### SentronicPLUS Electronic Pressure Regulator

#### General
SentronicPLUS is a 3-way proportional valve with digital control. The Data Acquisition Software (DaS) that comes with SentronicPLUS can be used to adjust the valve’s control parameters to a specific application. Command signal, feedback signal and control parameters can be viewed in real time and adjusted as required for an application. SentronicPLUS can be configured for dual loop control of process variables such as flow, force, speed, RPM, and temperature.

#### Construction
Direct-operated poppet valve
Body: See table below.
Internal parts: Stainless steel and brass
Seals: FPM (fluoroelastomer) and NBR (nitrile)

#### Specifications
Fluids: Air or neutral gas, filtered at 50 µm, condensate-free, lubricated or un lubricated

### Electrical Characteristics

<table>
<thead>
<tr>
<th>Nominal Diameter DN (mm)</th>
<th>Voltage *</th>
<th>Max. Power (W)</th>
<th>Max. Current (mA)</th>
<th>Insulation Class</th>
<th>Degree of Protection</th>
<th>Electrical Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24 VDC = ±10%</td>
<td>12</td>
<td>500</td>
<td>F</td>
<td>IP 65</td>
<td>5-pin M12 connector or 7-pin DIN connector</td>
</tr>
<tr>
<td>3</td>
<td>24 VDC = ±10%</td>
<td>24</td>
<td>500</td>
<td>F</td>
<td>IP 65</td>
<td>5-pin M12 connector or 7-pin DIN connector</td>
</tr>
<tr>
<td>6</td>
<td>24 VDC = ±10%</td>
<td>24°F</td>
<td>1000°F</td>
<td>F</td>
<td>IP 65</td>
<td>5-pin M12 connector or 7-pin DIN connector</td>
</tr>
<tr>
<td>12</td>
<td>24 VDC = ±10%</td>
<td>34</td>
<td>1400</td>
<td>F</td>
<td>IP 65</td>
<td>5-pin M12 connector or 7-pin DIN connector</td>
</tr>
<tr>
<td>20</td>
<td>24 VDC = ±10%</td>
<td>44</td>
<td>1800</td>
<td>F</td>
<td>IP 65</td>
<td>5-pin M12 connector or 7-pin DIN connector</td>
</tr>
</tbody>
</table>

*Max. ripple: 10 %

### Specifications

<table>
<thead>
<tr>
<th>Ø2</th>
<th>Ports</th>
<th>Ø0</th>
<th>Orifice DN (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 NPT or GTap</td>
<td>1</td>
<td>0.032 (0.028)</td>
<td></td>
</tr>
<tr>
<td>1/8 NPT or GTap</td>
<td>3</td>
<td>0.21 (0.18)</td>
<td></td>
</tr>
<tr>
<td>1/4 NPT or GTap</td>
<td>6</td>
<td>0.70 (0.60)</td>
<td></td>
</tr>
<tr>
<td>1/2 NPT or GTap</td>
<td>12</td>
<td>1.39 (1.20)</td>
<td></td>
</tr>
<tr>
<td>1 NPT or GTap</td>
<td>20</td>
<td>5.57 (4.80)</td>
<td></td>
</tr>
</tbody>
</table>

### How to Order

Control Panel
- D = M12 with display - non-explosion proof
- E = M12 without display - explosion proof (ATEX)
- F = DIN connector, 7-pin with display - non-explosion proof
- G = DIN connector, 7-pin without display - non-explosion proof

Version (Ports), body
- G = DN6 (G1/4), Stainless Steel
- C = DN6 (NPT1/8), Brass
- J = DN1 (G1/8), Brass
- K = DN1 (NPT1/8), Brass
- H = DN6 (NPT1/4), Brass
- 8 = DN6 (G1/4), Brass
- 9 = DN3 (NPT1/8), Brass
- 1 = DN12 (G1/2), ALU
- 2 = DN20 (G1), ALU
- 3 = DN2 (G1/2), ALU
- 4 = DN3 (NPT1/4), ALU
- 5 = DN12 (NPT1/2), ALU
- 6 = DN20 (NPT1), ALU
- 7 = DN3 (G1/8), ALU

Command Signal
- 0 = 0...10 Volt
- 1 = 0...20 mA
- 2 = 4...20 mA

Feedback
- 1 = Feedback Output 0...10 Volt
- 2 = Feedback Output 0...20 mA
- 3 = Feedback Output 4...20 mA
- 4 = Feedback Output 0...10 Volt
- 5 = Feedback Output 0...20 mA
- 6 = Feedback Output 4...20 mA

Options
- 001 = Dual Loop Control
- 008 = Oxygen Clean

Pressure Range
- Relative Pressure (psi)
- 0 = -1 bar (150)
- 1 = 0 - 0.1 bar (150)
- 2 = 0.25 - 0.5 bar (39)
- 3 = 0.5 - 1 bar (150)
- 4 = 1 - 1.5 bar (150)
- 5 = 1.5 - 2 bar (150)
- 6 = 2 - 2.5 bar (150)
- 7 = 2.5 - 3 bar (150)
- 8 = 3 - 3.5 bar (150)
- 9 = 3.5 - 4 bar (150)
- 10 = 4 - 4.5 bar (150)
- 11 = 4.5 - 5 bar (150)
- 12 = 5 - 5.5 bar (150)

