

EASY INTEGRATION,  
PREDICTIVE AND  
DIAGNOSTIC FUNCTIONS

# IO-LINK Directional and Proportional Valves

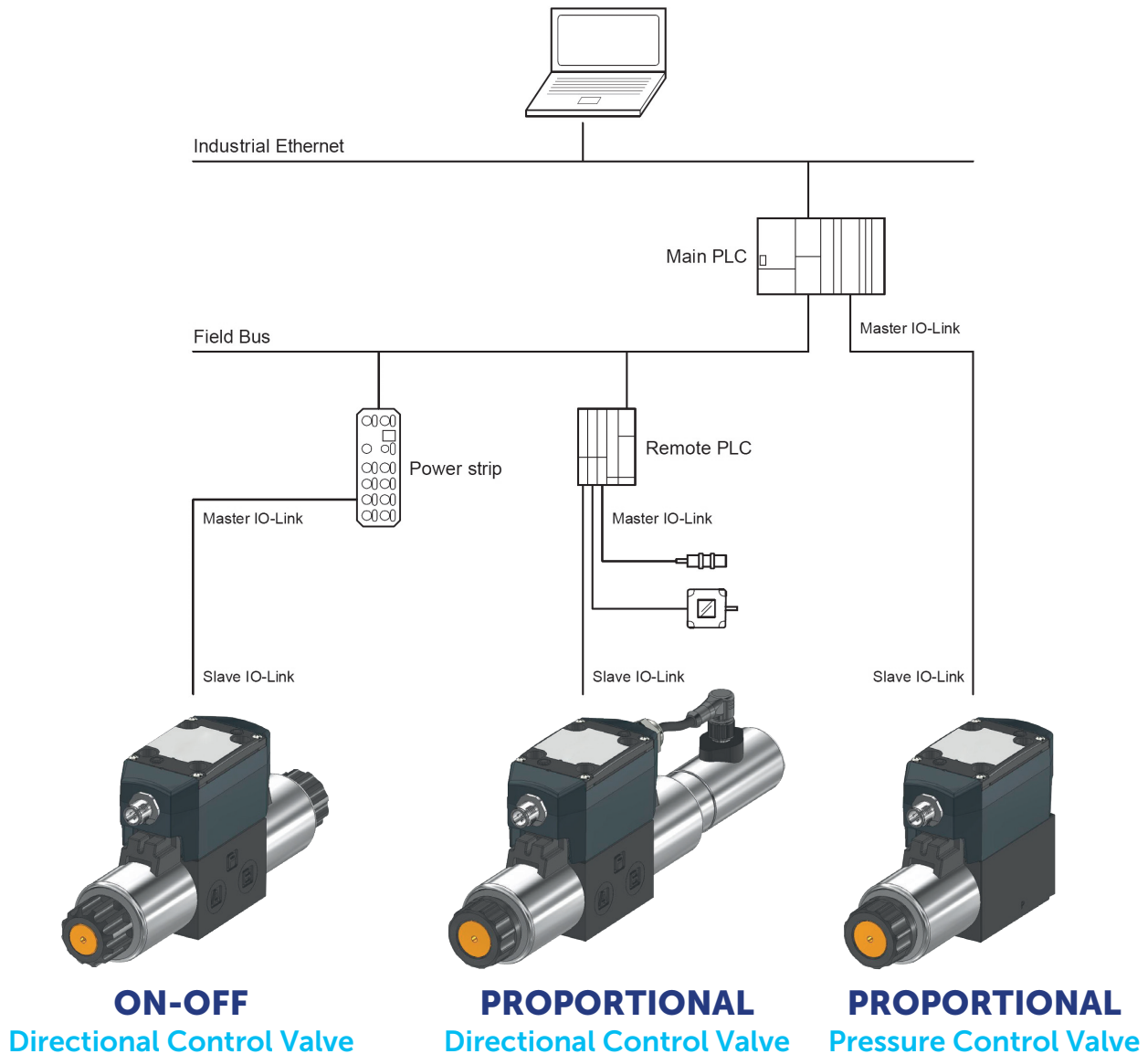
Industry 4.0 has a new partner.

