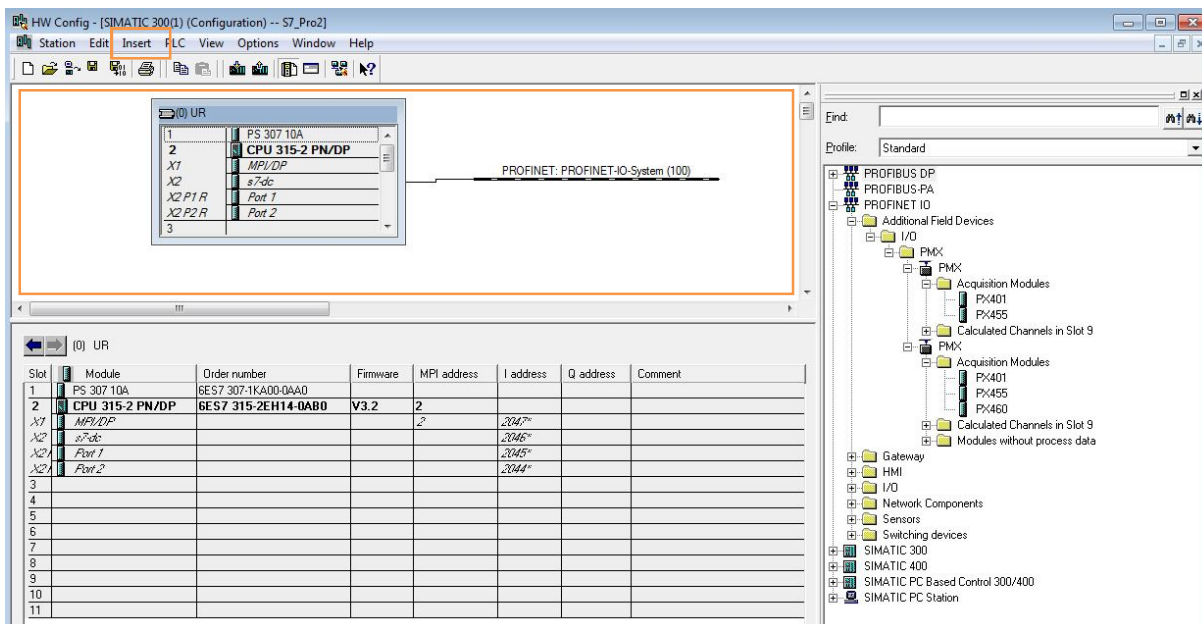
In the next window double-click "Hardware".



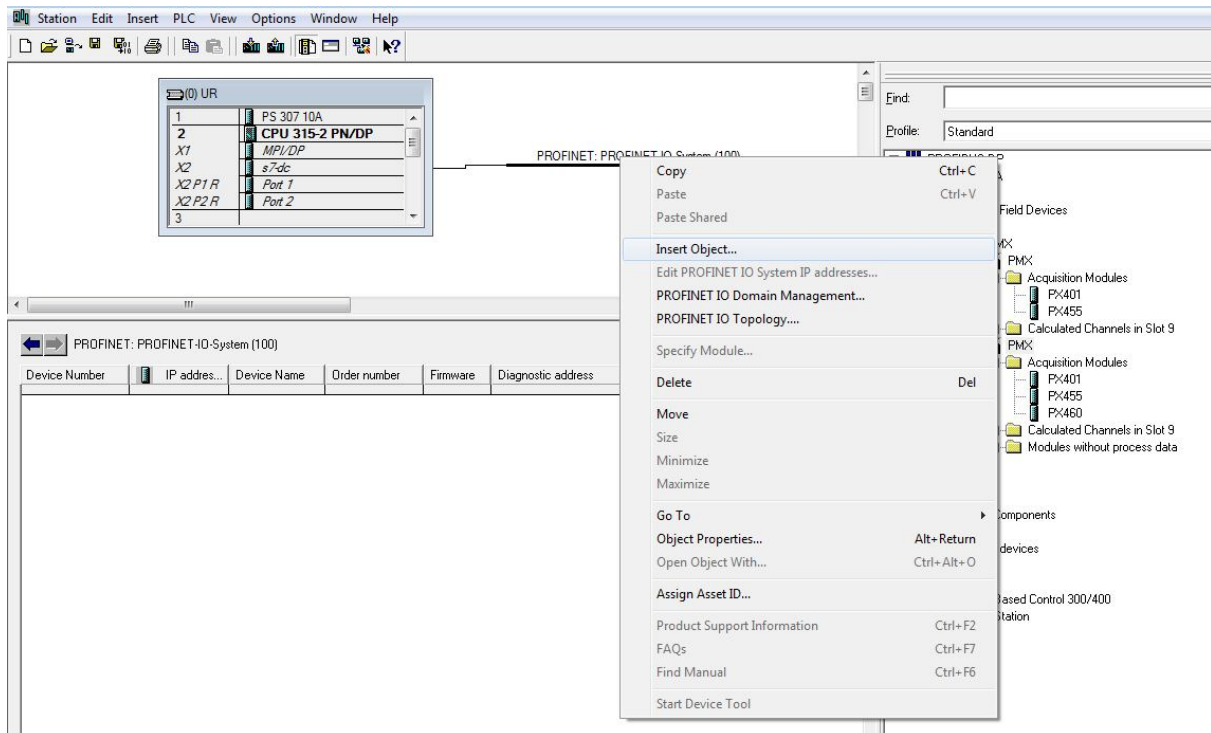
This opens the "Hardware Configuration" window.



