HYDAC INTERNATIONAL

IO-Link products: Sensors and more

IO-Link

EN 18.131.0/10.17

IO-Link –
Digital communication interface as a basis for Industry 4.0

In the course of the progressive automation and linking of industrial machines IO-Link was specified already in 2006 as a standardised digital interface for actuator and sensor levels. This allows for a simple and cost-effective connection to controls and higher-level bus systems and networks.

The international standard IEC 61131-9 laid the foundation for worldwide use in 2012.

IO-Link is not a fieldbus, but a digital point-to-point connection. Just as in conventional analogue connection technology, one cable leads from every sensor or actuator (e.g. valve) to a so-called master (data collector), from which the data is transmitted to other participants (e.g. controls) in the company network. The use of cost-effective, unshielded standard cables and established connection technology (4 or 5-pin M12 plugs) allows for a migration into the digital world with minimal effort.

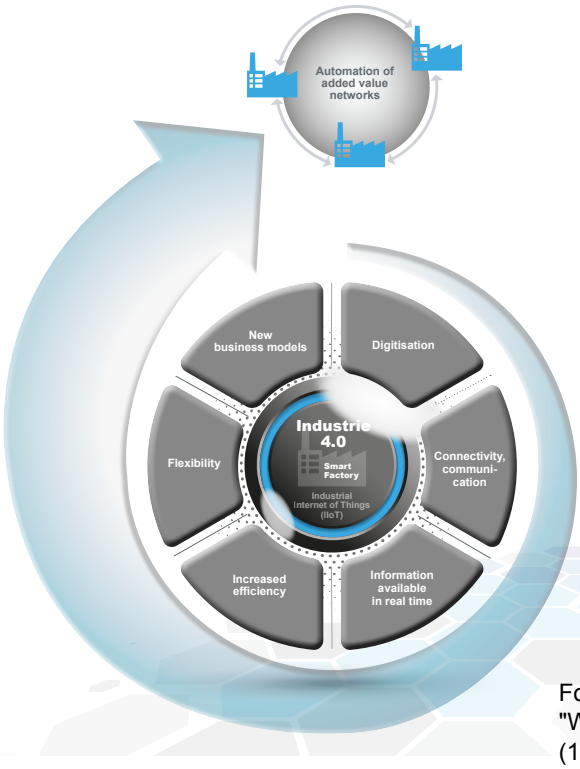
Unlike with previous analogue systems, the digital IO-Link communication protocol enables for the transfer of information in addition to the process data, such as value status (validity of the process data) and events (error messages) as well as device information (ID, parameters, diagnosis etc.).

The bi-directionality of the data connection is a particular advantage of IO-Link technology. Unlike standard analogue technology or switch connections, where the information only flows in one direction, higher-level controls can communicate bidirectionally with the sensor or actuator thanks to IO-Link.

Settings which e.g. need to be performed manually by means of buttons in conventional pressure switches, can now be carried out from the control via IO-Link, as part of the start-up or even during ongoing operation.

This remote parameterisation considerably accelerates and simplifies the commisioning of systems and helps to minimise error sources and reduce costs. Especially in maintenance, an IO-Link device can be replaced via plug and play, as the configuration parameters are automatically transferred from the control to the new device, which also eliminates a significant error source and reduces machine downtimes to a necessary minimum.

Thanks to these enhancements of flexibility, components with an IO-Link interface are an integral component in the Internet of Things within the framework of Smart Factory solutions in the age of Industry 4.0.



For more information please see the flyer "With HYDAC on the way to Industry 4.0" (10.159.0/03.17)

AS 1000
Aqua Sensor

- 2 measured variables
- Temperature & humidity
- Additional output D/A can be set

AS 3000
Aqua Sensor

- 2 measured variables
- Temperature & humidity
- Rotatable display
- Operating buttons
- Additional output D/A can be set

EDS 824
Pressure Sensor

- Mini sensor
- LEDs
- Additional switching output

ENS 3000
Capacitive Level Sensor

- 2 measured variables
- Fluid level & temperature
- Rotatable display
- Operating buttons
- No moving parts
- Additional output D/A can be set

HLB 1400
Oil Condition Sensor

- 4 measured variables
- Temperature
- Humidity
- Electrical conductivity
- Permittivity
- Additional output D/A can be set

HDA 4000
Pressure Sensor

- Compact
- Solid design
- Up to 2000 bar

ETS 3000
Temperature Sensor

- Rotatable display
- Operating buttons
- Additional output D/A can be set

HNS 3000
Level Sensor

- 2 measured variables
- Fluid level & temperature
- Rotatable display
- Operating buttons
- Float
- Additional output D/A can be set

