



AL1x0x Siemens TIA Set Up



Assign the PROFINET device name.

There are 2 ways to assign a PROFINET device name to the AL1x0x.

1. Via ifm's LR Device software.
2. Via the TIA Portal's online access.

For AL110x and AL120x, use the fieldbus port for this set up. For ifm's DataLine, AL130x, use the IoT port for this set up.

1. With LR Device installed and the AL1x0x on the same network.

In the software select "Read from device".



From the center screen we can set the IP address as well as the PROFINET name.

Parameter	Value
IP address	<input type="text" value="0.0.0.0"/>
Subnet mask	<input type="text" value="0.0.0.0"/>
IP gateway address	<input type="text" value="0.0.0.0"/>

***Note:** Please review the restrictions of the PROFINET name per the software.

Profinet name	<input type="text" value="al1100"/>
---------------	-------------------------------------

Once modified write the parameters via the "Write to device" button





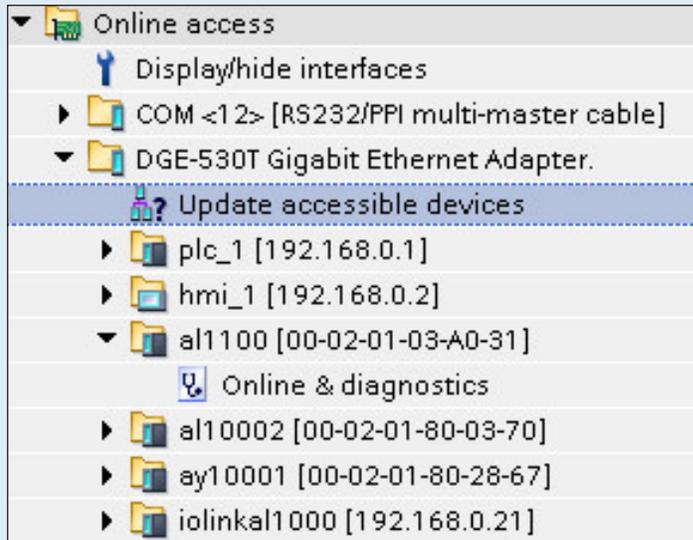
AL1x0x Siemens TIA Set Up



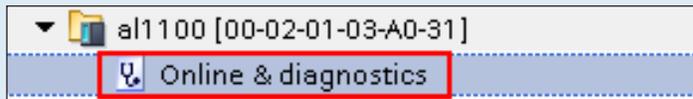
2. With TIA Portal and the AL1x0x on the same network.

This instruction uses AL1100 as an example.

Under the Project tree open "Online access" and double click "Update accessible devices".

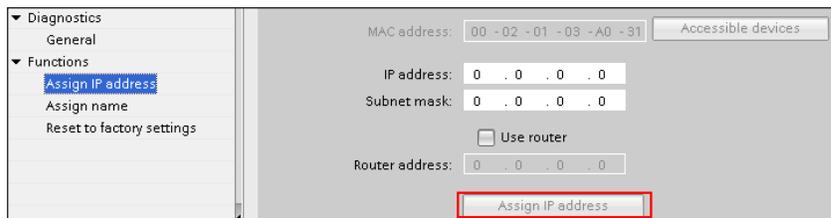


The available devices will populate. Now select "al1100" and double click on "Online & diagnostics".

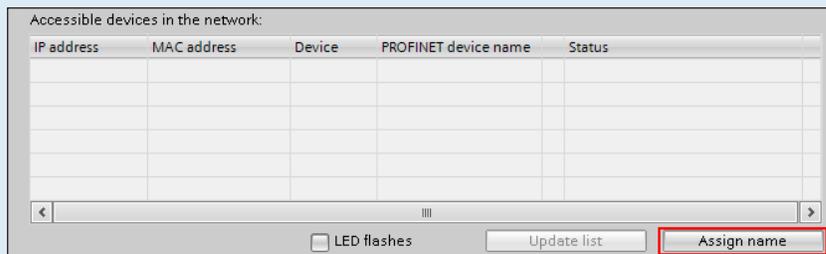


Insert any IP address information and assign it.

This will also provide access to the web-interface.



Insert a PROFINET name and assign it.