Enabling integration of  
both on-off and  
proportional valves.



# IO-LINK and Hydraulics: On-Off and Proportional Solutions

## IO-LINK SYSTEM with IO-LINK MASTER and IO-LINK DEVICES



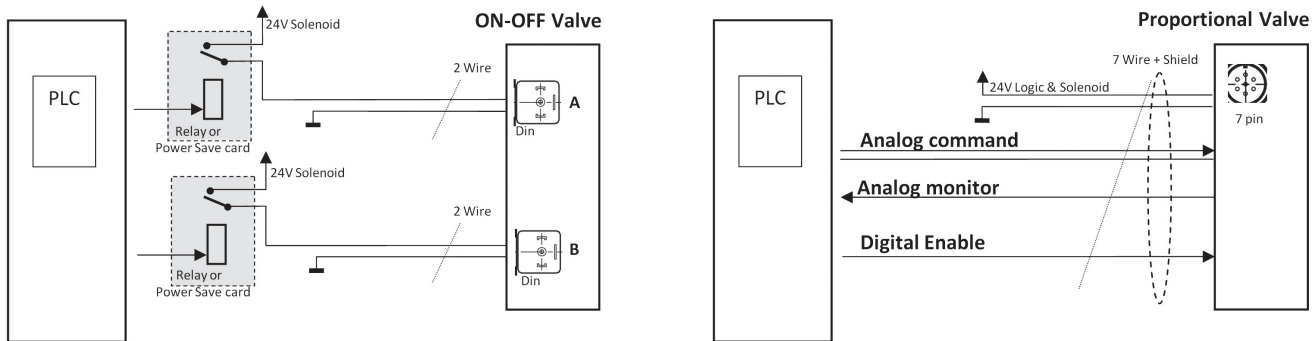
## The PERFECT SOLUTION for INDUSTRY 4.0 and INTERNET of THINGS

IO-LINK solutions enable to integrate either ON-OFF or PROPORTIONAL hydraulic valves into digital communication systems, with reduced engineering effort and minimum hardware requirements. Standard cables and M12 connectors, already in use for actuators and sensors, enable simple and cost-efficient connection of hydraulic valves in the field.

Data availability for predictive maintenance, as well as quick and easy device replacement are also advantages of IO-LINK solutions, which are particularly suitable for cost-competitive applications. IO-LINK solutions foster OEM systems into Industry 4.0 and Internet of Things.

## Traditional solution

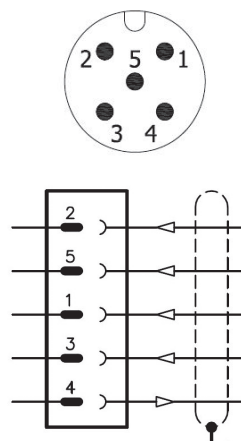
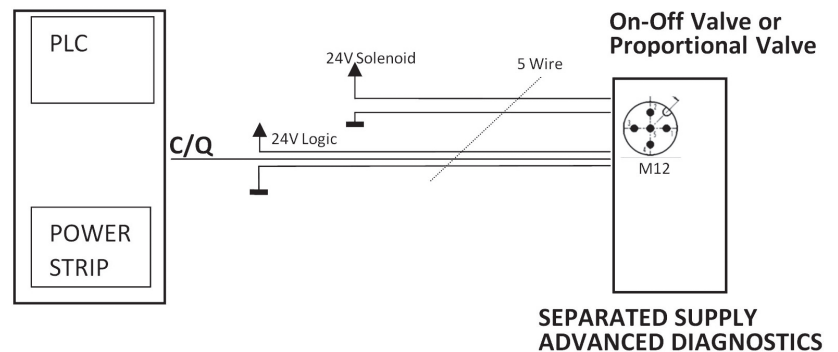
Requires different wiring for each type of valve. In the case of an ON-OFF valve, a power PLC output or a relay must be used. The traditional connection doesn't allow the exchange of diagnostic information with the PLC or the change of the valve's setup parameters.



