

 **Leuze electronic**

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the **sensor** people

**The economical solution**  
for continuous communication  
in automation



## Smooth communication from the specialists.

### Connectivity from Leuze electronic offers the best solutions.

Leuze electronic has been the driving force behind the standardisation of industrial interface design for decades. With the necessary foresight, extensive know-how acquired through research and development and experience in application solutions onsite, Leuze electronic offers you the best qualifications in connectivity.

#### **Connectivity** from Leuze electronic. **IO-Link** from Leuze electronic.

The uncomplicated connection to globally used fieldbus systems is one of the core competencies of the engineers from Leuze electronic. This know-how in connectivity offers assurance for receiving solutions which are always efficient, practical as well as ready for the future.

In automation, sensors and actuators in the lowest communication level have long been intelligent and capable of providing a broad range of information. But despite the diversity of available configurations and interface technologies, what has been missing has been an economical solution to address the issue of continuous communication down to the lowest field level. IO-Link will provide a uniform interface which, in addition to the process data, will also make diagnostic and parameter data usable.



# Fully utilise the performance of intelligent sensors. Continuous communication with **IO-Link**.

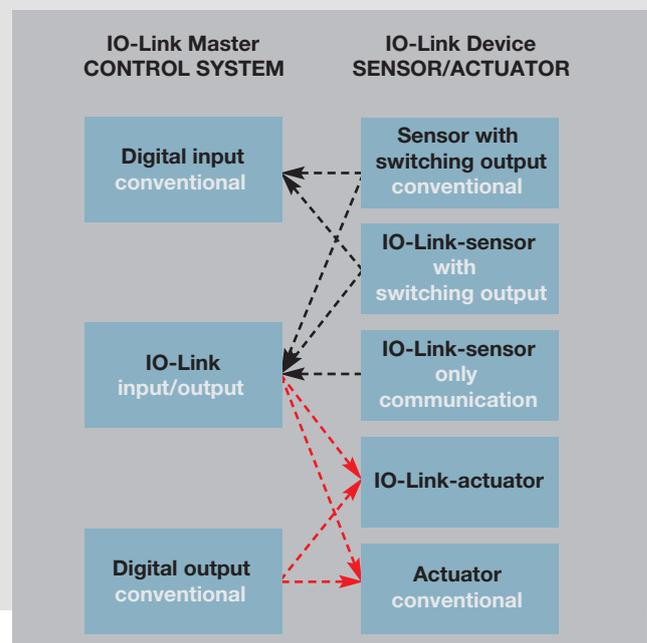
## Clear advantages with IO-Link.

### ■ Top system performance

With IO-Link and intelligent sensors as IO-Link devices, additional information such as diagnostics, error detection and analysis or messages regarding temperatures, soiling and much more can be called up directly.

### ■ Investment security through backwards compatibility.

IO-Link can be used with all previous PNP sensors with full performance. This means investment security through the use of all previous sensor functions. Thus, IO-Link devices can be used individually if needed. It is not necessary to utilise only IO-Link devices, as the sensors currently installed can be used with full function on the IO-Link master. (graphic below)





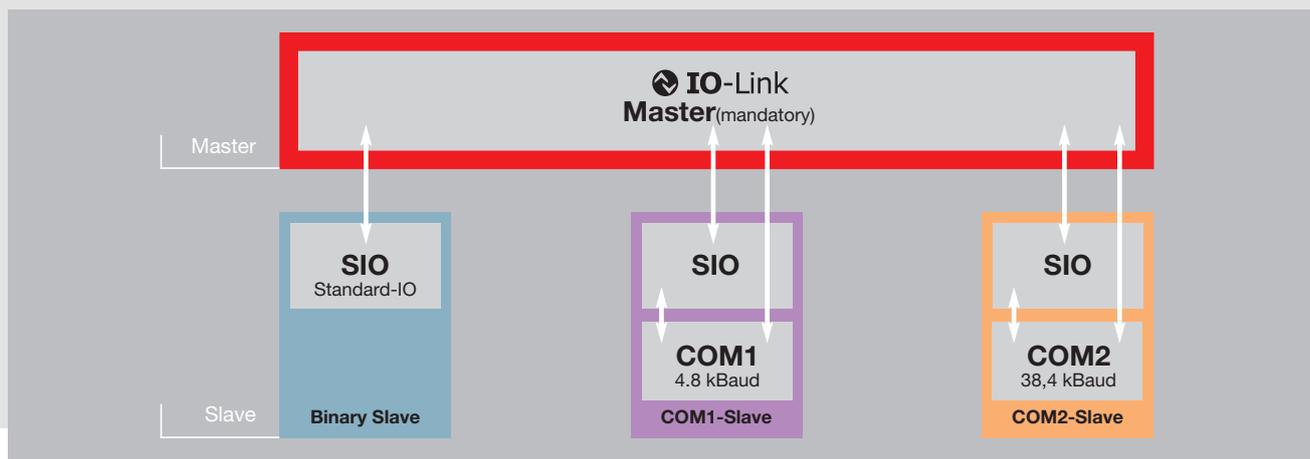
## Why IO-Link?

With the customary "standard" IO wiring currently used in binary switching sensors, additional information supplied by the sensor, such as messages regarding soiling, cannot be transmitted to the control. Communication solutions which require additional wiring and interfaces are cost intensive and unidirectional, i.e. the control cannot transmit parameter sets to the sensor. Configuration is performed while the machine is at a standstill, usually via proprietary interfaces using a device such as a laptop, and often require the use of special plugs and special cables.

