Pressure sensing and control

Herion 18D Pneumatic pressure switches (diaphragm type), - PSC-2

- Medium: neutral, gaseous and liquid fluids
- Operation: diaphragm
- Mounting position: optional
- Ports: 1/4 NPT
- Operating pressure: Vac to 435 psi
- Electrical connection: DIN 43 650
- Switching element: microswitch
- Degree of protection: IP 65

Herion 18D Hydraulic pressure switches (piston type), - PSC-4

- Medium: hydraulics, lubricating and light fuel oils
- Operation: piston
- Mounting position: optional
- Ports: 7/16-20 UNF, 1/4 NPT
- Operating pressure: 70 to 6100 psi
- Electrical connection: DIN 43 650
- Switching element: Microswitch
- Degree of protection: IP 65

Herion 33D Series Solid state switches (pneumatic / all-fluid), - PSC-6

- Medium: Pneumatic types: compressed air or neutral gases
  All fluid types: gasses or liquids, including aggressive
- Operating pressure: Vac to 230 psi (pneumatic)
  0 to 9100 psi (hydraulic/allfluid)
- Mounting: Sub-base
- Maximum pressure: 145 psi (10 bar) VS18S models and VS18G solenoid pilot actuated valves with internal pilot supply
  232 psi (16 bar) VS18G solenoid pilot actuated valves with external pilot supply
- Ambient temperature: -14°F to 140°F (-10°C to +60°C)
- Electrical connection: M12 x 1
- Degree of protection to DIN 40 050
  IP 65 (with mounted plug)

Herion 18S Allfluid Series Analog pressure sensor for hydraulic/all-fluid, - PSC-8

- Medium: For neutral and aggressive gases or fluids
- Fluid connection: 1/4 NPT male
- Mounting position: optional
- Pressure range: 0 to 11,600 psi
- Ambient temperature: -4°F to 185°F (-20°C to +85°C)
- Degree of protection - IP 65 (acc. to DIN 40050)
- Shock protection - 30g, to DIN EN 60068-2-27
- Vibration protection - 3g, 5 to 500 Hz, xyz, DIN EN 60068-2-6
**Herion 18S Pneumatic Series Analog pressure sensor, - PSC-10**

Medium - Filtered compressed air, lubricated or unlubricated, neutral gases
Mounting position - optional
Operating pressure - 1.4 to 363 psi (-1 to 25 bar)
Fluid temperature - 14°F to 185°F (-10°C to +85°C)
Degree of protection
IP 65
Electrical connection
DIN 43 650 or M12 x 1 short-circuit protected

**VP40 Series 3-way proportional pressure control valves, - PSC-12**

Medium - Compressed air, filtered to 40 µm, lubricated or unlubricated
Operation - piston
Mounting position - Any, preferably vertical
Flow direction - Fixed
Ambient temperature - 14°F to 104°F (-10°C to +40°C)
Hysteresis - < 3% FS*
Repeatability - < 1% FS* Degree of protection - IP 65 with connector
Response sensitivity - 1% FS* at 20°C
Degree of protection: - IP 65 with connector

**VP60 5/3 Proportional flow control valve (nominal dia. 8 mm), - PSC-14**

Medium - Filtered unlubricated air
Filtration - Recommended 5µ
Operation - Moving coil
Connection - 1/4 NPT and G1/4"
Flow rate - 40 scfm (1200 l/min) for p1: 90 psi and p2: 75 psi
Mounting position - Any, preferred solenoid on top
Operating temperature - 32°F to 140°F (0°C to 60°C)

**VP10 Electronic Pressure Regulator, - PSC-16**

Medium - Oil free, dry air, filtered to 5 micron
Output pressure - 3-15 psig (0.2-1.0 bar), 3-30 psig (0.2-2.0 bar), 3-60 psig (0.2-4.0 bar), 2-120 psig (0.14-8 bar) three wire version
Flow capacity - Up to 10 scfm (300 l/min)
Air consumption - <60 psig (<4 bar): 0.03 scfm (0.85 l/min) typical
>60 psig (>4 bar): 0.06 scfm (1.75 l/min) typical
Operating pressure - At least 10 psig (0.7 bar) above maximum required output pressure
Connections - NPT 1/4" or 1/4" ISO G available
Operating temperature - 4° to 160°F (-20°C to 70°C)
Pressure sensing and control

**VP50 Proportional Pressure Control Valve, - PSC-18**

- Medium - Compressed air, filtered to 40µm, non-lubricated
- Operation - Proportional, direct acting air piloted spool
- Output Pressure - See website
- Supply Pressure - 200 psig (14 bar) max
- Supply Sensitivity - Better than 0.75% span output change per bar supply pressure change
- Flow Capacity - Up to 50 scfm (1400 Nl/min)
- Total Error - Max. error < ±1% of span (independent error includes the combined effect of non-linearity, hysteresis, deadzone and repeatability)
- Operating Temperature - 23° to 120°F (-5° to 50°C)

**VP51 Programmable proportional pressure control valve, - PSC-20**

- Medium - Compressed air filtered to 40 µm, non-lubricated
- Supply pressure - 205 psig (14 bar) max.
- Output pressure - 0 - 145 psig (0 - 10)
- Supply sensitivity - ≤ 50 mbar between 160 and 90 psig (11 and 6 bar) supply
- Response time - < 100 ms (from 10 to 90% of output pressure into a 0.1 litre load)
- Air consumption - < 0.177 scfm (5 l/min)
- Total error - Maximum error ± 1.45 psig (100 mbar) of total span (independent error includes the combined effect of non-linearity, hysteresis, deadzone and repeatability)
- Ambient temperature - -4 to 122°F (-20° to 50°C)

**R-27 Series Manostat Precision Air Pressure Regulators, - PSC-22**

- Medium - Dry, oil free air filter to 25 microns
- Operation - Two stage servo mechanized regulator with integral precision measuring capsule
- Mounting - Any position. Panel mounting or through mounting holes on the unit (lever, plunger and pilot versions)
- Port sizes - G 1/4
- Output pressure ranges - See individual details
- Supply pressure - Minimum at least 2.9 psig (0.2 bar) above output pressure.
- Maximum 145 psig (10 bar)
- Flow capacity - Up to 10.6 scfm (300 l/m)
These instruments convert pneumatic pressures into electrical signals for use with data loggers, computers and microprocessors.

