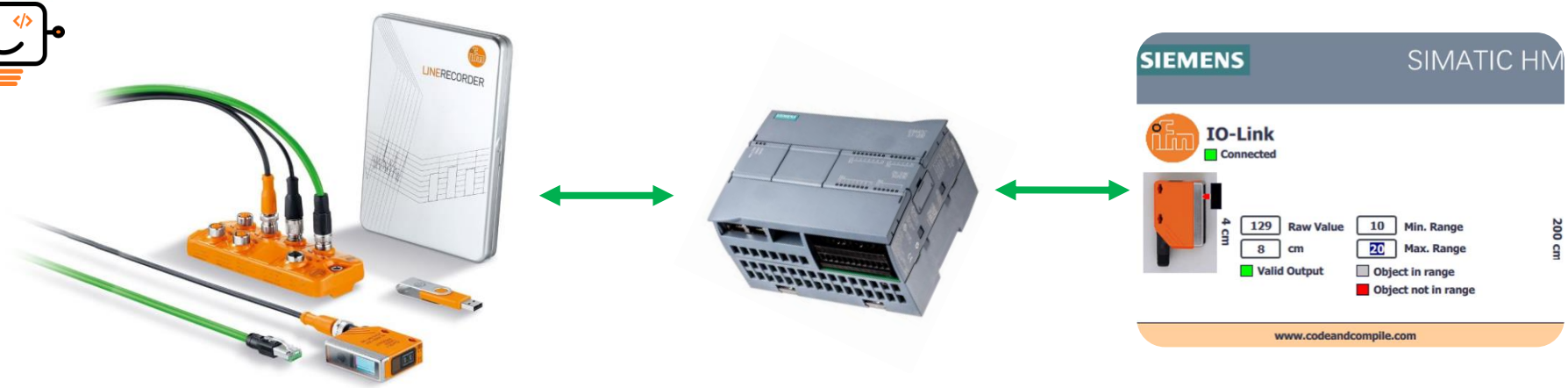
# Starter kit IO-Link master

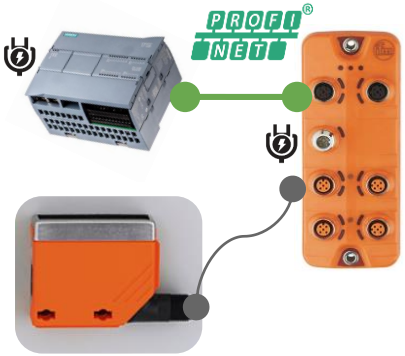



**In this video you will see:**

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

# Starter kit IO-Link master with Siemens S7-1200

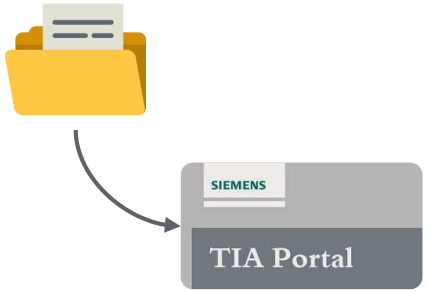
## Following are the various steps:




**Step 1:**

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

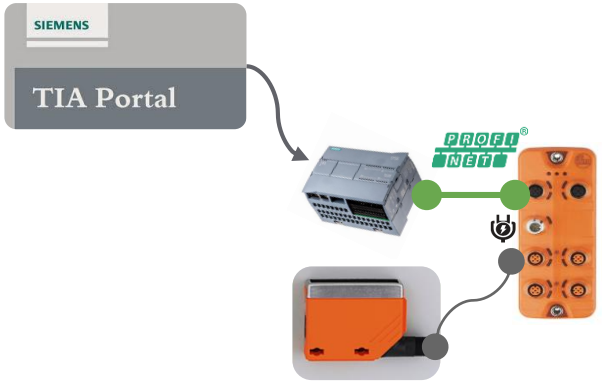
*You can connect to PLC directly or via Ethernet Switch*




