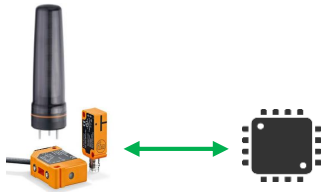
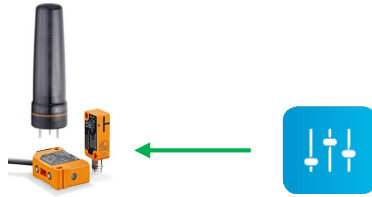


# What is IO-Link?

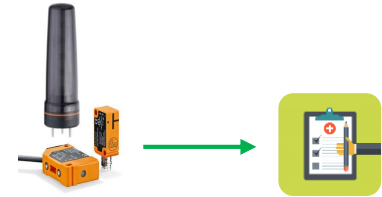
IO-Link is the first standardised IO technology worldwide (**IEC 61131-9**) for the communication with sensors and actuators.



Point-to-point  
communication link

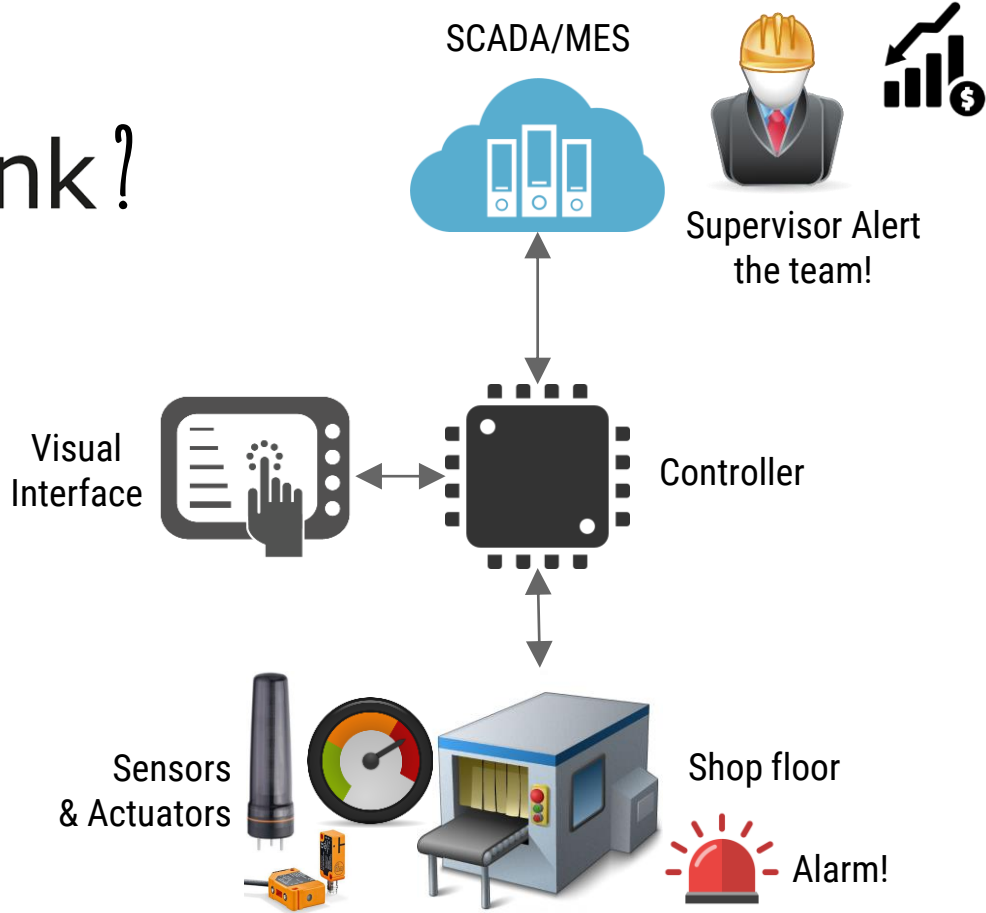


Transfer of parameters  
via PROFINET while the  
sensor/actuator is operational

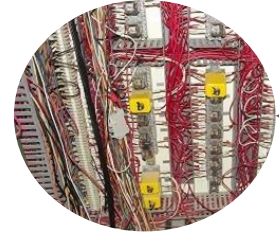


Access Diagnostic information  
in real time

# Without IO-Link?



Large Breakdown in troubleshooting



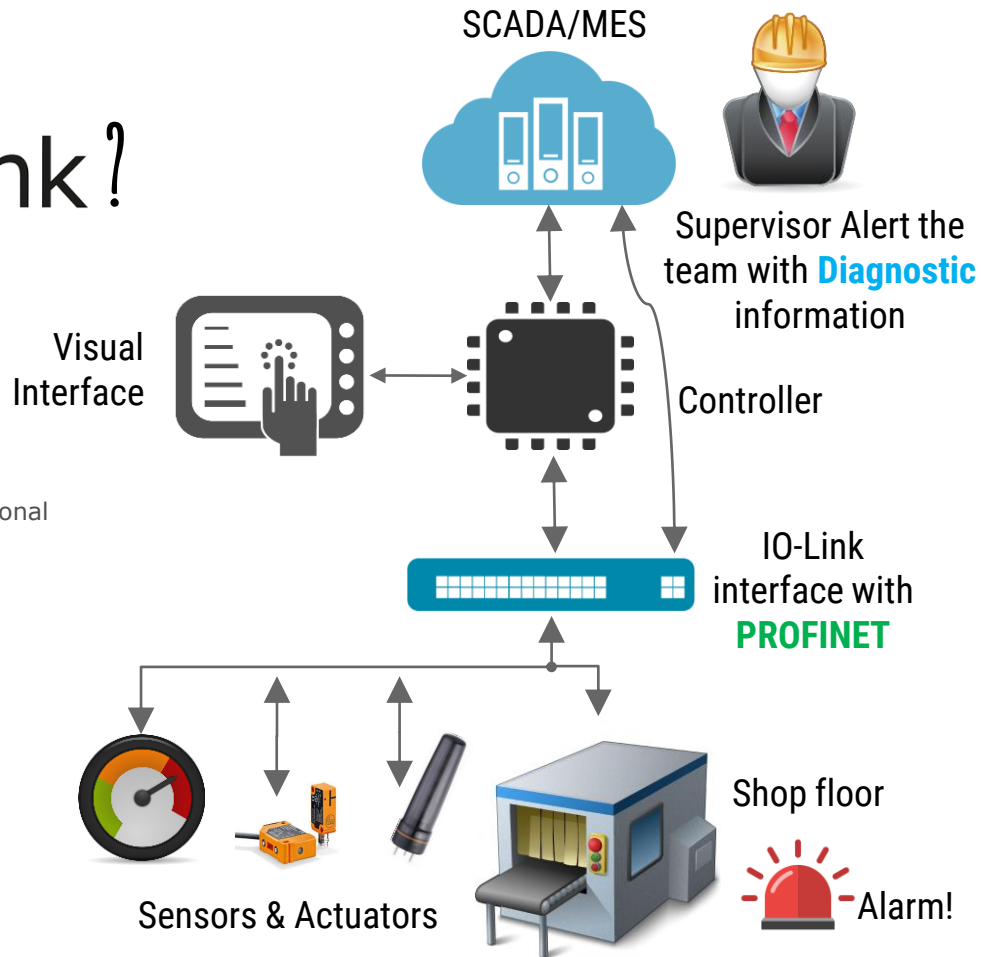
? ? ?



Some sensor/Actuator malfunctioning!

# With IO-Link?

- ✔ Point-to-point communication link
- ✔ Access Diagnostic information in real time
- ✔ Transfer of parameters via PROFINET while the sensor/actuator is operational



All Sensor/Actuator information can be accessed via Ethernet

3 wire sensor and actuator connection, Easy to troubleshoot



Some sensor/Actuator malfunctioning!

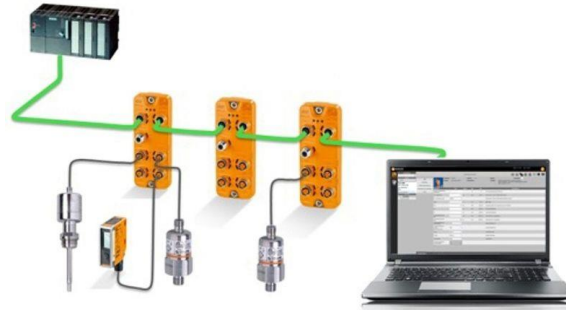
# More benefits

## IO-Link



### Flexible wiring

Easy and Compatible with  
M5, M8 and M12  
connectors



### Fast Data processing

It is capable of processing binary switching signals and analogue values (e.g. 8 bits, 12 bits, 16 bits)  
The transmission between IO-Link master and device takes 400  $\mu$ s at a speed of 230 kBaud.