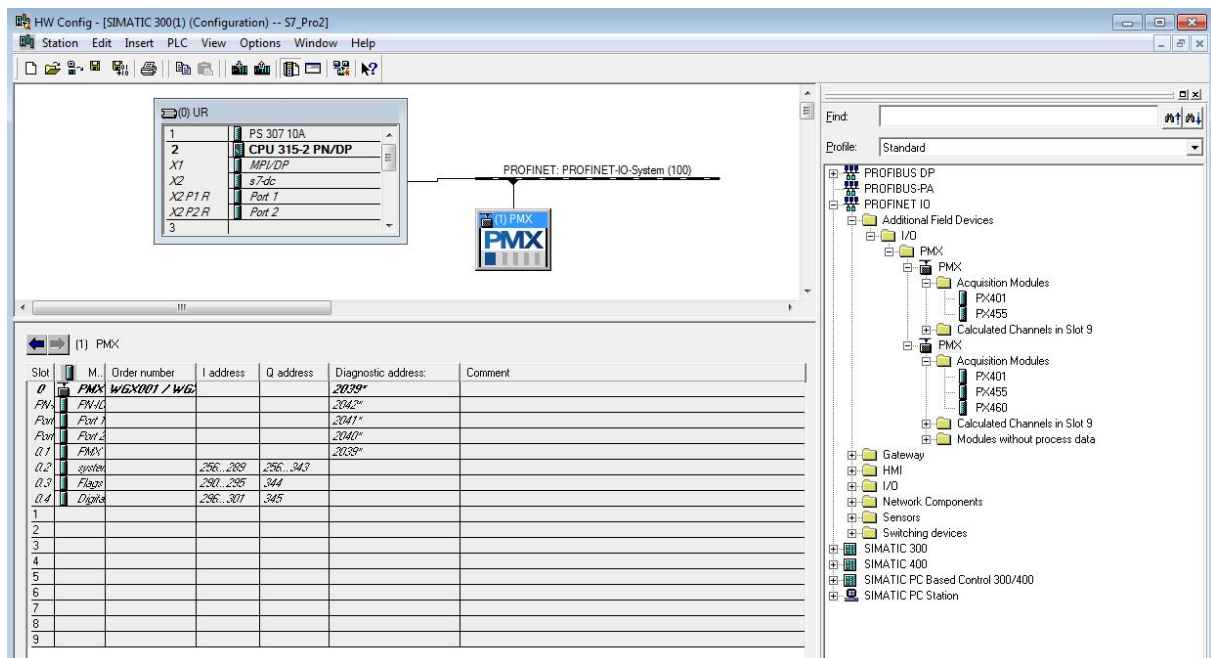
Click Profinet IO\Additional Field Devices\I/O\PMX" to select the suitable PMX system from the right-hand menu tree (note: 2 files are available in this case). Only by opening the sub menu can the correct PMX system be selected. This can be determined through the measuring cards available.