Type 68 is a two-wire pressure/current device.

Type 69 is a three-wire pressure/voltage type.

Both use only non-critical power supplies and can be supplied weatherproof to IP65.

Type 421 Compact failsafe rail mount I/P converter, - PSC-24

A rugged, electronic I/P converter designed for high density rail or manifold mounting, at a spacing of only 1" (25mm).

Advanced electronic control using surface mount electronics and a precision pressure transducer and offers excellent performance characteristics.

Employing a high sensitivity microminiature Reedex valve for pressure control.

Great reliability, long life, freedom from vibration effects, and are significantly less prone to mechanical derangement than older conventional designs.

Can be mounted on DIN rail, surface mounted, or mounted onto a high density manifold.

Type 422 and type 423 Failfreeze Electronic Converter, - PSC-24

A major advance in I/P converter design, offering failfreeze in addition to conventional I/P features.

Advanced electronic control and a precision pressure transducer to achieve outstanding performance.

Intended for field application in which rugged construction, vibration immunity, weatherproofing and reliability are essential, together with the enhanced system safety gained from its failfreeze characteristic.

Two wire operation from a 4-20mA control signal with output pressures up to 120 psig (8 bar) as standard.

Type 425 Electronic I/P Converter, - PSC-25

For service in demanding industrial and process control applications, normally used to accurately convert a loop control current of 4-20mA to 3-15 psig (0.2-1 bar) pneumatic signal to operate a control valve actuator.

Uses the proven Reedex© microminiature solenoid valve avoiding the use of sensitive flapper nozzle electromechanical components.

Provides solid state closed loop control ensuring long term accuracy.

For use in adverse environmental conditions giving optimum performance and low cost of ownership.
Herion 18D

Pneumatic pressure switches (diaphragm type)
Vac - 435 psi

Model numbers - pneumatic/lubrication applications

<table>
<thead>
<tr>
<th>Port size</th>
<th>Type</th>
<th>Pressure range [psi (bar)]</th>
<th>Switching pressure difference psi* (bar)</th>
<th>Model</th>
<th>Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>-14 – 0 (-1 – 0)</td>
<td>2 (0.15)</td>
<td>3 (0.18)</td>
<td>0880120</td>
</tr>
<tr>
<td></td>
<td>Flange</td>
<td>-14 – 0 (-1 – 0)</td>
<td>2 (0.15)</td>
<td>3 (0.18)</td>
<td>0881100</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>Female</td>
<td>3 – 30 (0.2 – 2)</td>
<td>2 (0.15)</td>
<td>4 (0.27)</td>
<td>0880220</td>
</tr>
<tr>
<td></td>
<td>Flange</td>
<td>3 – 30 (0.2 – 2)</td>
<td>2 (0.15)</td>
<td>4 (0.27)</td>
<td>0881200</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>Female</td>
<td>7 – 120 (0.5 – 8)</td>
<td>4 (0.2)</td>
<td>9 (0.65)</td>
<td>0880320</td>
</tr>
<tr>
<td></td>
<td>Flange</td>
<td>7 – 120 (0.5 – 8)</td>
<td>4 (0.2)</td>
<td>9 (0.65)</td>
<td>0881300</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>Female</td>
<td>15 – 230 (1 – 16)</td>
<td>4 (0.2)</td>
<td>13 (0.90)</td>
<td>0880420</td>
</tr>
<tr>
<td></td>
<td>Flange</td>
<td>15 – 230 (1 – 16)</td>
<td>4 (0.2)</td>
<td>13 (0.90)</td>
<td>0881400</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>Female</td>
<td>15 – 435 (1 – 30)</td>
<td>15 (1.0)</td>
<td>75 (5.0)</td>
<td>0880620</td>
</tr>
</tbody>
</table>

Model numbers - water applications

<table>
<thead>
<tr>
<th>Port size</th>
<th>Type</th>
<th>Pressure range [psi (bar)]</th>
<th>Switching pressure difference psi* (bar)</th>
<th>Model</th>
<th>Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 NPT</td>
<td>Female</td>
<td>3 – 30 (0.2 – 2)</td>
<td>2 (0.15)</td>
<td>4 (0.27)</td>
<td>0880240</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>Female</td>
<td>7 – 120 (0.5 – 8)</td>
<td>4 (0.2)</td>
<td>9 (0.65)</td>
<td>0880340</td>
</tr>
</tbody>
</table>

Note: Switches are supplied with DIN 43650 mating connector.

* Switching pressure difference (hysteresis) is not adjustable. Typical valves are shown.

Caution: Observe switching range. Do not subject switch to maximum allowable pressure during normal operation. Even short pressure peaks must not exceed this value.

Adjustable setpoint
Gold-plated contacts
Vibration resistant to 15 g
Microswitch approved by UL and CSA
Intrinsically safe operation

Technical data

Medium
Neutral, gaseous and liquid fluids

Operation
Diaphragm

Mounting position
Optional

Operating pressure
Vac to 435 psi

Over pressure
1150 psi

Ambient temperature
-14°F to 175°F (-10°C to + 80°C)

Viscosity
Up to 1000 mm²/s (±450 ssu).

Fluid temperature
-14°F to 175°F (-10°C to +80°C)

Repeatability
±3%, for vacuum ±4%

Electrical connection
DIN 43 650

Switching element
Microswitch

Degree of protection
IP 65

Weight
.4 lbs (0.2 kg)

Materials
Housing: aluminum
Seals: Perbunan, Viton
‘O’-ring: NBR
**Herion 18D**
Pneumatic pressure switches
Vac - 435 psi

### Making And/Or Breaking Capacity

<table>
<thead>
<tr>
<th>Load Level*</th>
<th>Type of Current</th>
<th>Type of Load</th>
<th>Vmin [V]</th>
<th>Maximum Permanent Current Imax [A] at V</th>
<th>Contact life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard (relays, solenoids)</td>
<td>AC</td>
<td>Resistive</td>
<td>12</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>AC</td>
<td>Inductive</td>
<td>12</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>Resistive</td>
<td>12</td>
<td>5</td>
<td>.4</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>Inductive</td>
<td>L/R = 10 ms</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Low (electronic circuits)</td>
<td>AC</td>
<td>Resistive</td>
<td>5</td>
<td>.34</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>Inductive</td>
<td>L/R = 10 ms</td>
<td>5</td>
<td>.1</td>
</tr>
</tbody>
</table>

*Load Level Explanation
Series 18D Pressure Switches have microswitch contacts with gold-plating over silver base metal. The gold plating remains intact when "low level" voltage / current levels are observed. This feature assures highly reliable switching in low-level electronic circuits.

