

IO-Link Master Innovation

IIoT Ethernet Master

The digitalisation and automation of industrial production is progressing. Making an innovative step, nass magnet, as an expert in modular and compact electromagnetic components, presents the new 4-port Ethernet IO-Link Master, focused on Industry 4.0 and IIoT, implemented in a new designed housing.

Connected sensors and actuators can be remotely controlled and monitored via the network using the Ethernet TCP/IP interface.

Using IIoT Master, data from sensors and actuators can be easily collected and transmitted to the IT/Cloud level, where the incoming information can be evaluated and stored.

Use  **IO-Link**
Universal · Smart · Easy



IIoT Ready

Ethernet IO-Link Master

Quick and simple
M12 connection

In order to speed up conventional cable installation, IO-Link connectors from nass magnet are marketed with a pre-assembled M12 connector. Due to M12 connector it can now be easily connected to a control unit or to a master, thus completely eliminating the need for on-site cable assembly.

Remote setup
Easy parameter setting

Setting up new field devices is always a challenging task. With the IIoT Ethernet Master all settings can be done remotely - eliminating the manual procedure.

Plug'n'Play
Advantages / Benefits

- State-of-the-Art Web GUI interface
- Direct device access over Ethernet without industrial Fieldbus and PLC
- Easy Node-RED integration
- Harmonised with the latest IO-Link standards
- Cost effective design

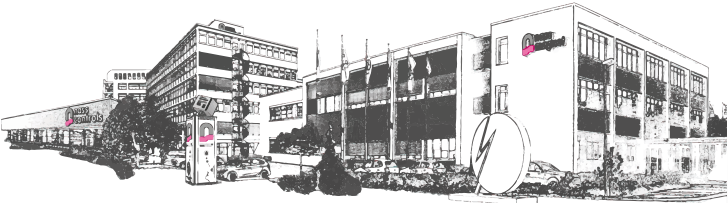
State-of-the-art-technology
Features

- IO-Link V1.1.3 compatible Master
- Ethernet/TCP-IP interface
- DHCP (Dynamic Host Configuration Protocol) or static IP address configuration
- Standardized JSON mapping
- Node-RED integration supported
- 4 independent powered IO-Link Class A ports
- IP67 Protection

Overview
Technical data

Operating voltage	24 V DC (20-30 V DC)
Interface	Ethernet
Protocol	TCP/IP, HTTP, JSON, MQTT
Number of ports	4 x M12 - IO-Link
Max. input / output	Programmable 8 / 4
IO-Link Master port type	Class A / COM 1, COM 2, COM 3
Output power	500 mA / port
Output power - Total max.	2A
IP-Rating	IP 65/67
Housing material	PA6 GF20 FR
Ambient temperature	- 20 to + 60 °C

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Internationally known for the development and production of electromagnetic pilot valves and valves for air, neutral gases, liquids and other media as well as electromagnetic actuators for valves in the field of mobile applications. Our products are used in the automotive industry, for medical and agricultural engineering, industrial pneumatics, supply and process technology as well as machine building.

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The Smart Connector
Digital valve control
with IO-Link communication



**Modular
and compact
electromagnetic
components**

Valve connector innovation

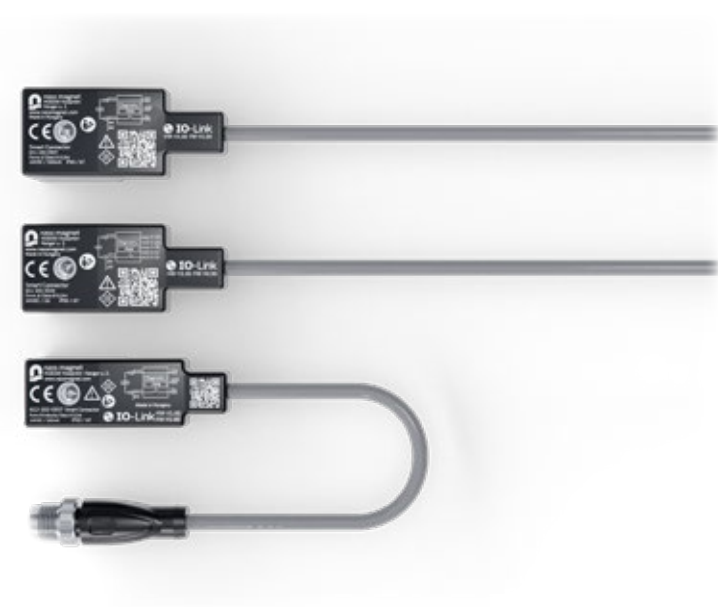
Smart Connector

According to the digitization of the „last meters“ in the automation technology, *nass magnet* as an expert in pneumatic valve actuators presents the innovative valve driver with IO-Link interface, implemented in a DIN interface connector.

Connected valves can be remotely controlled and monitored via the network using this peer-to-peer interface.

Using a master, diagnostic data for the connector, solenoid coil and valve system can be retrieved, monitored and connected to **cloud-based** systems.

For use in extreme environmental conditions *nass magnet* also offers highly robust versions of the smart connector in the protection classes IP65/IP67.