AL1x0x Siemens TIA Set Up

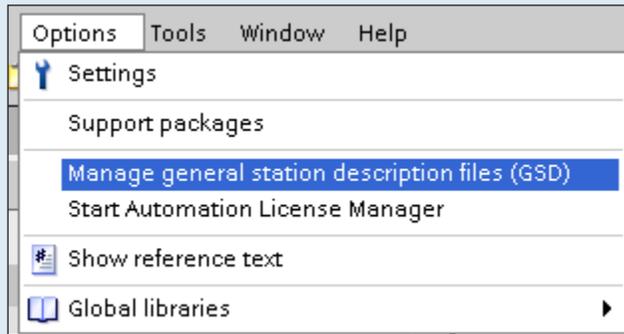


■ Siemens TIA Portal set up.

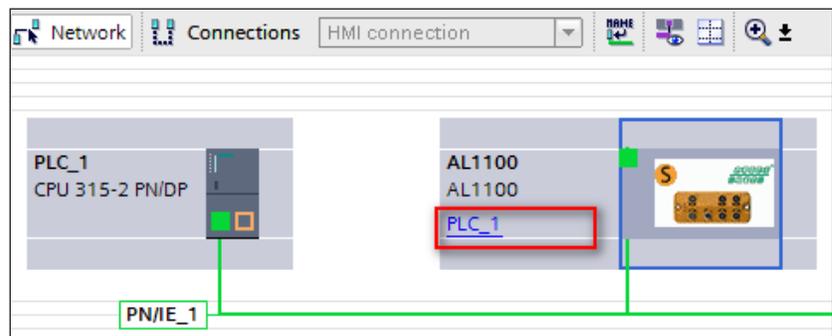
Download the GSDML file here at <https://www.ifm.com/us/en/downloadarea/IOMasterContent>

GSDML Profinet IO	AL1100 AL1101 AL1102 AL1103 AL1200 AL1201 AL1202 AL1203 AL1300 AL1301 AL1302 AL1303 AL1900 ZZ1100	V2.2.18	152 kb	Download
---------------------	--	---------	--------	--------------------------

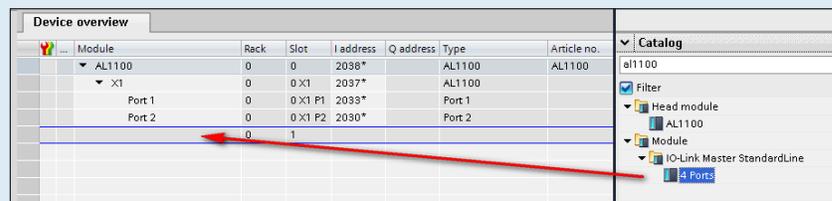
Install the GSD into the program.



Install the module into the hardware set up and link to the PLC.



Go to the AL1100 device overview and drag and drop the 4 port module.





AL1x0x Siemens TIA Set Up



From the submodules drag and drop the port assignments for the AL1100.

Module	Rack	Slot	I address	Q address	Type
4 Ports_1	0	1	2029*		4 Ports
IO-Link Master	0	1 1	2029*		IO-Link Master
	0	1 2			
	0	1 3			
	0	1 4			
	0	1 5			

When finished and renamed it will look something like this...

Module	Rack	Slot	I address	Q address	Type
AL1100	0	0	2037*		AL1100
X1	0	0 X1	2033*		AL1100
4 Ports_1	0	1			4 Ports
IO-Link Master	0	1 1	2028*		IO-Link Master
Port 1 IO-Link In 2 Byte ...	0	1 2	278...280		IO-Link In 2 Byte + ...
Port 2 IO-Link In 2 Byte ...	0	1 3	281...283		IO-Link In 2 Byte + ...
Port 3 Disabled	0	1 4	2026*		Disabled
Port 4 Disabled	0	1 5	2027*		Disabled

Now highlight the AL1100 and make sure that the "Properties" field is viewable.

