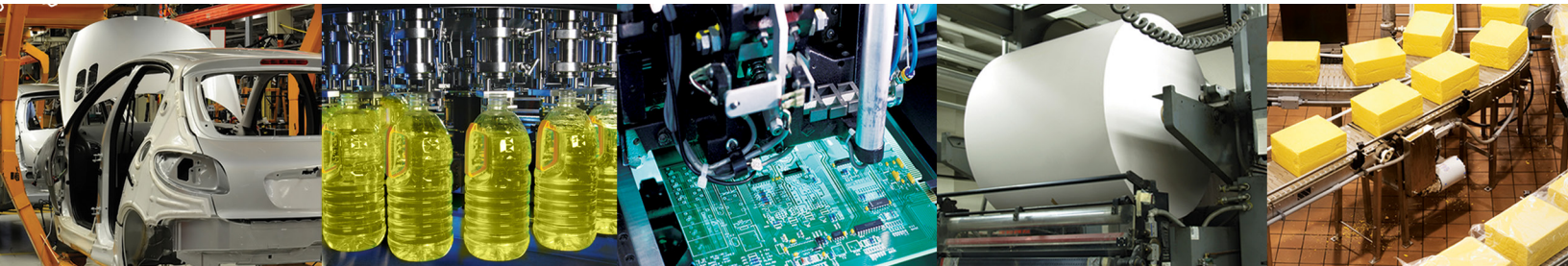


# Sentronic<sup>PLUS</sup> IO-Link CLASS A

Electronic Pressure Regulator

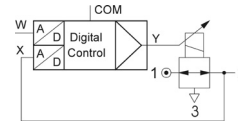
Installation Manual



## Sentronic<sup>PLUS</sup> Electronic Pressure Regulator

Sentronic<sup>PLUS</sup> is a 3-way proportional valve with digital control.

- Direct operated valve
- Dynamic behavior (high speed)
- IO - Link CLASS A Version
- RoHS, REACH compliant



Fluids	Ambient Temperature	Body	Internal Parts	Seals
Air or neutral gas, filtered at 50 μm, condensate-free, lubricated or unlubricated	0 °C to 60 °C (32 °F to 140 °F)	Aluminum	Stainless steel and brass	NBR (nitrile) and FPM (fluoroelastomer)

General Valve Information	
Fluid Temperature	0 °C to 60 °C (32 °F to 140 °F)
Command Signal-IO-Link	<b>PSI Pressure Ranges:</b> PA & PB (50 & 100 psi ranges): in digital steps of 0.01 psi PC (150 psi range): in digital steps of 0.1 psi  <b>Bar Pressure Ranges:</b> 40, 50, 60, V1, V2 & V3 (100mbar, 500mbar, 1bar & all vacuum): in digital steps of 0.0001 bar All others: in digital steps of 0.001 bar
Ports	1/8, 1/4 (NPT or GTap)
Construction	Direct-operated Poppet Valve
Hysteresis	0.5% of span
Linearity/ pressure measurement	± 0.5% of span
Repeatability	± 0.5% of span

Electrical Characteristics						
Nominal Diameter DN (mm)	Voltage *	Max. Power (W)	Max. Current (mA)	Insulation Class	Degree of Protection	Electrical Connection
3	24 VDC = ± 10%	12	500	F	IP65	5-pin M12 connector or 7-pin DIN connector
6	24 VDC = ± 10%	24 <sup>1</sup>	1000 <sup>1</sup>	F	IP65	5-pin M12 connector or 7-pin DIN connector

\* Max. ripple: 10%

<sup>1</sup> For DN6, brass version G or H/1.8A, 44W

Specifications			
Ø Ports	Ø Orifice DN (mm)	Flow	
		C <sub>v</sub> Flow Factor (K <sub>v</sub> Nm <sup>3</sup> /h)	at 6 Bar (l/min - ANR)
1/8 NPT or GTap	3	0.21 (0.18)	210
1/4 NPT or GTap	6	0.70 (0.60)	700