Notes:
1. Reference conditions: 30 cycles per min and 86°F (30°C) ambient.
2. Reducing load current to 50% of I max approximately doubles contact life.
3. Creepage and clearance distances correspond to insulation group B per VDE Reg. 0110 (except contact clearance of microswitch.

---

### Protective Cover
An optional elastomer cover for protection of the switch adjustment against dirt and splashing liquids Part No. 0554737

---

*PSC-3*
Herion 18D
Hydraulic pressure switches (piston type)
70 to 6100 psi

Adjustable setpoint
Gold-plated contacts
Vibration resistant to 15 g
Microswitch approved by UL and CSA
Intrinsically safe operation

Technical data
Medium
Hydraulics, lubricating and light fuel oils
Operation
Piston
Mounting position
Optional
Operating pressure
70 to 6100 psi
Over pressure
5800 psi, 08824xx: 8700 psi
Ambient temperature
-13°F to 175°F (-25°C to +80°C)
Viscosity
Up to 1000 mm²/s (+450 ssu).
Fluid temperature
-13°F to 175°F (-25°C to +80°C)
Repeatability
±3%
Electrical connection
DIN 43650
Switching element
Microswitch
Degree of protection
IP 65
Weight
.2 lbs (0.2 kg)
Materials
Housing: aluminum
Port: stainless steel
Seals: Teflon/Buna-N

Model numbers - hydraulic applications

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Type</th>
<th>Pressure Range (psi/bar)</th>
<th>Switching Pressure Difference (Hysteresis)* (psi/bar)</th>
<th>Model</th>
<th>Dimension Drawing No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>flange</td>
<td>70 – 1015 (5–70)</td>
<td>152 (10.5) 218 (15)</td>
<td>0883100</td>
<td>2</td>
</tr>
<tr>
<td>7/16-20 UNF female</td>
<td>70 – 1015 (5–70)</td>
<td>152 (10.5) 218 (15)</td>
<td>0882119</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>female</td>
<td>70 – 1015 (5–70)</td>
<td>152 (10.5) 218 (15)</td>
<td>0882120</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>flange</td>
<td>150 – 2320 (10–160)</td>
<td>160 (11) 247 (17)</td>
<td>0883200</td>
<td>2</td>
</tr>
<tr>
<td>7/16-20 UNF female</td>
<td>150 – 2320 (10–160)</td>
<td>160 (11) 247 (17)</td>
<td>0882219</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>female</td>
<td>150 – 2320 (10–160)</td>
<td>160 (11) 247 (17)</td>
<td>0882220</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>flange</td>
<td>380 – 3600 (25–250)</td>
<td>160 (11) 247 (17)</td>
<td>0883300</td>
<td>2</td>
</tr>
<tr>
<td>7/16-20 UNF female</td>
<td>380 – 3600 (25–250)</td>
<td>160 (11) 247 (17)</td>
<td>0882319</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>female</td>
<td>360 – 3600 (25–250)</td>
<td>160 (11) 247 (17)</td>
<td>0882320</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>flange</td>
<td>580 – 6100 (40–420)</td>
<td>247 (17) 508 (35)</td>
<td>0883400</td>
<td>2</td>
</tr>
<tr>
<td>7/16-20 UNF female</td>
<td>580 – 6100 (40–420)</td>
<td>247 (17) 508 (35)</td>
<td>0882419</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>female</td>
<td>580 – 6100 (40–420)</td>
<td>247 (17) 508 (35)</td>
<td>0882420</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Switches are supplied with DIN 43650 mating connector
* Switching pressure difference (hysteresis) is not adjustable. Maximum values are shown.
## Making And/Or Breaking Capacity

<table>
<thead>
<tr>
<th>Load Level*</th>
<th>Type of Current</th>
<th>Type of Load</th>
<th>Vmin [V]</th>
<th>Maximum Permanent Current Imax [A] at V Contact life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>24 V</td>
<td>125 V</td>
</tr>
<tr>
<td>Standard (relays, solenoids)</td>
<td>AC</td>
<td>Resistive</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>AC</td>
<td>Inductive PF = 0.7</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>Resistive</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>Inductive L/R = 10 ms</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Low (electronic circuits)</td>
<td>AC</td>
<td>Resistive</td>
<td>5</td>
<td>.34</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>Inductive L/R = 10 ms</td>
<td>5</td>
<td>.1</td>
</tr>
</tbody>
</table>

*Load Level Explanation:

Series 18D Pressure Switches have microswitch contacts with gold-plating over silver base metal. The gold plating remains intact when “low level” voltage / current levels are observed. This feature assures highly reliable switching in low-level electronic circuits.

Standard applications do not require the gold plating – which will decay naturally when switching larger electrical loads.

Notes:

1. Reference conditions: 30 cycles per min and 86°F (30°C) ambient.
2. Reducing load current to 50% of I max approximately doubles contact life.
3. Creepage and clearance distances correspond to insulation group B per VDE Reg: 0110 (except contact clearance of microswitch).