### Easy Parametrization

The parameter can be directly set via the controller. No need to set the sensor once installed on the machine/assembly line

Read more information at <http://www.io-link.com>

# IO-Link System





# Starter kit IO-Link master

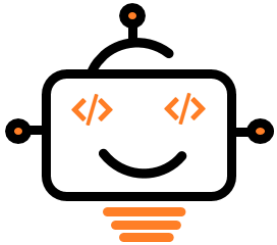


## This kit includes:

- 4-port IO-Link master with PROFINET interface
- 230V/24V plug-in power supply
- LR DEVICE (USB stick) IO-Link parameter setting software
- Photoelectric IO-Link distance sensor
- Ethernet cable M12/RJ45, 0.5 m
- Sensor cable M12/M12, 0.6 m

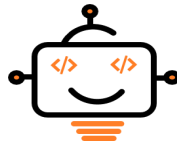
## In this video we will see:

- What does the Starter Kit includes?
- How to link the various components in Starter Kit?
- Reading sensor value with and without IO-Link.





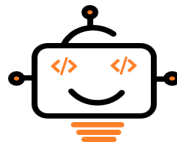
# Starter kit IO-Link master





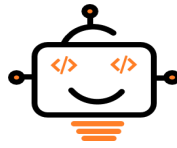


# Connecting Starter kit IO-Link master





# Sensor without IO-Link master



Name	Address	Display format	Monitor value	Modify value	Comment
*Sensor_Raw	%IW68	DEC	0		
*Sensor_Diag	%IW70	Bin	2=0000_0000_0000_0000		
*Sensor_Measurin...	%I70.7	Bool	<input type="checkbox"/> FALSE		
*Sensor_IO-Link...	%I70.5	Bool	<input type="checkbox"/> FALSE		
*Tag_1*	%I0.7	Bool	<input checked="" type="checkbox"/> TRUE		

RT Simulator

SIEMENS SIMATIC HMI

4 cm 200 cm

Object in range  
 Object not in range

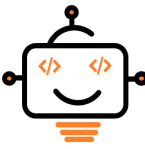
www.codeandcompile.com

F1 F2 F3 F4

Number of tags used: 9. 11:25:34 PM  
Number of PowerTags used: 9. 11:25:34 PM  
55412 bytes used for fonts. 11:25:34 PM  
Software compilation completed (device version: 13.0.1.0). 11:25:34 PM  
Compiling completed (errors: 0; warnings: 0) 11:25:34 PM



# Sensor with Starter kit IO-Link master



Totally Integrated Automation PORTAL

1 PLC\_1 [CPU 1212C AGDQRly] Watch and force tables Watch table\_1

Name	Address	Display format	Monitor value	Modify value	Comment
"Sensor_Raw"	%IW68	DEC	129		
"Sensor_Diag"	%IW70	Bin	2#1010_0000_0000_0000		
"Sensor_Measurin.."	%I70.7	Bool	<input checked="" type="checkbox"/> TRUE		
"Sensor_IO-Link_.."	%I70.5	Bool	<input checked="" type="checkbox"/> TRUE		
"Tag_1"	%I0.7	Bool	<input type="checkbox"/> FALSE		

RT Simulator

SIEMENS SIMATIC HMI

**IO-Link**  
Connected

4 cm 200 cm

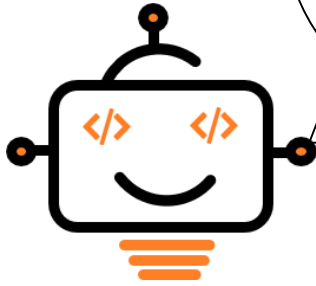
Raw Value: 129 Min. Range: 10  
8 cm Max. Range: 20

Valid Output  Object in range  Object not in range

www.codeandcompile.com

F1 F2 F3 F4

Software compilation started. 11:34:00 PM  
Number of tags used: 9. 11:34:04 PM  
Number of PowerTags used: 9. 11:34:04 PM  
55412 bytes used for fonts. 11:34:04 PM

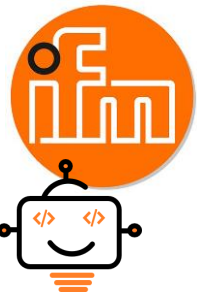


INSTALL IO-LINK AND  
AWARE WHAT IS HAPPENING  
ON MACHINES  
MINUTE-BY-MINUTE

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*



# Starter kit IO-Link master



**In the next video you will see:**

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