**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 downlaod 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:

Siemens S7-1200
1212C AC/DC/RLY

220 V

IP 192.168.1.102

220 V Ethernet Switch

PROFINET

Ethernet Cable
RJ45/ RJ45

Ethernet Cable M12/ RJ45 0.5m
E12490

PROFINET

24 V
E30080

Sensor Cable M12/ M12 0.6m
EVC041

Photoelectric IO-Link Distance Sensor
O5D150

AL 1100
IP 192.168.1.106

**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 |

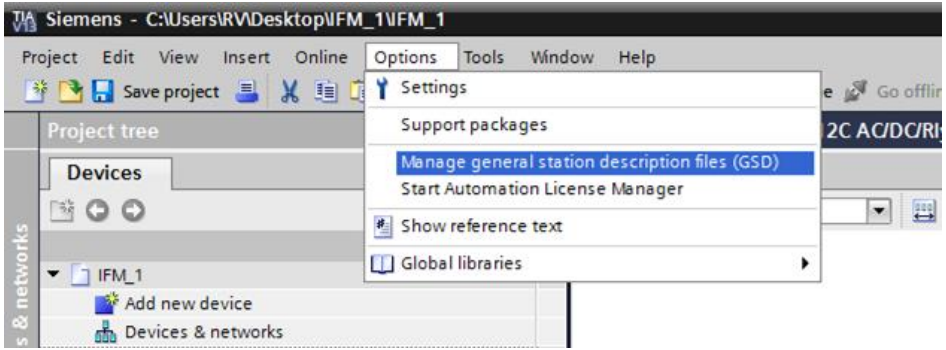

**GSD files**. A **GSD file** (General Station Description), which is provided by the device manufacturer, contains a description of the PROFIBUS DP/PA (ASCII file) or PROFINET (.xml file) device.

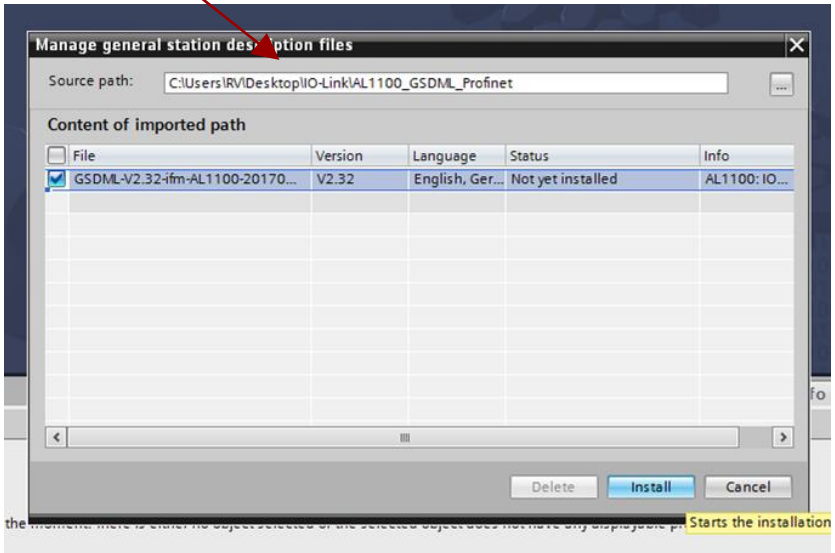
**GSD files** provide a way for an open configuration tool to automatically get the device characteristics.

