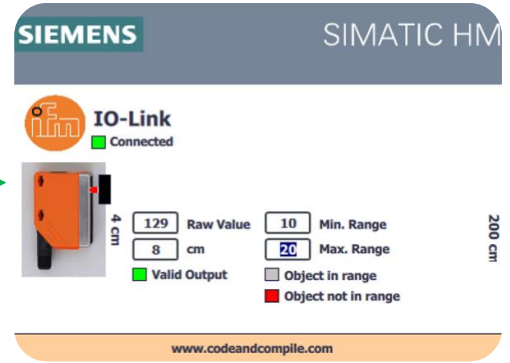




Starter kit IO-Link master



In this video you will see:

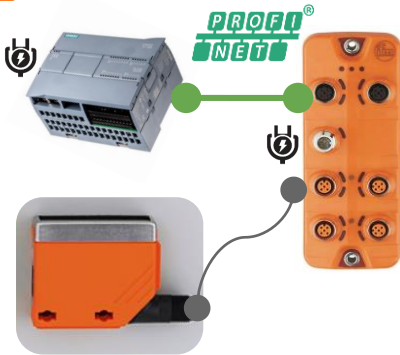
How easy is to link Starter kit IO-Link master with Siemens S7-1200 PLC?



Starter kit IO-Link master with Siemens S7-1200



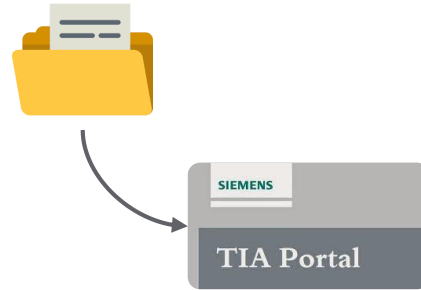
Following are the various steps:



Step 1:

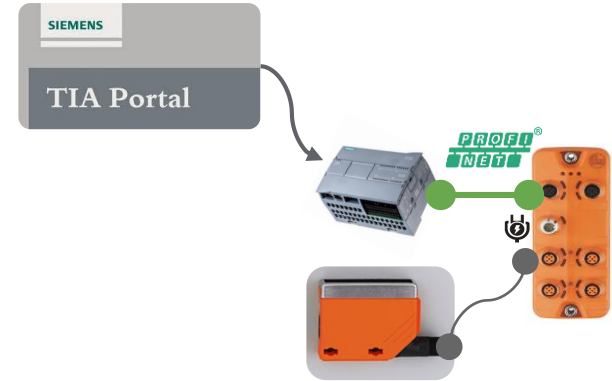
Connect your IO-Link Master with Sensor, 24VDC and S7-1200 PLC (via PROFINET)

You can connect to PLC directly or via Ethernet Switch



Step 2:

Download GSD file for the IO-Link Master (AL1100) and install it in Siemens TIA Portal
Add the respective module & Sub-modules in network from the GSD files



Step 3:

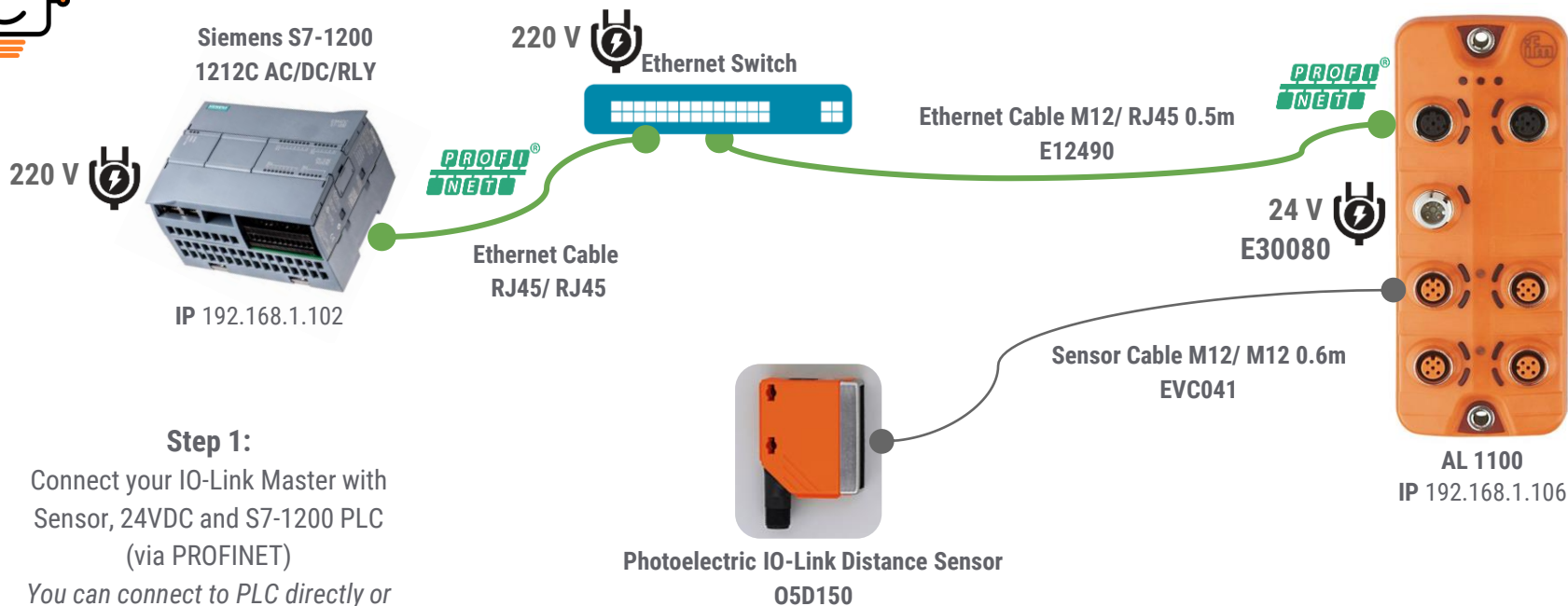
Make a logic in your PLC as per your requirement and download it to PLC with hardware configuration of AL1100.
Get online and starts monitoring your sensor values



Starter kit IO-Link master with Siemens S7-1200



Following are the various steps:



Step 1:

Connect your IO-Link Master with
Sensor, 24VDC and S7-1200 PLC
(via PROFINET)

*You can connect to PLC directly or
via Ethernet Switch*



Starter kit IO-Link master with Siemens S7-1200



Step 2.0:

Download GSD file for the IO-Link Master (AL1100) from the below link

<https://www.ifm.com/ifmmy/web/io-link-master.htm>

GSDML AL1000 Profinet IO	V2.0.1		» Download	17 kb
GSDML AL1100 Profinet IO	V1.1.29		» Download	17 kb
GSDML AL1101 Profinet IO	V1.1.29		» Download	17 kb



GSD files. A **GSD file** (General Station Description), which is provided by the device manufacturer, contains a description of the PROFIBUS DP/PA (ASCII file) or PROFINET (.xml file) device.

GSD files provide a way for an open configuration tool to automatically get the device characteristics.

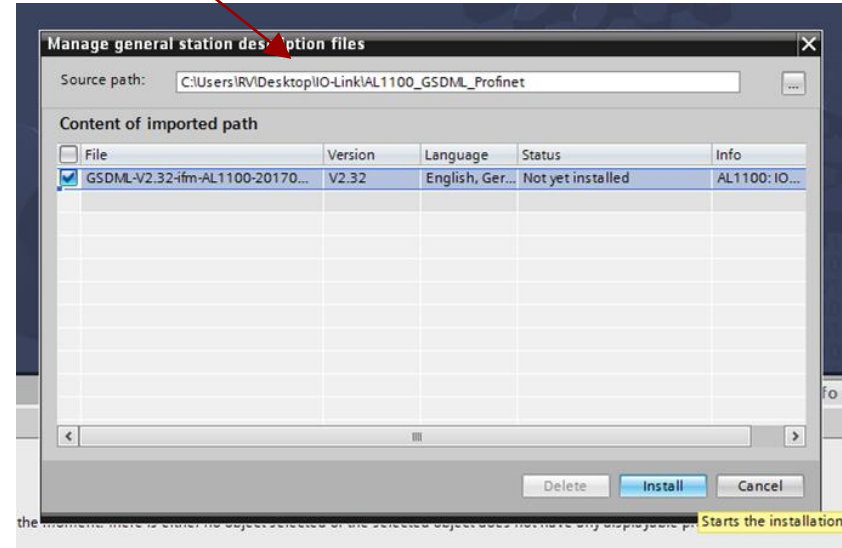
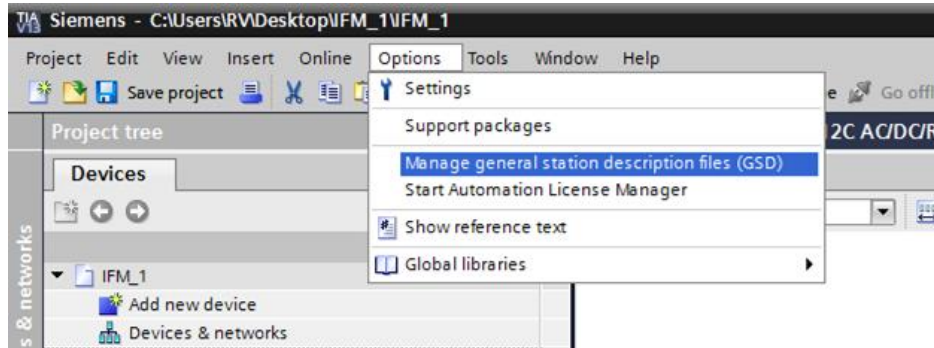