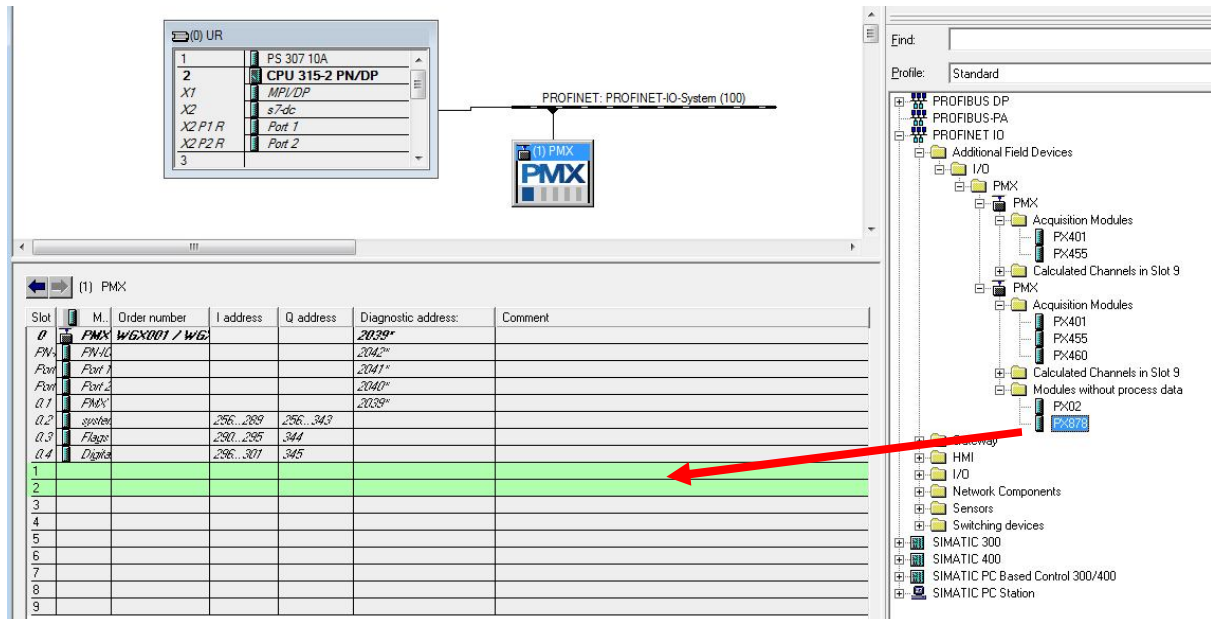
Right-click the field highlighted orange to open the menu where you can add the suitable PMX by clicking "Insert Object" (alternatively: "Insert" from menu).



Click "Additional Field Devices" to select and add the suitable PMX.