---

1. **Protective Cover**
   An optional elastomer cover for protection of the switch adjustment against dirt and splashing liquids Part No. 0554737
Herion 33D Series

Solid state switches (pneumatic / all-fluid)

Vac to 9100 psi

Real time pressure display with backlight
Compact and robust design
Easy programming of set points and additional functions
Transistor output signals 1 x PNP, 2 x PNP, or 1 x PNP + 4 to 20 mA
Electronic lock
Switching status indicated by LED
Standard M12x1 electrical connection (IP 65)

For pneumatic, all fluid and hydraulic applications

Technical data

Medium
Pneumatic types: compressed air or neutral gases
All fluid types: gases or liquids, including aggressive

Display
LCD 4 digits illuminated, pressure unit programmable for bar, psi, mpa

Mounting position
Optional

Operating pressure
Vac to 230 psi (pneumatic)
0 to 9100 psi (hydraulic/allfluid)

Temperature sensitivity (zero point)
0.4% of final value/10 K

Temperature sensitivity (range)
0.4% FS/10 K

Ambient temperature
14°F to 140°F (-10°C to 60°C)

Fluid temperature
14°F to 75°F (-10°C to 80°C)

Switching point
Adjustable between 0 and 100% FS

Reset point
Adjustable between 0 and 100% FS

Electrical connection
M12 x 1

Linearity
< 0.2% FS ±1 digit

Degree of protection to DIN 40 050
IP 65 (with mounted plug)

Model number - standard pneumatic models*

<table>
<thead>
<tr>
<th>Port size</th>
<th>Measuring range (psi)</th>
<th>Maximum overpressure (psi)</th>
<th>Output signal</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 NPT</td>
<td>0 – 230</td>
<td>435</td>
<td>1 x PNP</td>
<td>0863014</td>
</tr>
<tr>
<td>Flange</td>
<td>0 – 230</td>
<td>435</td>
<td>1 x PNP</td>
<td>0863016</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>0 – 230</td>
<td>435</td>
<td>2 x PNP</td>
<td>0863024</td>
</tr>
<tr>
<td>Flange</td>
<td>0 – 230</td>
<td>435</td>
<td>2 x PNP</td>
<td>0863026</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>0 – 230</td>
<td>435</td>
<td>1 x PNP / 4–20 mA</td>
<td>0863044</td>
</tr>
<tr>
<td>Flange</td>
<td>0 – 230</td>
<td>435</td>
<td>1 x PNP / 4–20 mA</td>
<td>0863046</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>0 – 230</td>
<td>435</td>
<td>1 x PNP</td>
<td>0863214</td>
</tr>
<tr>
<td>Flange</td>
<td>0 – 230</td>
<td>435</td>
<td>1 x PNP</td>
<td>0863216</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>0 – 230</td>
<td>435</td>
<td>2 x PNP</td>
<td>0863224</td>
</tr>
<tr>
<td>Flange</td>
<td>0 – 230</td>
<td>435</td>
<td>2 x PNP</td>
<td>0863226</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>0 – 230</td>
<td>435</td>
<td>1 x PNP / 4–20 mA</td>
<td>0863244</td>
</tr>
<tr>
<td>Flange</td>
<td>0 – 230</td>
<td>435</td>
<td>1 x PNP / 4–20 mA</td>
<td>0863246</td>
</tr>
</tbody>
</table>

* M12 x 1 connector not included. Please see table on next page.

Options selector

<table>
<thead>
<tr>
<th>Pressure range (pneumatic)</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vac–15 psi</td>
<td>0</td>
</tr>
<tr>
<td>0 – 230 psi</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure range (allfluid)</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 145 psi</td>
<td>1</td>
</tr>
<tr>
<td>0 – 590 psi</td>
<td>3</td>
</tr>
<tr>
<td>0 – 1450 psi</td>
<td>4</td>
</tr>
<tr>
<td>0 – 2300 psi</td>
<td>5</td>
</tr>
<tr>
<td>0 – 3600 psi</td>
<td>6</td>
</tr>
<tr>
<td>0 – 5800 psi</td>
<td>7</td>
</tr>
<tr>
<td>0 – 9100 psi</td>
<td>8</td>
</tr>
</tbody>
</table>

Materials
Housing: aluminum
Pneumatic version
Seal: viton O-ring (FKM)
Sensor: silicon
Hydraulic/All fluid version
Porting block / sensor: 316 SS welded
Herion 33D Series
Solid state pressure switches (pneumatic / all-fluid)
Vacuum to 9100 psi

Electrical parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical connection</td>
<td>M12 x 1</td>
</tr>
<tr>
<td>Power supply</td>
<td>10 – 32 V d.c. (polarity safe)</td>
</tr>
<tr>
<td>(digital models)</td>
<td></td>
</tr>
<tr>
<td>Permissible residual ripple</td>
<td>10% (within 12 to 32 V)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>&lt;50 mA (plus load current)</td>
</tr>
</tbody>
</table>

Electromagnetic compatibility

- Interference emission: Conforming to EN 50081, Part 1
- Interference immunity: Conforming to EN 50082, Part 2

Electrical connection M12 x 1

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
<th>Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply voltage</td>
<td>Brown</td>
</tr>
<tr>
<td>2</td>
<td>Out 2 (PNP) / analog 4 – 20 mA</td>
<td>White</td>
</tr>
<tr>
<td>3</td>
<td>Common</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>Out 1 (PNP)</td>
<td>Black</td>
</tr>
<tr>
<td>5</td>
<td>Earth ground</td>
<td>Grey</td>
</tr>
</tbody>
</table>

Switching output

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching mode</td>
<td>PNP sourcing type transistor,</td>
</tr>
<tr>
<td></td>
<td>suitable for inductive load</td>
</tr>
<tr>
<td>Output voltage</td>
<td>Supply voltage -1.5 V</td>
</tr>
<tr>
<td>Analog output</td>
<td>4 – 20mA</td>
</tr>
<tr>
<td>Contact rating</td>
<td>Imax = 500 mA (short-circuit proof)</td>
</tr>
<tr>
<td>Switching time</td>
<td>&lt; 10 ms</td>
</tr>
<tr>
<td>Damping</td>
<td>5 ms – 0.64 sec programmable</td>
</tr>
<tr>
<td>Signal delay:</td>
<td>On/off 0 to 20 sec programmable</td>
</tr>
<tr>
<td>Service life</td>
<td>min. 100 million switching cycles</td>
</tr>
<tr>
<td>Switching logic</td>
<td>n.a. / n.a. programmable</td>
</tr>
<tr>
<td>Operating mode</td>
<td>Standard, hysteresis and window mode</td>
</tr>
</tbody>
</table>