Starter kit IO-Link master with Siemens S7-1200



Step 2.1:

Install the downloaded file in Siemens TIA. Give the path of downloaded file in 'Source path'





Starter kit IO-Link master with Siemens S7-1200



Step 2.2:

After successful installation Go to Network -> Hardware Catalog and search for **AL1100** and drag it to your network in TIA

The screenshot displays the TIA Portal interface. On the left, the 'Devices & networks' window shows a network configuration for 'IFM_1'. It includes a 'PLC_1 CPU 1212C' and an 'AL1100' device, which is currently 'Not assigned'. On the right, the 'Hardware catalog' window is open, showing a search for 'AL1100'. The catalog is filtered to show 'Other field devices' under the 'ifm electronic' category. A red arrow points from the 'AL1100' entry in the hardware catalog to the 'AL1100' device in the network configuration window.

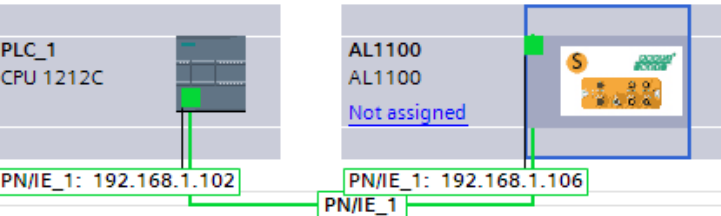
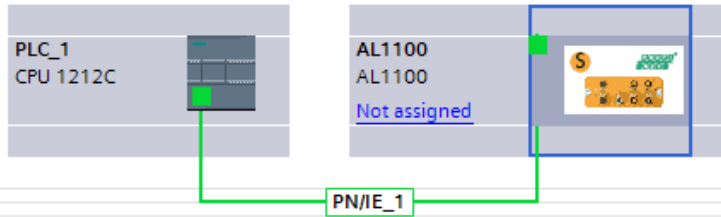


Starter kit IO-Link master with Siemens S7-1200



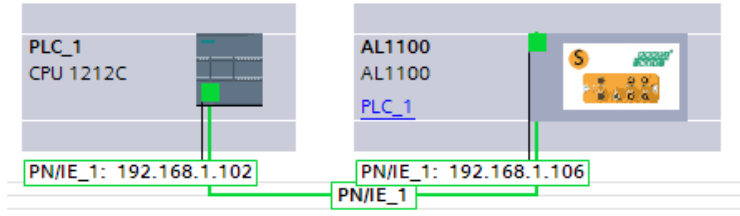
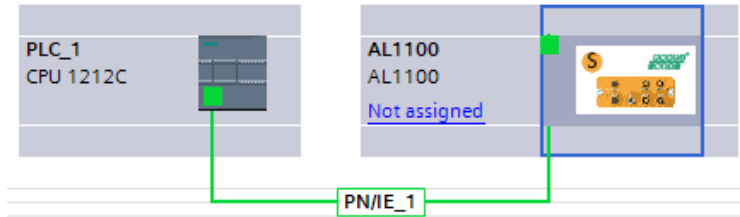
Step 2.3:

Link the PROFINET ports together by drag and drop and assign the IP Addresses



Step 2.4:

Assign the PROFINET name
Right Click – Assign Profinet name





Starter kit IO-Link master



Step 2.5:

Double click the AL100 in networks and drag the modules in 'Device Overview'

The screenshot shows the IFM software interface with the following components:

- Header:** IFM_1 > Unassigned devices > AL1100
- Toolbar:** Includes icons for search, refresh, save, print, zoom, and other functions.
- Device Overview Table:**

Module	Rack	Slot	I address	Q address	Type
AL1100	0	0			AL1100
X1	0	0 X1			AL1100
4 Ports_1	0	1			4 Ports
IO-Link Master	0	1 1			IO-Link Master
	0	1 2			
	0	1 3			
	0	1 4			
	0	1 5			

- Hardware Catalog:** Shows a tree view with 'AL1100' expanded to show '4 Ports' and 'Submodules'.
- Device Overview Panel:** A graphical representation of the rack with a '4 Ports' module highlighted and labeled 'AL1100'.