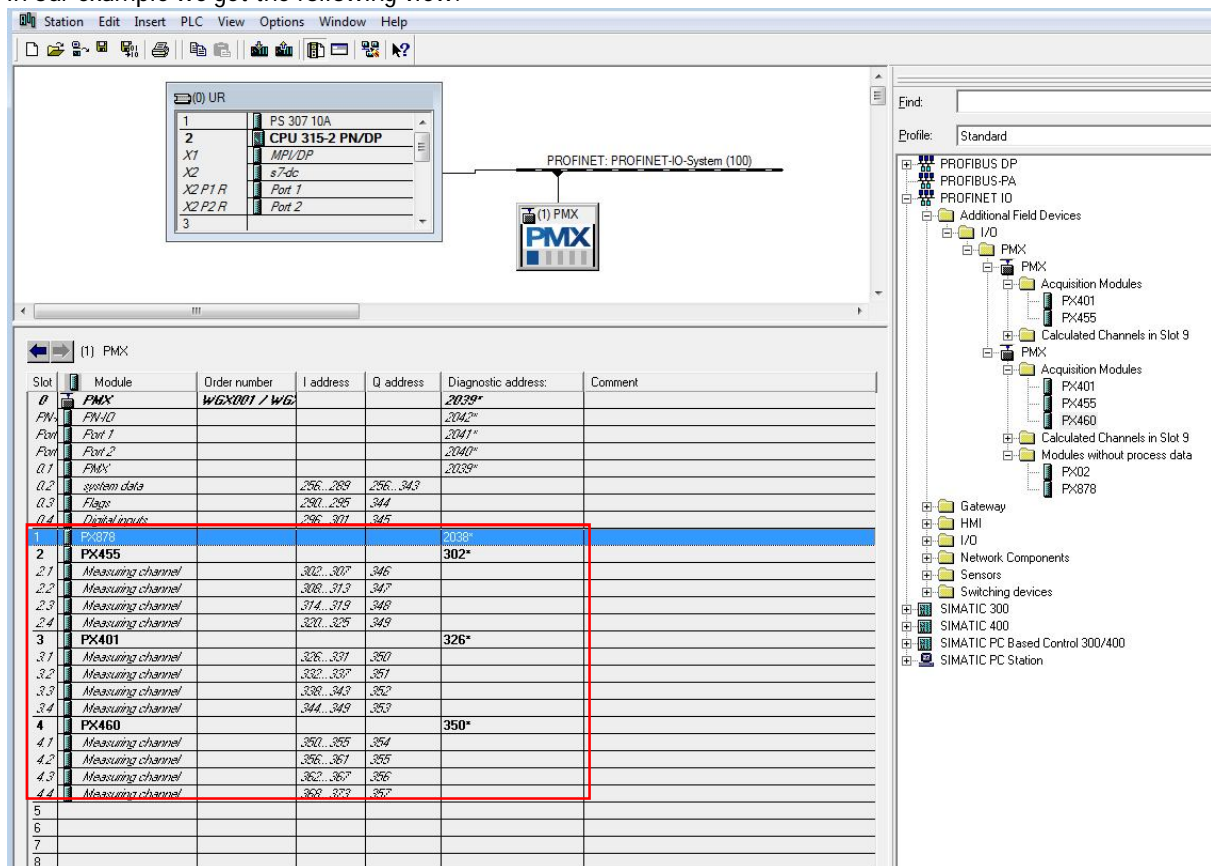
To add the measuring cards to the different slots, drag one of the measuring cards from the menu tree on the right-hand side to one of the slots highlighted green on the left-hand side (see example: PX878 measuring card).



The screenshot shows the HW Config interface. On the left, the rack table is displayed with slots 1 through 9. Slots 1, 2, 3, and 4 are highlighted in green, indicating they are available for module installation. The hardware catalog on the right shows the 'PMX' section expanded, with the 'PX878' module selected. A red arrow points from the PX878 module in the catalog to slot 1 in the rack table.

Slot	M...	Order number	I address	Q address	Diagnostic address:	Comment
0	PMX	W6X2001 / W6X			2039*	
0.1	PMX				2042*	
0.2	PMX				2041*	
0.3	PMX				2040*	
0.4	PMX				2039*	
1						
2						
3						
4						
5						
6						
7						
8						
9						

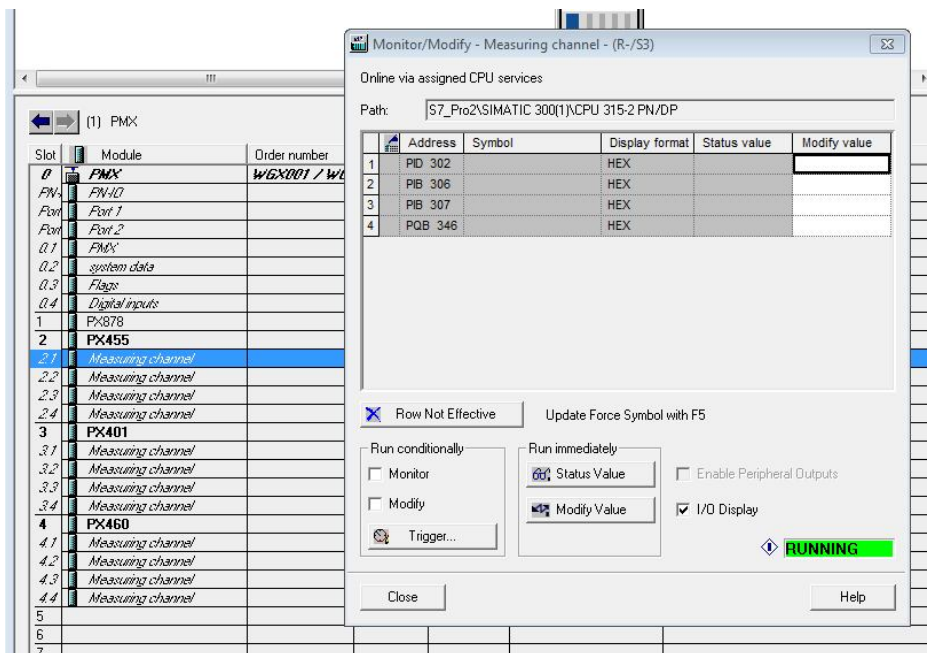
In our example we get the following view:



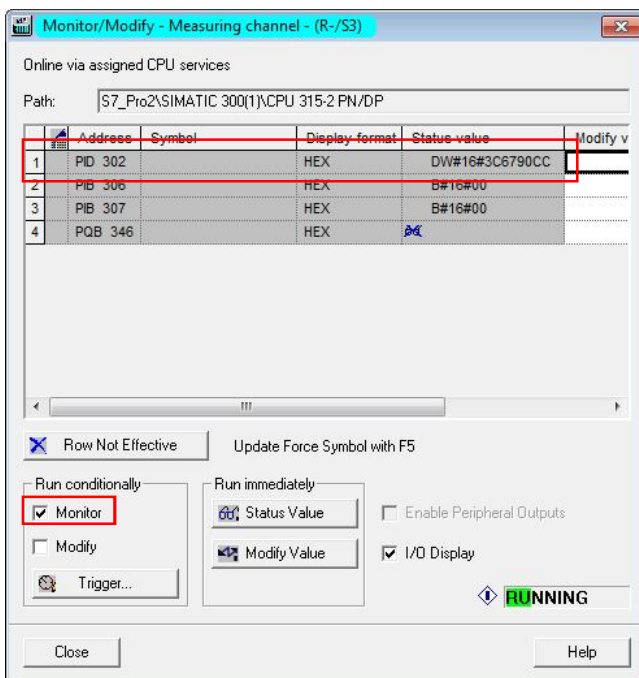
The screenshot shows the HW Config interface after the modules have been added. The rack table now includes modules PX878, PX455, PX401, and PX460. The hardware catalog on the right shows the 'PMX' section expanded, with the 'PX878' module selected. A red box highlights the modules PX878, PX455, PX401, and PX460 in the rack table.

Slot	Module	Order number	I address	Q address	Diagnostic address:	Comment
0	PMX	W6X2001 / W6X			2039*	
0.1	PMX				2042*	
0.2	PMX				2041*	
0.3	PMX				2040*	
0.4	PMX				2039*	
1	PX878				2039*	
2	PX455				302*	
2.1	Measuring channel		302...307	346		
2.2	Measuring channel		308...313	347		
2.3	Measuring channel		314...319	348		
2.4	Measuring channel		320...325	349		
3	PX401				326*	
3.1	Measuring channel		326...331	350		
3.2	Measuring channel		332...337	351		
3.3	Measuring channel		338...343	352		
3.4	Measuring channel		344...349	353		
4	PX460				350*	
4.1	Measuring channel		350...355	354		
4.2	Measuring channel		356...361	355		
4.3	Measuring channel		362...367	356		
4.4	Measuring channel		368...373	357		
5						
6						
7						
8						
9						

Right-click one of the channels to open the "Monitor/Modify" dialog.



Check the "Monitor" box to display a binary status value.



Double-click the PMX system to check the Properties.

Properties - PMX

General Identification

Short description: PMX
PX01PN

Order No./firmware: WGX001 / WGX002
Family: PMX
Device name: PMX

GSD file: GSDML-V2.25-HBM-PMX_IRT-20130404.xml
Change Release Number...