Accessories

<table>
<thead>
<tr>
<th>Part number</th>
<th>Connectors and cordsets (M12 x 1)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>8112184</td>
<td>Mating connector 5-pin straight w/screw terminals, no cable</td>
</tr>
<tr>
<td>8112193</td>
<td>Molded cordset 5-pin straight w/2m cable</td>
</tr>
<tr>
<td>8112194</td>
<td>Molded cordset 5-pin 90° w/2m cable</td>
</tr>
</tbody>
</table>

* must be ordered separately

* Suitable for M 5 x 35 or 10-24 screws
** Flange diameter 8 x 1.2 deep, O-ring 4.47 x 1.78 (Viton 90)
Herion 18S Allfluid Series
Analogue pressure sensor for hydraulic / all-fluid applications, 0 - 11,600 psi

Robust sensor for hydraulic applications
Temperature compensated
3-wire technology (0 to 10 V)
2-wire technology (4 to 20 mA)
Excellent long-term stability
Stainless steel measuring element-not oil-filled

Technical data
Medium
For neutral and aggressive gases or fluids
Fluid connection
1/4 NPT male
Mounting position
Optional
Pressure range
0 to 11,600 psi
Fluid temperature:
-4°F to 185°F (-20°C to +85°C)
Ambient temperature
-4°F to 185°F (-20°C to +85°C)
Degree of protection
IP 65 (acc. to DIN 40050)
Shock protection
30g, to DIN EN 60068-2-27
Vibration protection
3g, 5 to 500 Hz, xyz, DIN EN 60068-2-6
Electrical connection
M 12 x 1
Supply voltage
U_B = 12 to 30 V d.c. (current output)
U_B = 15 to 30 V d.c. (voltage output)
Output signal
4 to 20 mA (Two-wire technology)
0 to 10 V (Three-wire technology)
Electromagnetic compatibility
Interference immunity acc. to EN 50081. Part 1
Interference Immunity acc. to EN 50082. Part 2
Load resistance
See diagram
Polarity
Short-circuit proof
Measuring range
See table below

Standard models*

<table>
<thead>
<tr>
<th>Model</th>
<th>Measuring range (psi)</th>
<th>Value max. (bar)</th>
<th>Output signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0862178</td>
<td>0 - 145</td>
<td>580</td>
<td>4 – 20 mA</td>
</tr>
<tr>
<td>0862188</td>
<td>0 - 145</td>
<td>580</td>
<td>0 – 10 V</td>
</tr>
<tr>
<td>0862378</td>
<td>0 - 360</td>
<td>725</td>
<td>4 – 20 mA</td>
</tr>
<tr>
<td>0862388</td>
<td>0 - 360</td>
<td>725</td>
<td>0 – 10 V</td>
</tr>
<tr>
<td>0862478</td>
<td>0 - 1450</td>
<td>2900</td>
<td>4 – 20 mA</td>
</tr>
<tr>
<td>0862488</td>
<td>0 - 1450</td>
<td>2900</td>
<td>0 – 10 V</td>
</tr>
<tr>
<td>0862678</td>
<td>0 - 3625</td>
<td>7250</td>
<td>4 – 20 mA</td>
</tr>
<tr>
<td>0862688</td>
<td>0 - 3625</td>
<td>7250</td>
<td>0 – 10 V</td>
</tr>
<tr>
<td>0862778</td>
<td>0 - 5800</td>
<td>10,800</td>
<td>4 – 20 mA</td>
</tr>
<tr>
<td>0862788</td>
<td>0 - 5800</td>
<td>10,800</td>
<td>0 – 10 V</td>
</tr>
<tr>
<td>0862978</td>
<td>0 - 11,600</td>
<td>14,500</td>
<td>4 – 20 mA</td>
</tr>
<tr>
<td>0862988</td>
<td>0 - 11,600</td>
<td>14,500</td>
<td>0 – 10 V</td>
</tr>
</tbody>
</table>

* Order mating connector separately

Electrical connection M 12 x 1 (4 pin)

Options selector

<table>
<thead>
<tr>
<th>Measuring range relative pressure</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 145 psi</td>
<td>1</td>
</tr>
<tr>
<td>0 to 360 psi</td>
<td>3</td>
</tr>
<tr>
<td>0 to 1450 psi</td>
<td>4</td>
</tr>
<tr>
<td>0 to 3625 psi</td>
<td>6</td>
</tr>
<tr>
<td>0 to 5800 psi</td>
<td>7</td>
</tr>
<tr>
<td>0 to 11,600 psi</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output signal</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 to 20 mA</td>
<td>7</td>
</tr>
<tr>
<td>0 to 10 V</td>
<td>8</td>
</tr>
</tbody>
</table>

Linearity < ±0.5% FS
Hysteresis < 0.15% FS
Temperature sensitivity
Zero point < ± 0.4% FS/10K
Range < ± 0.2% FS/10K
Materials
Housing: 316 stainless steel
Sensor: 316 stainless steel welded
Herion 18S
Pressure sensor analog
0 to 11,600 psi

Electrical diagram for 2-wire versions 4 to 20 mA

1 = I Output
2 = Load

Electrical diagram for 3-wire versions 0 to 10 V

Max. load $RL = \frac{U_B - 12 \text{ V}}{0.02 \text{ A}}$ (11)

Characteristic load curve

Accessories

<table>
<thead>
<tr>
<th>Part number</th>
<th>Connector and cordsets (M12 x 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0523055</td>
<td>mating connector, 4-pin straight w/screw terminals, no cable</td>
</tr>
<tr>
<td>0523057</td>
<td>molded cordset, 4-pin straight, 2 meter</td>
</tr>
<tr>
<td>0523052</td>
<td>molded cordset, 4-pin straight, 6 meter</td>
</tr>
<tr>
<td>0523058</td>
<td>molded cordset, 4-pin 90°, 2 meter</td>
</tr>
<tr>
<td>0523053</td>
<td>molded cordset, 4-pin 90°, 5 meter</td>
</tr>
</tbody>
</table>