Max Inlet Pressure Bar (psi)
- 0 = 0.1 bar (150)
- 1 = 0.25 bar (39)
- 2 = 0.5 bar (73)
- 3 = 1 bar (150)
- 4 = 1.5 bar (150)
- 5 = 2 bar (150)
- 6 = 2.5 bar (150)
- 7 = 3 bar (150)
- 8 = 3.5 bar (150)
- 9 = 4 bar (150)
- 10 = 4.5 bar (150)
- 11 = 5 bar (150)
- 12 = 5.5 bar (150)
- 13 = 6 bar (150)
- 14 = 6.5 bar (150)
- 15 = 7 bar (150)

Vacuum (Relative)
- 0 = 0.1 bar (150)
- 1 = 0.25 bar (39)
- 2 = 0.5 bar (73)
- 3 = 1 bar (150)
- 4 = 1.5 bar (150)
- 5 = 2 bar (150)
- 6 = 2.5 bar (150)
- 7 = 3 bar (150)
- 8 = 3.5 bar (150)
- 9 = 4 bar (150)
- 10 = 4.5 bar (150)
- 11 = 5 bar (150)
- 12 = 5.5 bar (150)
- 13 = 6 bar (150)
- 14 = 6.5 bar (150)
- 15 = 7 bar (150)

### Notes
1) 7-pin DIN connector allows crossover from 833-264 or 601 Series analog Sentronic version; ships with field installable connector. 2) Up to max. 12 bar. 3) Only for pressure ranges from 30 to 50 bar. 4) Feedback input is needed for dual loop units. 5) Only for DN3 & DN6. 6) Only for DN6 body type G or H. Other versions available on request. 7) For DN1, brass version 40-11, BA, 44W.

Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.
Electronic Pressure Regulator

Sentronic PLUS
Installation Manual

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

1/8 NPT or GTap (DN1 and DN3)
Weight: 1.21 (0.55)

1/4 NPT or GTap
Weight: 1.87 (0.85)

1/2 NPT or GTap
Weight: 3.64 (1.65)

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

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Connector Pin Out

<table>
<thead>
<tr>
<th>PIN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+24 VDC Supply</td>
</tr>
<tr>
<td>2</td>
<td>Command Signal</td>
</tr>
<tr>
<td>3</td>
<td>+0 VDC Common (Supply)</td>
</tr>
<tr>
<td>4</td>
<td>+0 VDC Common (Command Signal)*</td>
</tr>
<tr>
<td>5</td>
<td>Analog output (Feedback)</td>
</tr>
<tr>
<td></td>
<td>Digital output (Pressure switch)</td>
</tr>
<tr>
<td></td>
<td>Body</td>
</tr>
<tr>
<td></td>
<td>EMV screen</td>
</tr>
</tbody>
</table>

*A 6-wire cable with separate common for the command signal is used for cable lengths over 2 m to minimize the voltage drop for the command signal.

Accessories

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC05F20000000000</td>
<td>5 Pin 12mm FEMALE Straight Field Attachable Connectors PG 9 Cable Gland</td>
</tr>
<tr>
<td>TC05F20000000001</td>
<td>5 Pin 12mm FEMALE 90 DEGREE Field Attachable Connectors PG 9 Cable Gland</td>
</tr>
<tr>
<td>TC0503MMS000671Y</td>
<td>Micro Female 5 Pole Straight 6 Wire 24 AWG, Shielded 3 Meter</td>
</tr>
<tr>
<td>TC0505MMS000671Y</td>
<td>Micro Female 5 Pole 90 Degree 6 Wire 24 AWG Euro Color Code, Shielded 3 Meter*</td>
</tr>
<tr>
<td>TC0503MMS000671Y*</td>
<td>TD0503MMS000671Y*</td>
</tr>
<tr>
<td>TC0505MMS000671Y*</td>
<td>TD0505MMS000671Y*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>99100110</td>
<td>DaS Light: Data Acquisition Software for Sentronic® - basic parameters - free download at Numatics.com</td>
</tr>
<tr>
<td>99100111</td>
<td>DaS Expert: Data Acquisition Software for Sentronic® - full parameters - CD-ROM</td>
</tr>
<tr>
<td>88100732</td>
<td>RS 232 cable converter; 2m cable with 9-pin Sub-D (plug connector)</td>
</tr>
<tr>
<td>833-993708</td>
<td>RS 232 cable converter; 2m cable with 9-pin Sub-D (screw connector)</td>
</tr>
</tbody>
</table>

* Do not use with the 1” SentronicPLUS.
Installation and Operating Instructions

1. Before putting into operation carefully check all electrical connections and the supply voltage (24 VDC ±10 %). Overload can destroy the electronics. Recommended pre-fuse T2.5 A.

2. The electrical connection is made with a round connector M12x1. The connector must meet the requirements of DIN 60079-15. The product was tested with connector code no. 88100729.

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

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

3. Use 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. Min. wire cross-section of supply voltage cable: 0.50 mm².
   For longer cabling distances use larger cross-section cables as required.

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. The valve is factory adjusted.

7. 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 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.
Electrical Connection

1) The valve must only be supplied with 24V DC at a tolerance of +15%/-10% and a max. ripple of 10% (no supply via diode bridge). Overvoltage or a ripple rate exceeding these tolerances can damage the electronics.
2) The max. current at the digital output is 200 mA/4.8W (PNP output). The output is protected against short circuit and overload.
3) If a relay (inductive load) is connected to the digital output, a freewheel diode or a varistor must be used.
4) A shielded cable must be used for protection against interference and EMC.
5) The valve body must be grounded with the earthing terminal PE (dia. M4)