Module	Rack	Slot	I addr...
AL1100	0	0	2037*
X1	0	0 X1	2033*
4 Ports_1	0	1	
IO-Link Master	0	1 1	2028*

AL1100 [Module] Properties Info Diagnostics

General IO tags System constants Texts

General

Catalog information

PROFINET interface [X1]

General

Ethernet addresses

Advanced options

Interface options

Ethernet addresses

Interface networked with

Subnet: PN/IE_1

Add new subnet

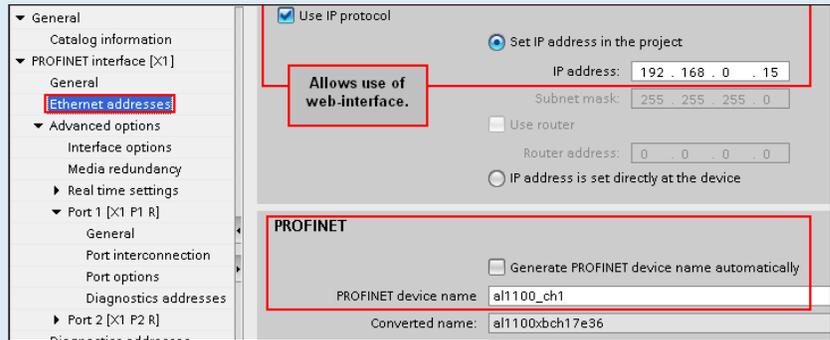


AL1x0x Siemens TIA Set Up



Select "Ethernet addresses" and insert the parameters to match those already set in the AL1100.

These must match the AL1100 settings.



■ Add sensors to the block:

To sort out the IO Link data correctly use the port byte locations and the IODD PDF file of the attached IO Link sensor to the port.

Device overview						
Module	Rack	Slot	I address	Q address	Type	
AL1100	0	0	2038*		AL1100	
X1	0	0 X1	2037*		AL1100	
4 Ports_1	0	1			4 Ports	
IO-Link Master	0	1 1	2022*		IO-Link Master	
Port 1 IO-Link In 2 Byte + PQI	0	1 2	276...278		IO-Link In 2 Byte + PQI	
Port 2 Disabled	0	1 3	2021*		Disabled	
Port 3 IO-Link In 2 Byte + PQI	0	1 4	279...281		IO-Link In 2 Byte + PQI	
Port 4 Disabled	0	1 5	2020*		Disabled	

Example: LMT121 on Port 1:

The list of IODD PDF's can be found here at <https://www.ifm.com/us/en/downloadarea/IOContent>

Find the IODD for LMT121 and download.

LMT121	IODD Release Version V2.0.9 supports IODD 1.0.1 and IODD 1.1 - Standard	972 kb	Download
--------	---	--------	--------------------------

The IODD structure is on page 2 of the pdf.

Process data								
(Process data input)								
Name	Description	Data type	Bit offset	Bit length	Value range	Gradient	Offset	Unit
Level	Current level	UIntegerT	2	14	0 to 100	1	0	%
OUT2	Status depends on [OU2]	BooleanT	1		(false) inactive (true) active			
OUT1	Status depends on [OU1]	BooleanT	0		(false) inactive (true) active			

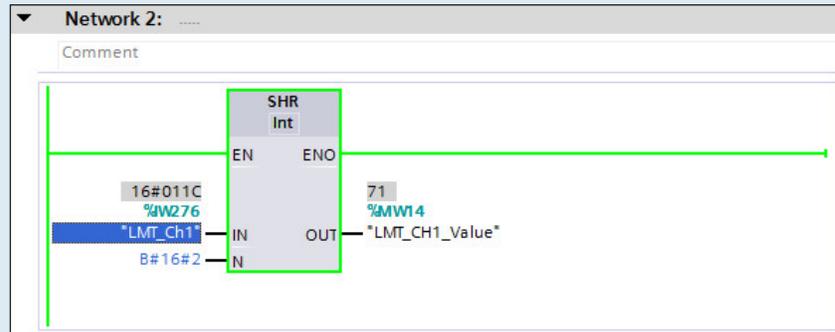
The diagram shows a 16-bit bus structure. Bit 0 is OUT1, bit 1 is OUT2, and bits 2-14 are Level. Bits 15-16 are reserved (PLC).



AL1x0x Siemens TIA Set Up



Using this we can look at the two bytes across input 276 & 277. If we are not concerned with the output bits (bit 0 & 1), then we simply do a shift right of 2 bits as seen in the network here.



This provides us with the percentage value of 71% based on the IODD PDF.