Starter kit IO-Link master with Siemens S7-1200



Step 2.6:

Double click the AL100 in networks and drag the modules (2 Byte + PQI) in 'Device Overview'. You will get Input address Automatically

Module	Rack	Slot	I address	Q address	Type	Article ...
AL1100	0	0			AL1100	AL1100
X1	0	0 X1			AL1100	
4 Ports_1	0	1			4 Ports	AL1100
IO-Link Master	0	1.1			IO-Link Master	
IO-Link In 2 Byte + PQI	0	1.2	68...70		IO-Link In 2 Byte + ...	
Disabled	0	1.3			Disabled	
Disabled_1	0	1.4			Disabled	
Disabled_2	0	1.5			Disabled	



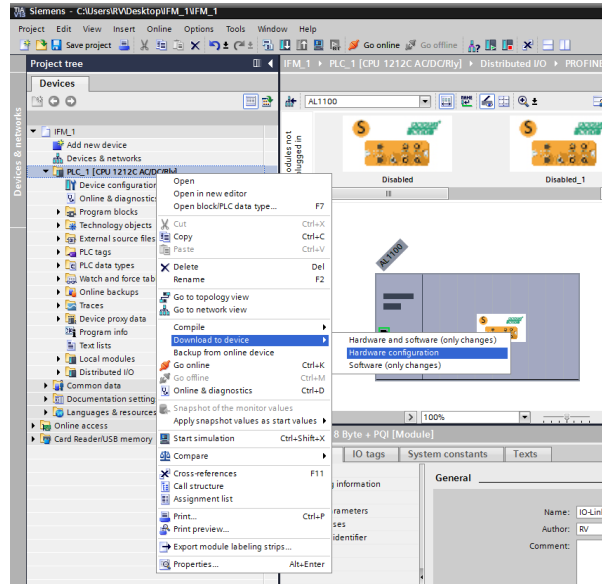


Starter kit IO-Link master with Siemens S7-1200



Step 3.0:

Download the Hardware Configuration to PLC



Step 3.1:

Go Online and start monitoring the values from Sensor

IFM_1 ▶ PLC_1 [CPU 1212C AC/DC/Rly] ▶ Watch and force tables ▶ Watch table_1

	Name	Address	Display format	Monitor value	Modify value
1	*Sensor_Raw	%IW68	DEC	161	
2	*Sensor_Diag	%IW70	Bin	2#1010_0000_0000	
3	*Sensor_Measurin...	%I70.7	Bool	TRUE	
4	*Sensor_IO-Link_...	%I70.5	Bool	TRUE	
5	*Tag_1*	%I0.7	Bool	FALSE	



Measuring Range: 0.03m to 2m

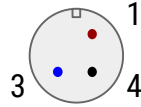
3 cm to 200 cm

Digital Range: 65 bits to 3200 bits



Without IO-Link

Sensor Wiring



1 - Brown - 24VDC

3 - Blue - 0 VDC

4 - Black - PNP Output goes to PLC



No object

OFF
No Output



<=3 cm
Min. range

ON
PNP Output = 24VDC



100 cm
Medium range

ON
PNP Output = 24VDC



200 cm
maximum range

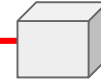
ON
PNP Output = 24VDC



Starter kit IO-Link master with Siemens S7-1200



≤ 3 cm
Min. range



ON
Output in Decimal Value = 65



100 cm
Medium range



ON
Output in Decimal Value = 1600



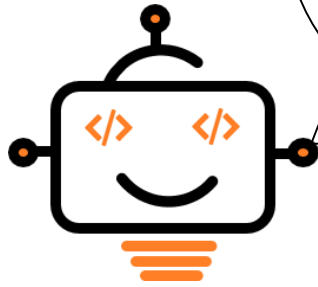
200 cm
maximum range



ON
Output in Decimal Value = 3200

SDCI

The single-drop digital communication interface technology



INSTALL IO-LINK AND
AWARE WHAT IS HAPPENING
ON MACHINES
MINUTE-BY-MINUTE

To buy your own **Starter Kit IO-Link master** at reduced price visit

<https://www.ifm.com/de/en/shared/product-news/2017/sps/starter-kit-io-link-master>

Link also given in the video description