## IO-Link is the solution.

The IO-Link interface, which was designed in cooperation with leading manufacturers of sensors, drive technology and control technology, is based on conventional standard parallel wiring. It is used as a serial, bidirectional communication interface for the point-to-point connection with a single master and a single device. Using proven 3-wire technology, all previously used PNP sensors can be connected to the IO-Link interface. In addition to the currently available switching output with real-time capability, serial parameter-, diagnostic- and process communication with 4.8 kBaud (COM1) or with 38.4 kBaud (COM2) is also possible. Thus, data can be exchanged bidirectionally across all control levels. This facilitates the use of numerous proprietary serial, analogue and digital interfaces. IO-Link offers a standardised wiring concept with minimal wiring for serial, analogue and digital sensors. (graphic below)

IO-Link communication modes: Com 1 (3-wire technology) communication for low-level sensors and actuators. Com 2 (3-wire technology) for high-performance sensors and actuators.

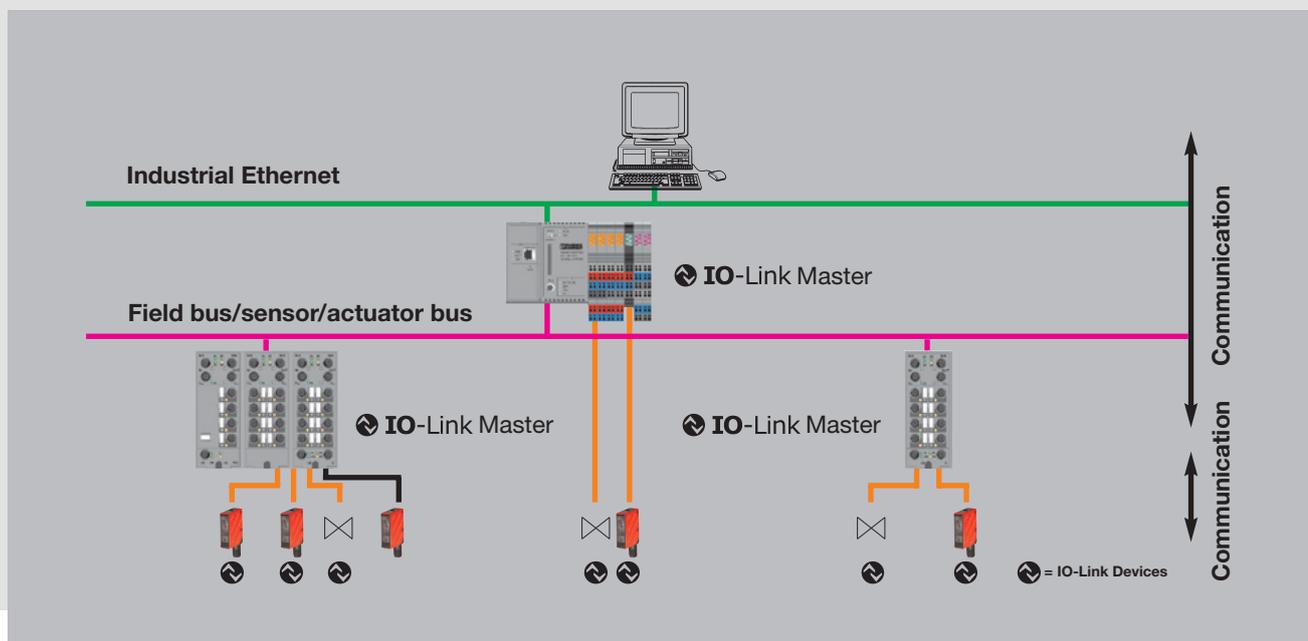




# IO-Link

- **Shorter machine downtimes**  
through differentiated and standardised diagnostics, simplified error location and plant monitoring.
- **Lower project-design and commissioning times**  
through uniform interfaces and integrated configuration. Standard procedures for primary data management reduce setup times and simplify the exchange of sensors.
- **Considerable reduction of installation costs.**  
It is, therefore, no longer necessary to distinguish between these different sensor interfaces when designing the system.
- **No special bus topologies, device addressing or special sensors necessary.**  
IO-Link masters will be available in the form of coupling modules, gateways, PLC/IPC plug-in cards, mini PLCs etc., sensors as IO-Link devices. Connection cables are standard, 3-pin, unshielded sensor lines, oriented toward IEC 60947-5-2.

With IO-Link, continuous communication down to the sensor/actuator level.



## **Optical Electronic Sensors**

Cubic Series  
Cylindrical Sensors, Mini Photoelectric Sensors, Fibre Optic Amplifiers  
Measuring Sensors  
Special Sensors  
Light Curtains  
Forked Sensors  
Double Sheet Testing Unit, Splice Detection  
Accessories

## **Identification Systems**

### **Data Transmission Systems**

### **Distance Measurement**

Barcode Readers  
RF IDent Systems  
Modular Connector Units  
Industrial Image Processing Systems  
Optical Data Transmission Systems  
Optical Distance Measurement/Positioning  
Hand-Held Readers

## **Safety Sensors**

### **Safety Systems**

### **Safety Services**

Safety Laser Scanners  
Safety Light Curtains  
Transceivers and Multi Light Beam Safety Devices  
Single Light Beam Safety Devices  
AS-i-Safety Product Range  
Safety Sensor Technology for PROFIBUS DP  
Safety Switches and Safety Locking Devices  
Safety Relays and Safety Interfaces  
Sensor Accessories and Signal Devices  
Safety Engineering Software  
Machine Safety Services

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