# 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’

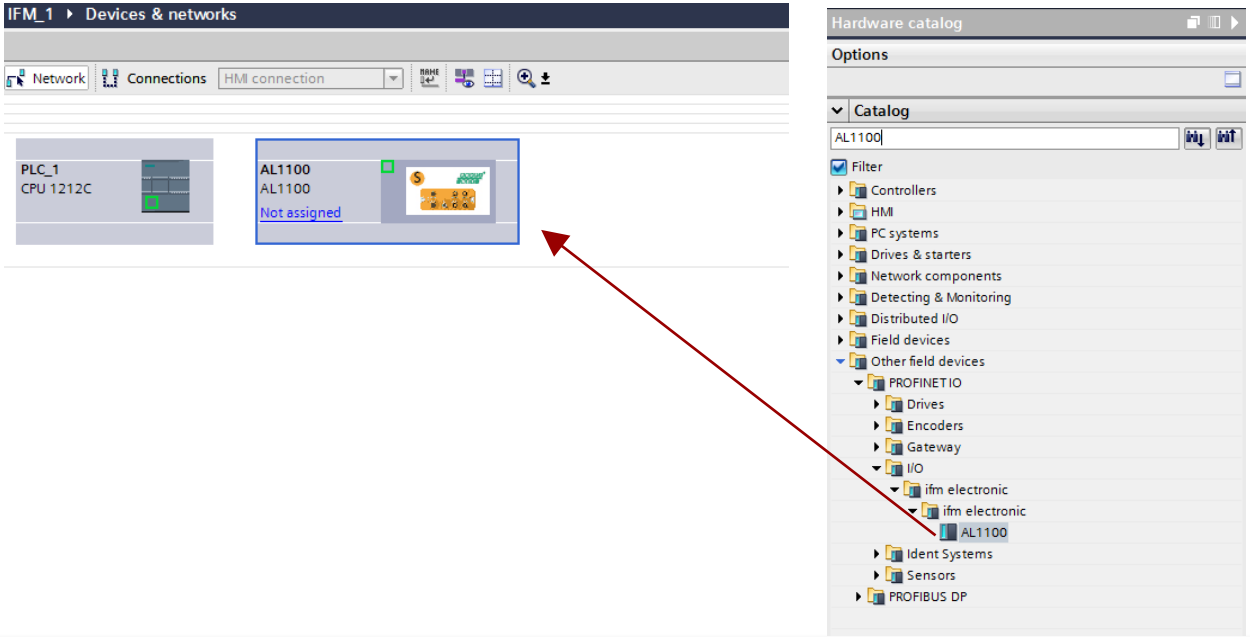


# Starter kit IO-Link master with Siemens S7-1200

## Step 2.2:

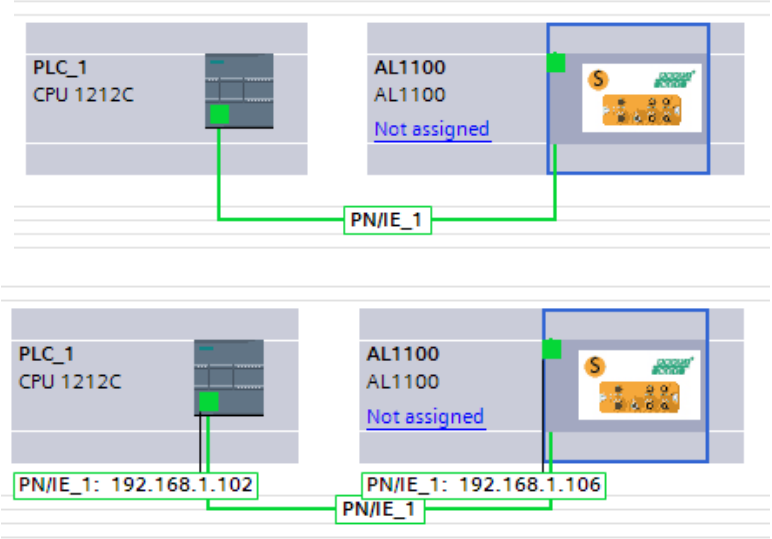
After successful installation Go to Network -> Hardware Catalog and search for **AL1100 and drag it to your network in TIA**