Node in PROFINET IO System

Device number: 1
PROFINET-IO-System (100)
IP address: 172.19.169.178
Ethernet...
☒ Assign IP address via IO controller

Comment:

OK Cancel Help

Calculated Channels can be added analogously to adding measuring cards. They start from slot 9.

(1) PMX

Slot	Module	Order number	I address	Q address	Diagnostic address	Comment
0	PMX	WGX001 / WGX002			2039*	
0.1	Port 1				2042*	
0.2	Port 2				2041*	
0.3	Port 2				2042*	
0.4	Port 2				2039*	
1	PX878				2038*	
2	PX455				302*	
2.1	Measuring channel		302...307	346		
2.2	Measuring channel		308...313	347		
2.3	Measuring channel		314...319	348		
2.4	Measuring channel		320...325	349		
3	PX401				326*	
3.1	Measuring channel		326...331	350		
3.2	Measuring channel		332...337	351		
3.3	Measuring channel		338...343	352		
3.4	Measuring channel		344...349	353		
4	PX460				350*	
4.1	Measuring channel		350...355	354		
4.2	Measuring channel		356...361	355		
4.3	Measuring channel		362...367	356		
4.4	Measuring channel		368...373	357		
5						
6						
7						
8						
9						

The PROFINET module 8 calculated channels may not be inserted into slot 8.

Calculated Channels in Slot 9

- Calculated Channels in Slot 9
 - 12 calculated channels
 - 16 calculated channels
 - 20 calculated channels
 - 24 calculated channels
 - 28 calculated channels
 - 32 calculated channels
 - 4 calculated channels
 - 8 calculated channels
- Modules without process data
 - PX02
 - PX878