Weight: 2.50 oz.
Herion 18S Pneumatic Series

Analog pressure sensor for pneumatic applications

-14.5 to 360 psi

Temperature compensated
Robust design for pneumatic and industrial applications

Technical data
Medium:
Filtered compressed air, lubricated or unlubricated, neutral gases
Mounting
Optional
Operating pressure
1.4 to 363 psi (-1 to 25 bar)
Fluid temperature
14°F to 185°F (-10°C to +85°C)
Ambient temperature
14°F to 185°F (-10°C to +85°C)
Degree of protection
IP 65
Electrical connection
DIN 43 650 or M12 x 1 short-circuit protected
Output signal
4 to 20 mA (Two-wire technology)
Linearity
< ±0.5% final scale
Hysteresis
< 0.15%
Temperature sensitivity
(zero point)
Zero point < ± 0.4% FS/10K
Range < ± 0.2% FS/10K
Weight:
0.3 oz. (0.15 kg)
Materials
Housing: aluminum
Sensor: Silicon
O-rings: NBR

Model numbers*

<table>
<thead>
<tr>
<th>Port size</th>
<th>Measuring range (bar) (Relative pressure)</th>
<th>Value max. (bar) (Over pressure)</th>
<th>Model DIN 43650</th>
<th>Model M12x1*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 NPT</td>
<td>-14.5 to 14.5</td>
<td>145</td>
<td>0862083</td>
<td>0862084</td>
</tr>
<tr>
<td>Flange</td>
<td>-14.5 to 14.5</td>
<td>145</td>
<td>0862085</td>
<td>0862086</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>0 to 145</td>
<td>435</td>
<td>0862183</td>
<td>0862184</td>
</tr>
<tr>
<td>Flange</td>
<td>0 to 145</td>
<td>435</td>
<td>0862185</td>
<td>0862186</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>0 to 360</td>
<td>580</td>
<td>0862383</td>
<td>0862384</td>
</tr>
<tr>
<td>Flange</td>
<td>0 to 360</td>
<td>580</td>
<td>0862385</td>
<td>0862386</td>
</tr>
</tbody>
</table>

* M12 x 1 connector not included. Please see table below.
Herion 18S
Pressure sensor analog
-1 to 25 bar

Electrical connection

<table>
<thead>
<tr>
<th>DIN 43650</th>
<th>M12 x 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin</td>
<td>Wiring</td>
</tr>
<tr>
<td>1</td>
<td>+ UB</td>
</tr>
<tr>
<td>2</td>
<td>Signal 4 ... 20 mA</td>
</tr>
</tbody>
</table>

Accessories
Connector cordsets (M12 x 1)

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0523055</td>
<td>Straight, without cable</td>
</tr>
<tr>
<td>0523057</td>
<td>Straight, 2 m cable, 4-pin</td>
</tr>
<tr>
<td>0523052</td>
<td>Straight, 5 m cable, 4-pin</td>
</tr>
<tr>
<td>0523058</td>
<td>90° 2 m cable, 4-pin</td>
</tr>
<tr>
<td>0523053</td>
<td>90° 5 m cable, 4-pin</td>
</tr>
</tbody>
</table>

DIN 43650
1/4 NPT

M12 x 1
1/4 NPT

Flange

* O-ring 5 x 1.5
Proportional valves

VP40 Series
3-way proportional pressure control valves
1/8, 1/4, and 3/8"

Low hysteresis
Good repeatability
High flow capacity at exhaust
Manifold mountable
Compact design

Technical data
Medium:
Compressed air, filtered to 40 µm,
lubricated or unlubricated
Mounting position:
Any, preferably vertical
Flow direction:
Fixed
Ambient temperature:
14°F to 104°F (-10°C to +40°C)
Hysteresis:
< 3% FS*
Repeatability:
< 1% FS*
Linearity:
See characteristic curves
Response sensitivity:
1% FS*
* at 20°C
Degree of protection:
IP 65 with connector
Materials
Body: aluminum alloy
Seals: NBR

<table>
<thead>
<tr>
<th>Orifice (mm)</th>
<th>Port size</th>
<th>Outlet pressure P2 (psi)</th>
<th>Maximum inlet pressure P1 (psi)</th>
<th>Rated current (mA)</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1/8 NPT</td>
<td>0 to 145</td>
<td>145</td>
<td>0 to 1600 (1800)</td>
<td>4088119.7053</td>
</tr>
<tr>
<td>6</td>
<td>1/4 NPT</td>
<td>0 to 33</td>
<td>100</td>
<td>0 to 1600 (1800)</td>
<td>4088201.7053</td>
</tr>
<tr>
<td>8</td>
<td>3/8 NPT</td>
<td>0 to 100</td>
<td>145</td>
<td>0 to 1600 (1800)</td>
<td>4088311.7071</td>
</tr>
</tbody>
</table>

Drive electronics pQ11

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated current mA</th>
<th>Type of connection</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5980081</td>
<td>0 to 2400</td>
<td>Connector according to DIN 43651</td>
<td>Suitable for 4088xxx.xxx valves</td>
</tr>
<tr>
<td>5980085</td>
<td>0 to 2400</td>
<td>2 m cable</td>
<td></td>
</tr>
</tbody>
</table>

Drive electronics pQ12

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated current mA</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5980126</td>
<td>0 to 2400</td>
<td>Suitable for 4088xxx.xxx, 4090020.7093 and 4090021.7093 valves</td>
</tr>
</tbody>
</table>

Electrical information for proportional solenoids

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>Limiting current IN</th>
<th>Rated power PN</th>
<th>Resistance R20</th>
<th>Duty cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>4, 6 &amp; 8</td>
<td>1600 mA</td>
<td>22 W</td>
<td>6.5 ohms + 3%</td>
<td>100%</td>
</tr>
</tbody>
</table>
VP40 Series
3-way proportional pressure control valves
NPT ½, NPT ¼, NPT ⅜,