## How to Order

**6 1 4 3 5 7 E 9 0 1 1 PB**

**Control Panel**  
B = IO-LINK with display  
C = IO-Link without display

**Version (ports), Body**  
0 = DN6 (G 1/4), ALU  
4 = DN6 (NPT 1/4), ALU  
7 = DN3 (G 1/8), Brass  
8 = DN6 (G 1/4), Brass  
9 = DN3 (NPT 1/8), Brass  
A = DN6 (NPT 1/4), Brass  
C = DN6 (G 1/4), Stainless Steel

**Command Signal**  
B = IO-LINK CLASS A

**Feedback**  
B = IO-LINK CLASS A

**Options**  
A00 = Dual loop control  
018 = Oxygen clean

**Pressure Range**

Output Pressure (psi)	Max. Inlet Pressure (psi)
40 = 0 – 0.1 bar (1.5)	2 (29)
50 = 0 – 0.5 bar (7.3)	2 (29)
60 = 0 – 1 bar (14.5)	2 (29)
02 = 0 – 2 bar (29)	3 (44)
03 = 0 – 3 bar (44)	8 (116)
PA = 0 – 3.4 bar (50)	8 (116)
05 = 0 – 5 bar (73)	8 (116)
06 = 0 – 6 bar (87)	12 (174)
PB = 0 – 6.9 bar (100)	12 (174)
10 = 0 – 10 bar (145)	12 (174)
PC = 0 – 10.3 bar (150)	12 (174)
12 = 0 – 12 bar (174)	14 (203)

**Digital Output**  
1 = Standard

**Vacuum (relative)**  
V1 = 0 to -1 bar  
Shut-off valve, connects to vacuum on loss of power  
V2 = 0 to -1 bar  
Bypass valve  
V3 = 0 to -1 bar  
Shut-off valve, connects to atmosphere on loss of power

**Absolute Pressure Ranges Available on Request**

## Operating Modes

### Shut-off:

If the setpoint falls below 0.5 %, the coil current is switched off and the valve is fully exhausted.

### Overtemperature:

If the temperature of the internal control electronics exceeds 100°C, the operating mode is switched to AUTOSAFE.

### Undervoltage / overvoltage:

If the supply voltage is less than 18 V or more than 30 V, the coil current is switched off and the valve is fully exhausted.

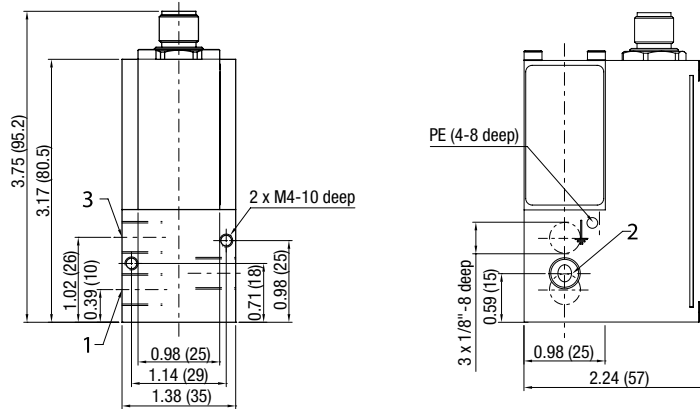
### Autosafe:

If the coil current exceeds a certain value, dependent on the mechanics, for more than 20 seconds, the output current is limited to max. 70% to prevent the valve from overheating.