EDS 3000
Pressure Sensor

- Rotatable display
- Operating buttons
- Additional output D/A can be set

EDS 724
Pressure Sensor

- Ultra compact
- SW 19
- Full metal housing
- Additional output D/A can be set

HLT 2500
Linear Position Sensor

- External installation
- Robust

ERP

Company level

MES

Operational level

PLC

Control level

Remote I/O
IO Link Master

Field level

IO LINK DEVICE
binary/analogue sensors/actuators

Sensor/ actuator level

Use IO-Link
Universal · Smart · Easy

- Digital
- Bidirectional
- Remote parameterisation

PLATTFORM INDUSTRIE 4.0

HPT 500
Differential Pressure Sensor

- Δp for filter monitoring
- Smart filter
- Predictive Maintenance

P_0- Accumulator
Pressure Sensor

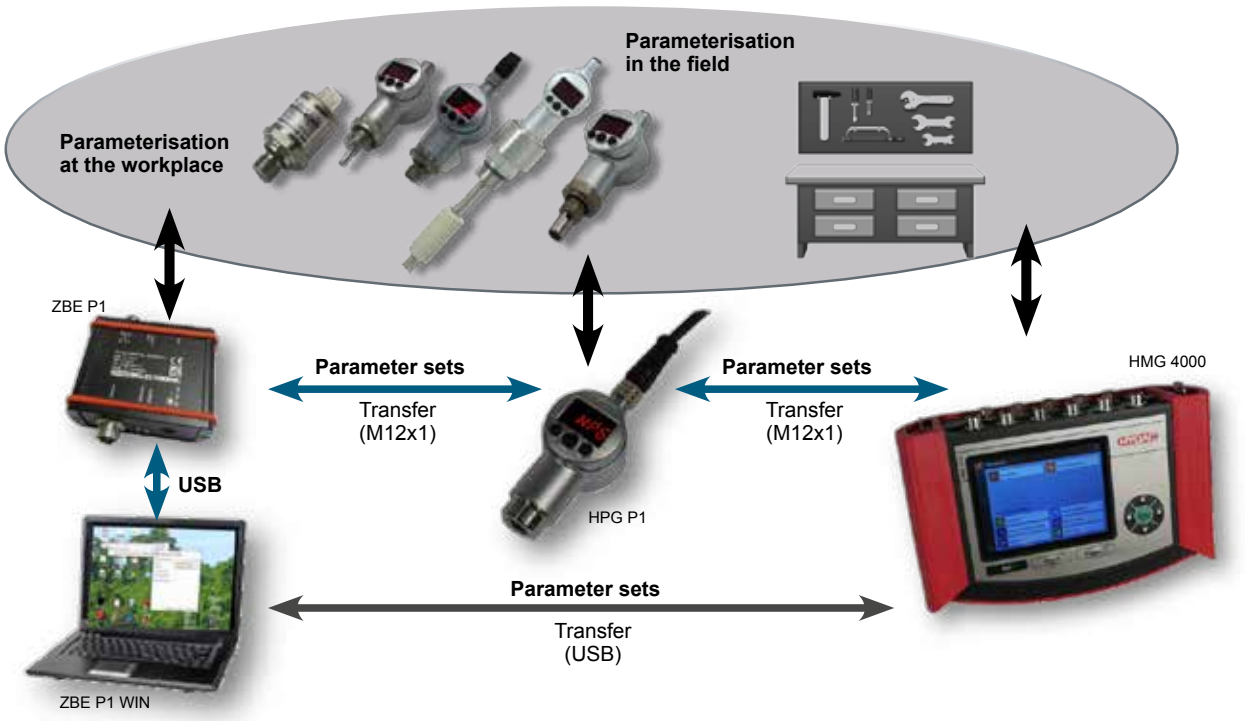
- Smart accumulator
- Oil and gas pressure monitoring
- Predictive Maintenance

CX Valve Electronics
Control Electronics

- Reduction of water hammer and pressure surge
- Position monitoring
- Reduction of holding current
- Energy saving
- Retrofittable

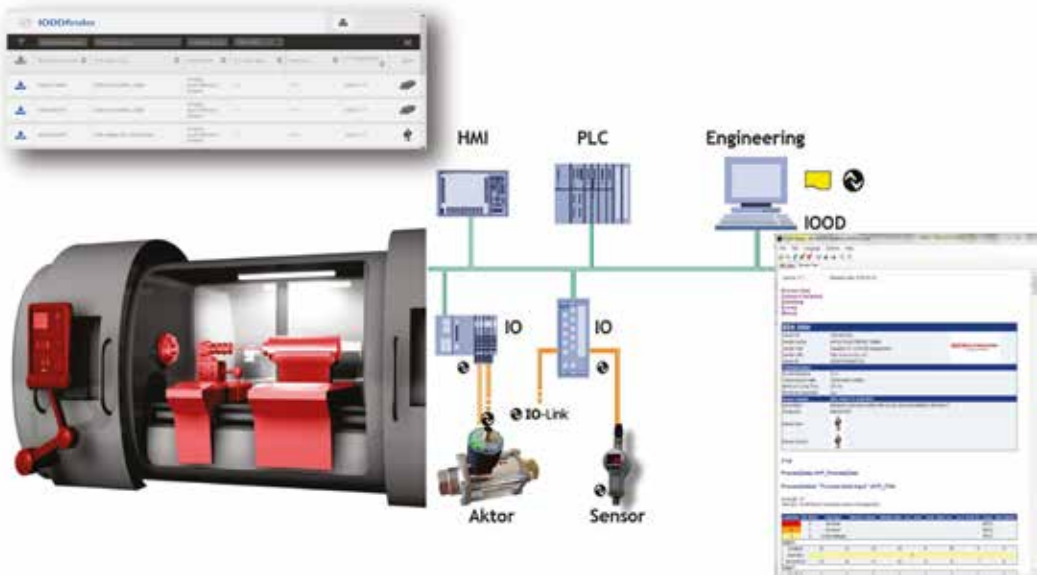
X-efficiency

Flexible sensor parameterisation and data management



HYDAC Electronic offers various additional tools and options for its IO Link sensors to conveniently create parameter sets offline at your work place and to transfer these to the relevant fields.

IODD File: IO-Link device description for PLC



"IODD" stands for "IO Device Description". The IODD for the IO-Link Device is similar to a printer driver in a PC.
It provides the information required for the system planner and the control for the parameterisation of the relevant IO-Link components.
The file is supplied with any IO-Link device and is also available for download from "IODDfinder" (http://ioddfinder.io-link.com/#/).

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