Characteristic curves

Flow (SCFM)
Fig. 3 Valve 40-881-19

Flow (SCFM)
Fig. 4 Valve 40-882-17

Flow (SCFM)
Fig. 5 Valve 40-882-01

Flow (SCFM)
Fig. 6 Valve 40-882-17

Flow (SCFM)
Fig. 8 Valve 40-883-11
Proportional valves

**VP60**

5/3 Proportional flow control valve (nominal dia. 8 mm)
Directly operated spool valve with µP-electronics

- **Microprocessor control electronics**
- **High dynamic regulation**
- **On-board diagnostics**
- **CE conformance**

**Technical data**

**Medium**
Filtered unlubricated air.
Note: Using lubricated air may affect dynamic response and lifespan of the valve.

**Filtration**
Recommended 5µ

**Operation**
Moving coil

**Connection**
1/4 NPT and G1/4"

**Flow rate**
40 scfm (1200 l/min)
for p1: 90 psi and p2: 75 psi

**Mounting position**
Any, preferred solenoid on top

**Flow direction**
1→4+2→3; 1→2+4→5

**Operating temperature**
32°F to 140°F (0°C to 60°C)
No condensation permissible

**Materials**
- Electronic housing: plastic (PAA)
- Valve housing: aluminum alloy
- Seals: NBR
- Solenoid surface: steel

**Degree of protection**
IP65

**Operating pressure [p1]**
0 to 175 psi

**Leakage**
For center position 35 scfh with p1: 145 psi

**Reaction time**
At p1 = 90 psi and 100% stroke free exhausting:
- Dead time: 3 ms
- Rise time (10% - 90%): 5 ms

**Electromagnetic compatibility**
The valve conforms to the EC requirements EN50081-2 (emission) and EN50082-2 (disturbance noise).
For this specification shielded cables have to be used.

**Electrical information**

**Power supply requirements**

<table>
<thead>
<tr>
<th>Supply voltage [U_B [VDC]]</th>
<th>18...32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current consumption with max. stroke 50 Hz (A)</td>
<td>2.0 at 24 VDC</td>
</tr>
<tr>
<td>Current consumption in steady state (A)</td>
<td>0.1 at 24 VDC</td>
</tr>
</tbody>
</table>

**Input signal**

**Analog (single ended types)**

<table>
<thead>
<tr>
<th>Voltage signal [U_E [V]]</th>
<th>0...10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input resistance [R_I [kΩ]]</td>
<td>110</td>
</tr>
<tr>
<td>Current signal [I_E [mA]]</td>
<td>(0) 4...20</td>
</tr>
<tr>
<td>Load resistance [Ω]]</td>
<td>500</td>
</tr>
</tbody>
</table>

**Analog (differential types)**

<table>
<thead>
<tr>
<th>Voltage signal [U_E [V]]</th>
<th>0...10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input resistance [R_I [kΩ]]</td>
<td>110</td>
</tr>
<tr>
<td>Max. Input voltage range [V]]</td>
<td>-10...40</td>
</tr>
</tbody>
</table>

**Output signal**

**Spool position feedback (voltage)**

<table>
<thead>
<tr>
<th>Voltage signal slide position [U_A [V]]</th>
<th>0...10 V = min....max. stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. output current [I_A [mA]]</td>
<td>1</td>
</tr>
</tbody>
</table>

**Spool position feedback (current)**

<table>
<thead>
<tr>
<th>Current signal slide position [I_A [mA]]</th>
<th>0...20 mA = min....max. stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current signal slide position [I_A [mA]]</td>
<td>4...20 mA = min....max. stroke</td>
</tr>
<tr>
<td>Load resistance [R_L [Ω]]</td>
<td>recommended 500</td>
</tr>
</tbody>
</table>
VP60

5/3 Proportional control valve
Directly operated spool valve with µP-electronic position control

Order information

<table>
<thead>
<tr>
<th>VP Proportional valve</th>
<th>60 Family code</th>
<th>xx Flow range</th>
<th>X Unit</th>
<th>X Port size</th>
<th>X Input signal*</th>
<th>X Feedback**</th>
<th>X Power supply</th>
<th>X Electrical connector</th>
<th>xxxx Certification/Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP</td>
<td>60</td>
<td>10 = 1000</td>
<td>L = liter/min</td>
<td>J = G 1/4&quot;</td>
<td>1 = 0-10V</td>
<td>6 = 0-10V</td>
<td>1 = required</td>
<td>M = M12 x 1 8-pin</td>
<td>0000 = no options</td>
</tr>
</tbody>
</table>

*Input signal codes 6 and 7 are differential input versions.

** Both 0-10V and 4-20 mA feedback signals are available simultaneously.

Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>cordset</td>
<td>M12 x 1, 8-pin, 5m, straight</td>
<td>0250811</td>
</tr>
<tr>
<td>cordset</td>
<td>M12 x 1, 8-pin, 5m, 90° angle</td>
<td>0250813</td>
</tr>
</tbody>
</table>
Pressure sensing and control

VP10
Electronic Pressure Regulator

Reliable, rugged proportional I/P and E/P converters
Suitable for a wide range of applications
Excellent accuracy
High flow versions
NEMA4 environmental protection in normal operation

Technical data
Medium:
Oil free, dry air, filtered to 5 micron

Output pressure:
3-15 psig (0.2-1.0 bar), 3-30 psig (0.2-2.0 bar), 3-60 psig (0.2-4.0 bar),
2-120 psig (0.14-8 bar) three wire version

Flow capacity:
Up to 10 scfm (300 l/min)

Air consumption
<60 psig (<4 bar): 0.03 scfm (0.85 l/min) typical
>60 psig (>4 bar): 0.06 scfm (1.75 l/min) typical

Operating pressure:
At least 10 psig (0.7 bar) above maximum required output pressure

Connections:
NPT 1/4” or 1/4” ISO G available

Operating temperature:
-4° to 160°F (-20°C to 70°C)

Response time
<30 psig (<2 bar): less than 0.5 seconds for 10-90% step change
>30 psig (>2 bar): 2 seconds for 10-90% step change

Total error:
±0.5% of span (typical, independent error includes the combined effect of non-linearity, hysteresis, deadzone and repeatability)

Temperature effect:
Typically 0.1% of span/°F for span and zero over operating range