**Dimensions: Inches (mm), Weight in lbs. (kg)**

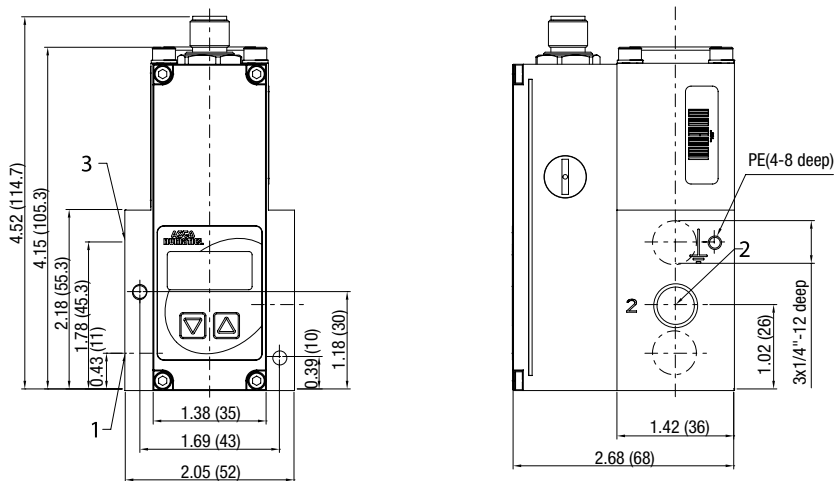
**1/8 NPT or GTap (DN3)**

Weight: 1.21 (0.55)



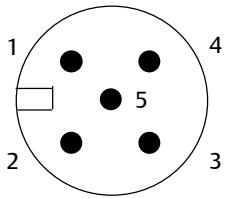
**1/4 NPT or GTap**

Weight: 1.87 (0.85)



A) Thread M5 - depth 10  
 (on opposite side);  
 tapped through-hole  
 for M4 screw.

Connector Pin Out



Pin	Description
1	+24 VDC Supply
2	not connected
3	+0 VDC Common (Supply)
4	C/Q
5	not connected
Body	EMC shield

M12 Class A & B Compatible Cables\* and Accessories



M12 Straight 5 Pin Female Single Ended Cable - Unshielded
TC0505MIE000071P – 5 Meter
TC0510MIE000071P – 10 Meter



M12 Straight 5 Pin Female to Male Double Ended Cable - Unshielded
TC0505MIETA0571P – 5 Meter
TC0510MIETA0571P – 10 Meter



M12 90° 5 Pin Female Single Ended Cable - Unshielded
TD0505MIE000071P – 5 Meter
TD0510MIE000071P – 10 Meter



M12 90° 5 Pin Female to Male Double Ended Cable - Unshielded
TD0505MIETA0571P – 5 Meter
TD0510MIETA0571P – 10 Meter

\*Reference our G3 Fieldbus catalog for M12 4 pin cables if the selected IO-Link® Master does not accept 5 pin cables. Maximum IO-Link cable length is 20m.

## Installation and Operating Instructions

1. Before putting into operation carefully check all electrical connections and the supply voltage (24 VDC  $\pm$ 10 %). Overload can destroy the electronics. Recommended pre-fuse T2.0 A.
2. The electrical connection is made with a round connector M12x1. The connector must meet the requirements of DIN 60079-15.

**WARNING:**

**Do not disconnect the plug while under voltage!**

When disconnected from power, use supplied protection cover to ensure IP protection.

3. Use unshielded or shielded cables for the electrical connection of the valve. The shield, connector and control cabinet must be EMC compliant. The valve body must be electrically connected to ground (PE, machine ground). Do not run control cables parallel to high-voltage lines or servo-motor control cables.
4. The cable length between the IO-Link master and the valve must not exceed 20m.
5. Make sure that the valve is under pressure when a setpoint signal is applied to the valve (applying a setpoint signal with no pressure on the valve will cause it to overheat).
6. Valve orientation - any; preferred orientation is coil up, especially when a dry condensate-free air supply may not be maintained.
7. The valve is factory adjusted.
8. The product must be returned to the factory for repair.

### Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under SPECIFICATIONS.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult ASCO Numatics.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

**The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.**

System designers must provide a warning to end users in the operating manual if protection against a failure mode cannot be adequately ensured.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.