## IO-Link - Easy integration and diagnostic function

IO-LINK solutions have the same connection for every type of valve; it replaces the traditional wiring of both ON-OFF valves and PROPORTIONAL valves with 7 or 12 pin connectors. IO-LINK valves enable diagnostics and setting adjustments, as required by Industry 4.0.

- IO-LINK is not to be considered as a new communication fieldbus; it is an efficient complement, that can connect the PLC digital output directly to the hydraulic valve
- IO-LINK is a point to point connection between the main or the remote PLC or the IO power strip and any type of hydraulic valve
- The IO-LINK wire connection can be a simple unshielded cable
- IO-LINK allows the use of different supplies for logic and power
- IO-LINK is a full digital connection



**IO-Link connection**  
5-pin M12 A  
(IEC 61076-2-101)

PIN	Values	Function
2	2L+ 12 ÷ 30 V A	Supply of the power stage
5	2L- 0 V (GND)	Internal galvanic isolation from PIN 3
1	1L+ +24 V DC	IO-Link voltage supply
3	1L- 0 V GND	
4	C/Q	IO-Link Communication

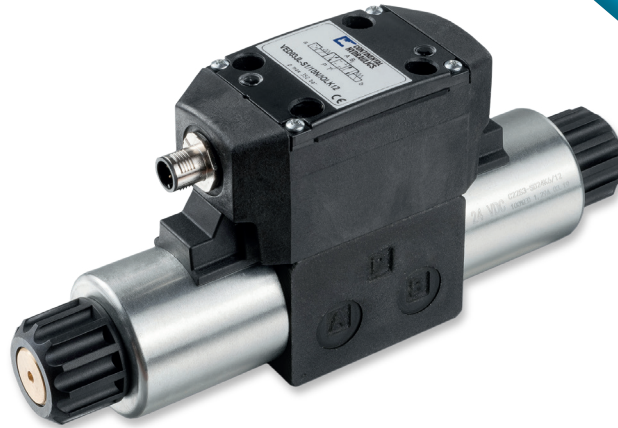


A full set of diagnostic functions are available for the main PLC through the IO-LINK communication. These are some examples of Continentals product range with IO-LINK connection:

## VSD03L

### ON-OFF Directional Control Valves

- Direct operated, with digital integrated electronics and mounting interface in compliance with ISO 4401-03 standards
- **IO-LINK communication**
- Different options are available: soft-shifting, fast-shifting, power-saving; as well as zinc-nickel coating that ensures a salt spray resistance up to 600 hours



## VED03JL

### Proportional Directional Control Valves

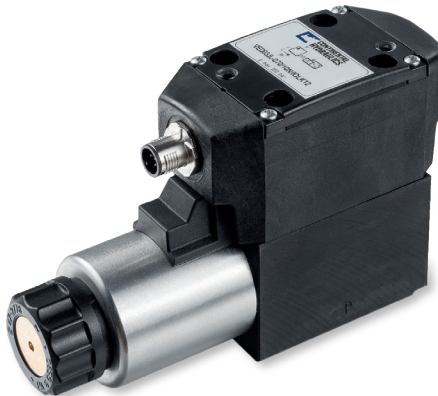
- Direct operated, with digital integrated electronics and LVDT position transducer. Mounting interface in compliance with ISO 4401-03 standards
- **IO-LINK communication**
- They control positioning and speed of hydraulic actuators
- Easy to install



## VER03L

### Proportional Pressure Control Valves

- Direct operated, with digital integrated electronics and mounting interface in compliance with ISO 4401 standards
- **IO-LINK communication**
- Suitable to pilot two-stage valves, for pressure control in hydraulic circuits
- Available in five pressure control ranges, up to 350 bar



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