# Starter kit IO-Link master with Siemens S7-1200

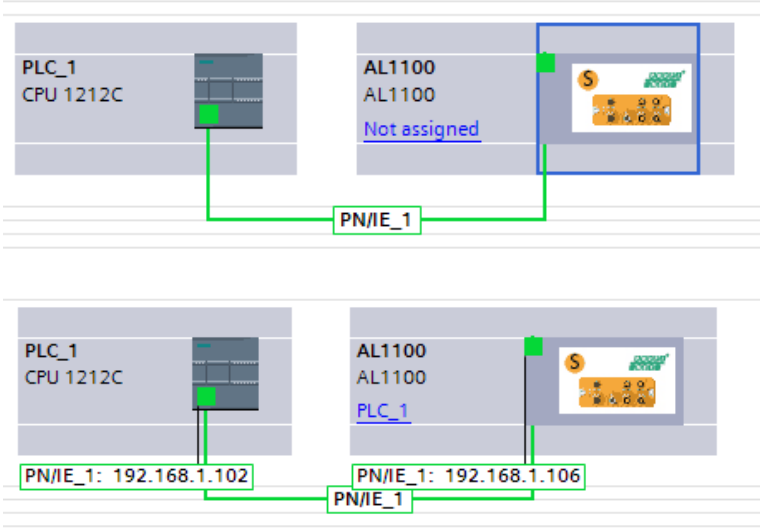
## Step 2.3:

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




## Step 2.4:

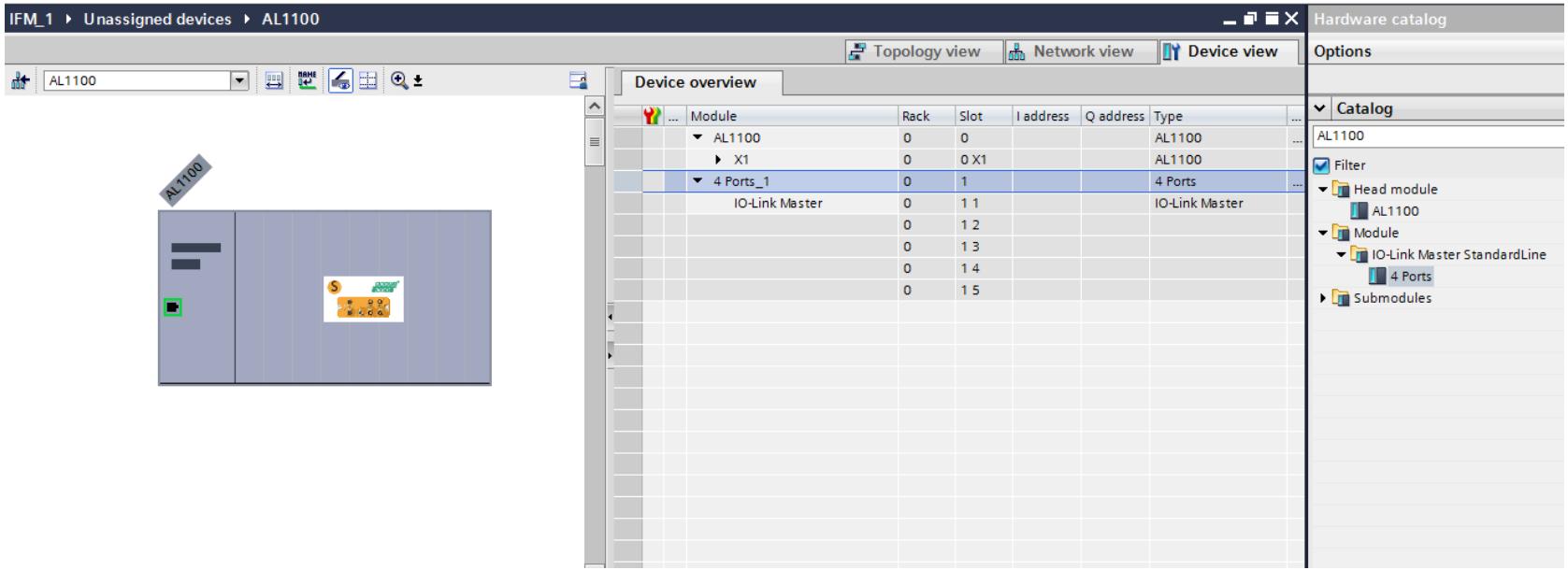
Assign the PROFINET name
Right Click – Assign Profinet name