Innovation in the valve connectors

Industry 4.0

Preventive maintenance

To monitor the product lifecycle, the smart connector can **detect and store** switching cycles. To **observe the whole lifecycle** there is one counter, which can not be restarted. And there is another one which can be set up by the user - just like a counter in your car.

There is a possibility to every counter and to almost every measured parameter to set up a limit. **In case of reaching this threshold an automatic event can be generated** to handle them in higher levels.

Thanks to the switching cycle counter in connectors, failures can be prevented and product life cycles analysed.

Condition monitoring

Diagnostic data

The IO-Link connector has numerous diagnostic data:

- Coil condition
- Valve malfunction
- Supply voltage
- Output current
- Load resistance
- Power consumption of the solenoid coil
- Temperature
- Switch-on time of the valve

Power-saving

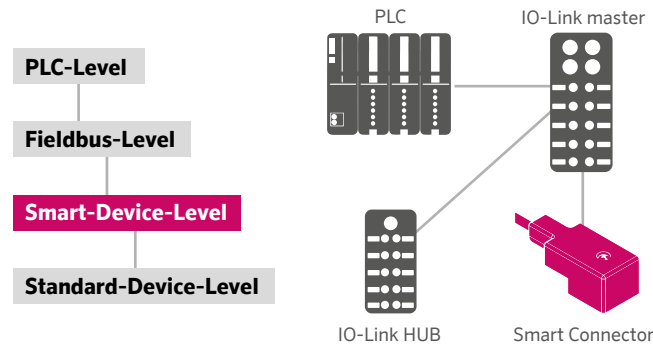
PWM mode

To **reduce the power consumption** of the connected solenoid coil, smart connector offers PWM mode. The Pulse Width Modulation mode allows to regulate the output current.

Pull time can be set up to maximum 2.000 milliseconds to ensure the perfect pull-in of the valve. In this phase the coil receives the full power. After pull time, the PWM mode is activated.

The required power reduction can be achieved by adjusting the duty cycle parameter. The PWM operation works also in Standard* mode.

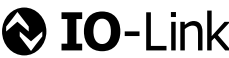
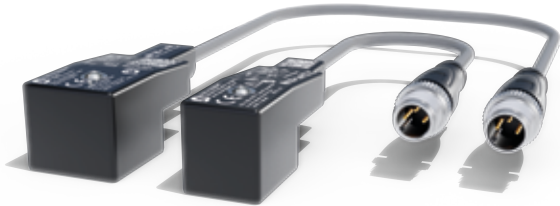
*without using IO-Link communication



PNEUMATICS

Form A and Form B Industry - IO-Link CLASS A

Upgrading your actuators – Smart Connector is the easiest way to add monitoring and diagnostic functions to existing solenoid coils and valves **for a wide range of pneumatic applications.**



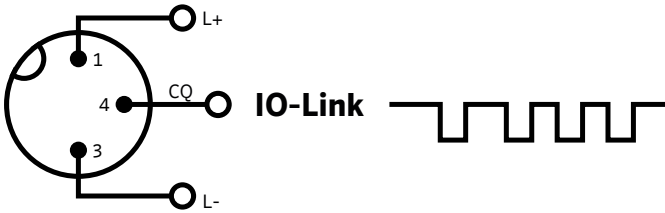
Overview

Technical data

Series	Form A / Form B Industry
Connection	M12-connector (3-pin)
IO-Link master port type	Class A
Nominal voltage	24 V DC (18-30 V DC)
Output current	max. 500 mA (depending on the master)
Output power	max. 12 W (depending on the master)
Internal consumption	< 10 mA
Interface	IO-Link V1.1
Cycle time	2.8 ms
Process data	1/1 byte

Pin layout

Pin 1 - 24 V
Pin 3 - 0 V
Pin 4 - C/Q (IO-Link communication / switching signal)



PORT CLASS A (Form A)

HYDRAULICS

Form A - IO-Link CLASS B

Increased power – allowing to operate hydraulic coils or valves with higher power consumption.

Safety function – with external power supply, a manual override function is also available, making it suitable for integration into safety circuits.

Retrofit function – condition monitoring functions are available without affecting the existing control system.



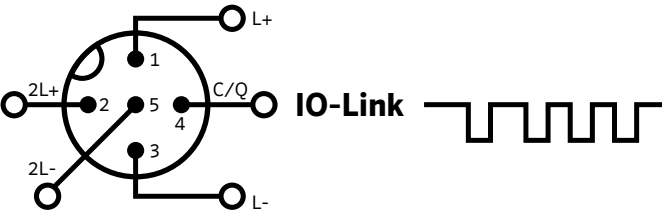
Overview

Technical data

Series	Form A according to DIN EN 175301-803
Connection	M12-connector (5-pin)
IO-Link master port type	Class B
Nominal voltage	24 V DC (18-30 V DC)
Output current	max. 2 A (depending on the master)
Output power	max. 48 W (depending on the master)
Internal consumption	< 10 mA
Interface	IO-Link V1.1
Cycle time	2.8 ms
Process data	1/1 byte

Pin layout

Pin 1 - 24 V
Pin 2 - 24 V (UA)
Pin 3 - 0 V
Pin 4 - C/Q (IO-Link communication / switching signal)
Pin 5 - 0 V (UA)



PORT CLASS B