Gateway

HMI

I/O

Network Components

Sensors

Switching devices

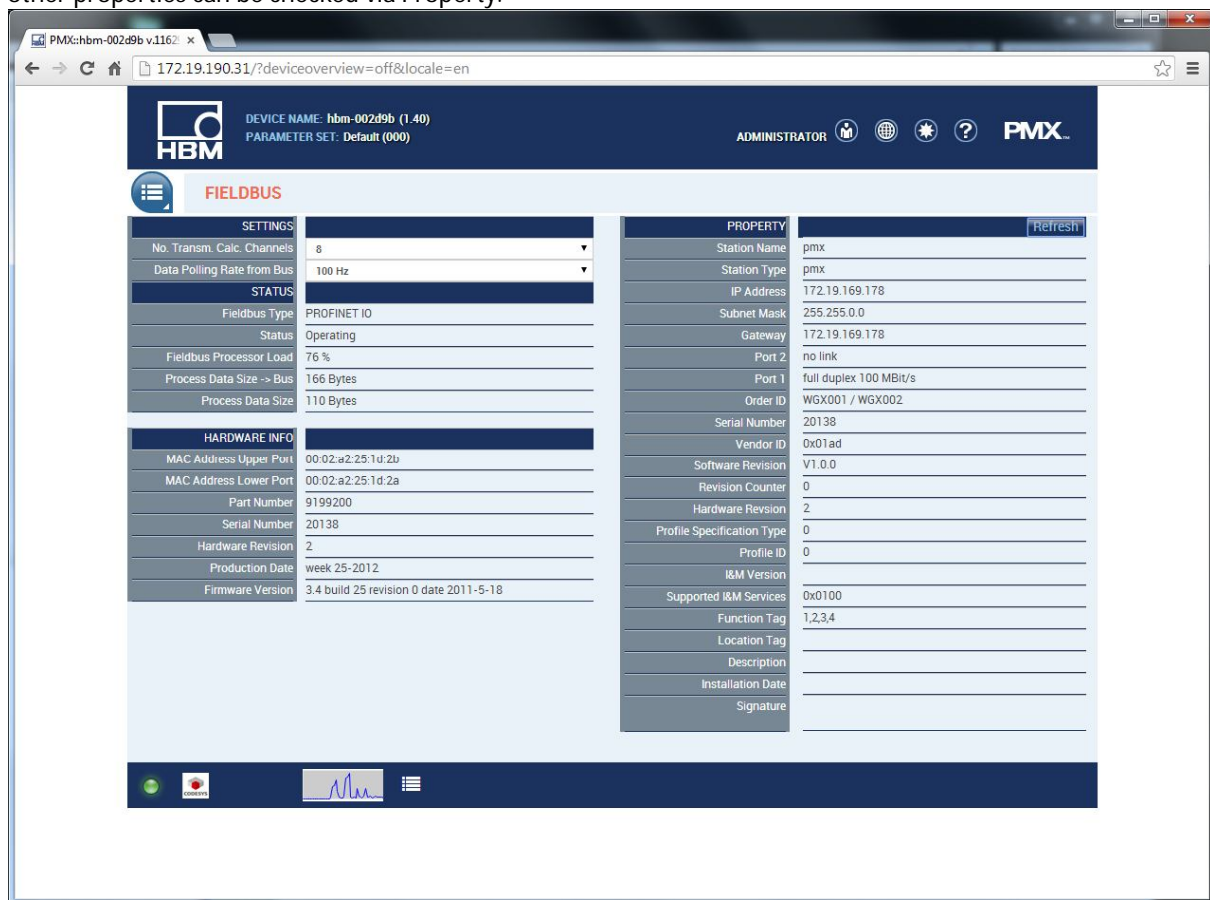
SIMATIC 300

SIMATIC 400

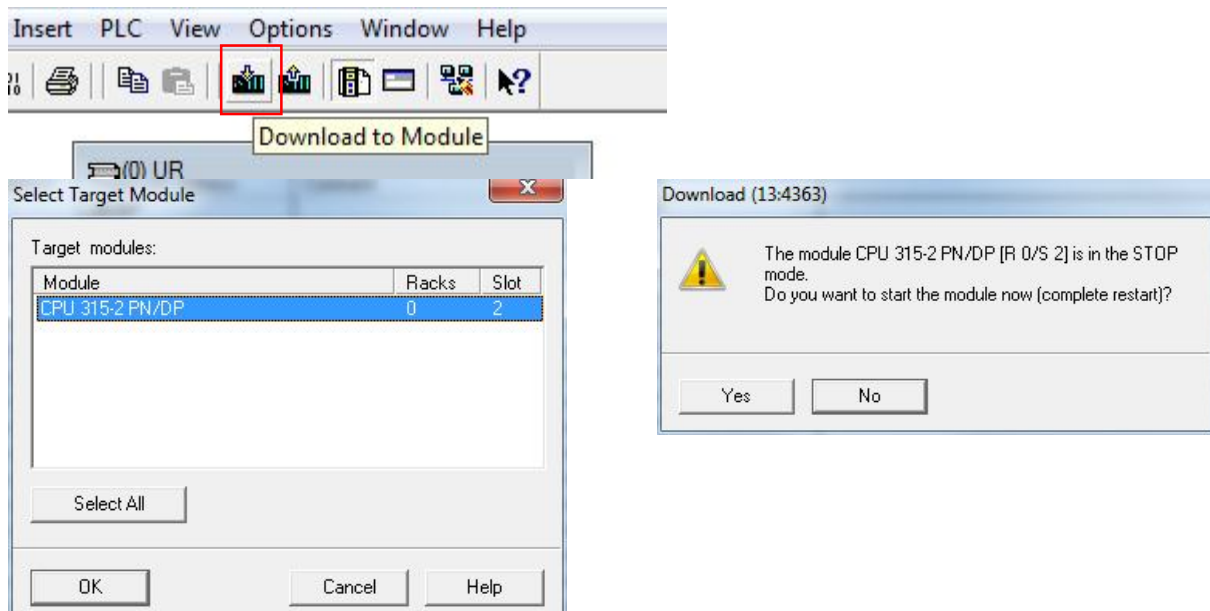
SIMATIC PC Based Control 300/400

SIMATIC PC Station

Make sure that the number of Calculated Channels corresponds to that in the PMX web browser (in this case: 8). The other properties can be checked via Property.



Click "Download to Module" to start.



Disclaimer

The example given is intended to illustrate the integration of PMX with Siemens PLC using Siemens Siematic Manager or TIA-Portal. This example does not imply any warranty or guarantee.