# Starter kit IO-Link master

## Step 2.5:

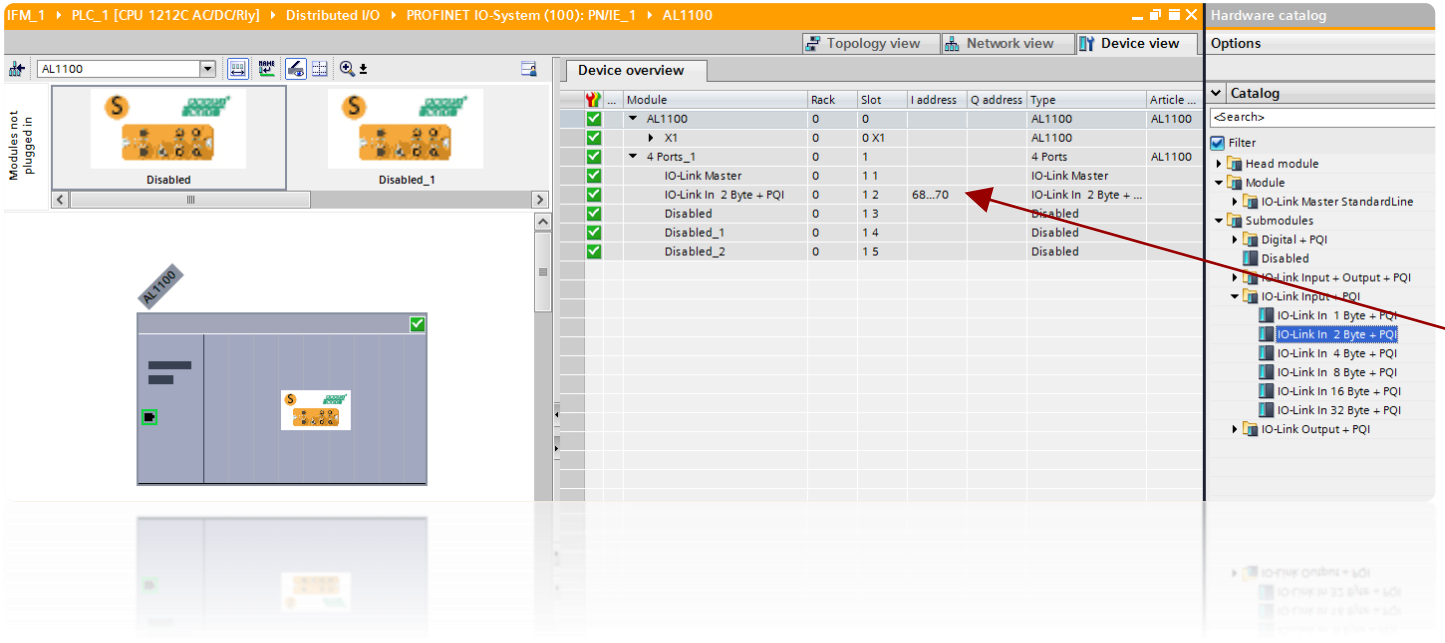
Double click the AL100 in networks and drag the modules in ‘Device Overview’



# Starter kit IO-Link master with Siemens S7-1200

## Step 2.6:

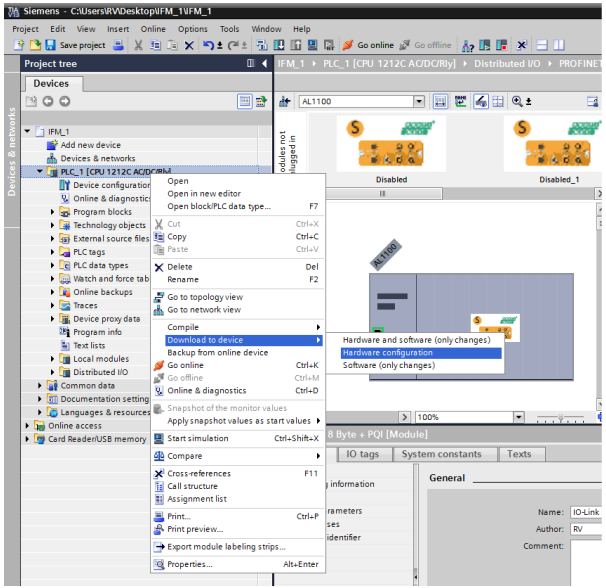
Double click the AL100 in networks and drag the modules (2 Byte + PQI) in 'Device Overview'. You will get Input address Automatically




# Starter kit IO-Link master with Siemens S7-1200

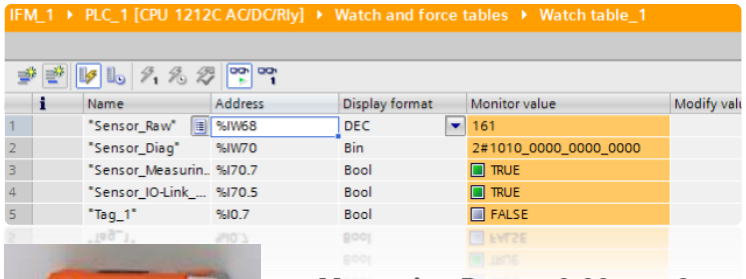
## Step 3.0:

Download the Hardware Configuration to PLC




## Step 3.1:

Go Online and start monitoring the values from Sensor



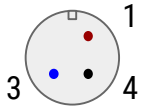

| | Name | Address | Display format | Monitor value |
|---|---|---|---|---|
| 1 | "Sensor_Raw" | %IW68 | DEC | 161 |
| 2 | "Sensor_Diag" | %IW70 | Bin | 2#1010_0000_0000_0000 |
| 3 | "Sensor_Measurin.. | %I70.7 | Bool | TRUE |
| 4 | "Sensor_IO-Link_... | %I70.5 | Bool | TRUE |
| 5 | "Tag_1" | %I0.7 | 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

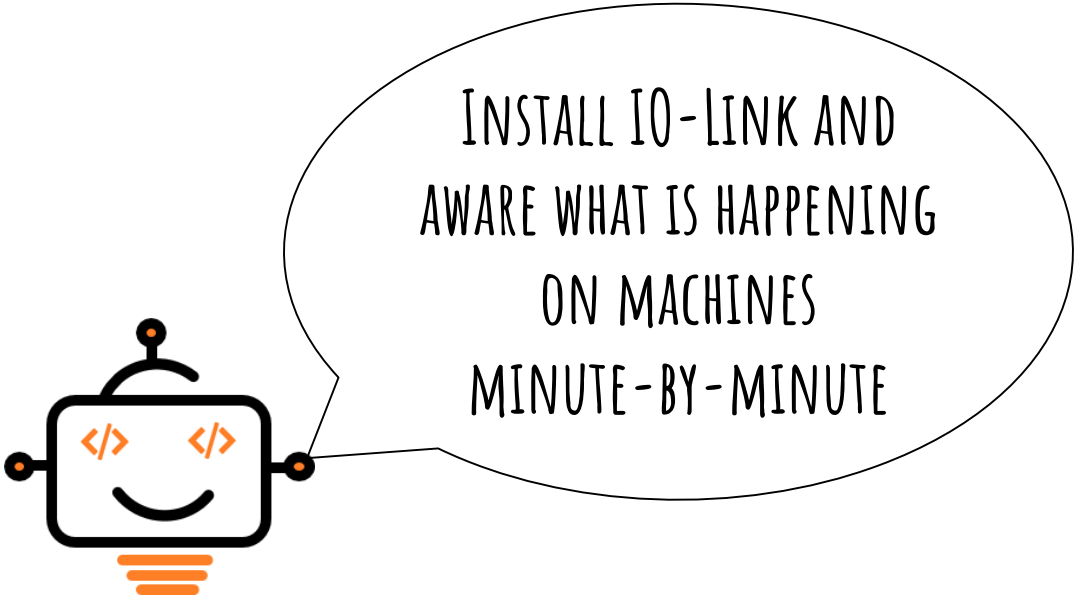
ON
Output in Decimal Value = 1600

**200 cm**
maximum range

ON
Output in Decimal Value = 3200

**SDCI**

The single-drop digital communication interface technology




**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*