Supply sensitivity:
>0.025% span output change per % supply pressure change

Electrical Information
Electromagnetic compatibility
This is a passive electromagnetic instrument and is unaffected by interfering high frequency signals

Electrical signal
Two wire version 4-20 mA or 0-10 V for 60< PSIG
Three wire version requires 12-24 V d.c. supply

Connections
30 mm square connector DIN 43650 provided, mountable in four directions (alternative connections available)

Failure mode:
Signal fails to bleed pressure when electrical supply fails

Mounting:
Integral surface mounting bracket provided for preferred vertical mounting. 50 mm pipe mounting kit available

Material of construction:
Zinc die-casting passivated and epoxy paint, nitrite diaphragms, stainless steel/nylon flapper nozzle and supply valve
Mass: 3.3 lbs (1500g) approx.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Control signal</th>
<th>Output pressure</th>
<th>Calibration</th>
<th>Thread form*</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP10001PK00A00</td>
<td>0-10 V</td>
<td>3-15 psi (0.2-1 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10001PK04A00</td>
<td>4-20 mA</td>
<td>3-15 psi (0.2-1 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10002PK10A00</td>
<td>0-10 V</td>
<td>3-30 psi (0.2-2 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10002PK04A00</td>
<td>4-20 mA</td>
<td>3-30 psi (0.2-2 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10004PK00A00</td>
<td>0-10 V</td>
<td>3-60 psi (0.2-4 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10004PK04A00</td>
<td>4-20 mA</td>
<td>3-60 psi (0.2-4 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10006PK10A00</td>
<td>0-10 V</td>
<td>3-90 psi (0.2-6 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10006PK04A00</td>
<td>4-20 mA</td>
<td>3-90 psi (0.2-6 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10008PK10A00</td>
<td>0-10 V</td>
<td>3-120 psi (0.2-8 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VP10008PK04A00</td>
<td>4-20 mA</td>
<td>3-120 psi (0.2-8 bar)</td>
<td>PSIG</td>
<td>1/4” NPT</td>
</tr>
</tbody>
</table>

* Replace PK w/BJ for calibration in Bar and 1/4 ISO G thread form.

ISO Symbols
**PSC-17**

NC = Normally closed, NO = Normally open, APB = All ports blocked, COE = Center open exhaust, COP = Center open pressure

**** Insert coil connector code from Connectors table.

For manual override options, substitute 'x' as follows: 1 = without manual override, 2 = locking, 3 = non-locking,

---

**VP10**

Electronic Pressure Regulator

---

**Typical Performance Characteristics**

**FORWARD FLOW CHARACTERISTICS**
Supply Pressure 100 psig (7 bar)

<table>
<thead>
<tr>
<th>Flow (L/min)</th>
<th>0</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outlet Pressure (bar)</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RELIEF FLOW CHARACTERISTICS**
Supply Pressure 100 psig (7 bar)

<table>
<thead>
<tr>
<th>Flow (SCFM)</th>
<th>0</th>
<th>3.5</th>
<th>7</th>
<th>10.5</th>
<th>14</th>
<th>17.5</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outlet Pressure (bar)</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Connector Wiring**

Two wire version <=60 PSIG wire:
+ to #1
- to #2

Three wire version wire:
+ to #1
- to #2
Input signal to #3

---

**Plug Orientations**

Front View

- Range or Span (Typical): 2.13 (54)
- Mounting Holes: .75 (19.5)
- Supply In
- Output
- Removable Orifice

Rear View

- Supply In
- Output
- Mounting Bracket Holes: .15 (3.7)

Dimensions in Inches (mm)

NC = Normally closed, NO = Normally open, APB = All ports blocked, COE = Center open exhaust, COP = Center open pressure

**** Insert coil connector code from Connectors table.

For manual override options, substitute 'x' as follows: 1 = without manual override, 2 = locking, 3 = non-locking,
VP50
Proportional Pressure Control Valve

Air piloted proportional pressure control valve
Fully user adjustable for a wide range of applications
High speed
Lower power consumption
High flow capacity
Optional manifold mount utilizes the ISO Size 2 subbase

Technical Data

Medium:
Compressed air, filtered to 40micron, non-lubricated

Operation:
Proportional, direct acting air piloted spool

Output Pressure:
See website

Supply Pressure:
200 psig (14 bar) max

Supply Sensitivity:
Better than 0.75% span output change per bar supply pressure change

Flow Capacity:
Up to 50 scfm (1400 Nl/min)

Response Time:
< 80 mS (from 10-90% of output pressure into a 0.1 litre load)

Air Consumption:
< .177 scfm (5 l/min)

Port Size:
1/4 PTF (G1/4)

Total Error:
Max. error < ±1% of span (independent error includes the combined effect of non-linearity, hysteresis, deadzone and repeatability)

Operating Temperature:
23° to 120°F (-5° to 50°C)

Temperature Effect:
Typically better than 0.03% of span/°C for span and zero over operating range

Degree of protection:
NEMA 4 (IP65) in normal operation

Vibration Immunity:
< 3% output shift for 3g 10-2000Hz

Mounting Position:
Any screw mounting or manifold mount

Material of Construction:
Aluminium body, zinc diecast lid and end cover

Weight: 1.76 lbs. (800g) approx

Electrical information

Electromagnetic Compatibility: CE marked: conforms to E.C. requirements

Electrical Input Signal:
4-20mA or 0-10V factory set

Electrical Power Input:
24V dc ±25% (power consumption < 1W)

Output Pressure Feedback Signal:
0-10V full range

Connections:
DIN 43650 or Brad Harris on connection for feedback output

Table:

<table>
<thead>
<tr>
<th>Part Number*</th>
<th>Pressure Range and Input Signal Options</th>
<th>Port Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP5010PK111H00</td>
<td>0-10V 0-145 (0-10)</td>
<td>1/4 PTF</td>
</tr>
<tr>
<td>VP5010PK411H00</td>
<td>4-20mA 0-145 (0-10)</td>
<td>1/4 PTF</td>
</tr>
<tr>
<td>VP5006PK111H00</td>
<td>0-10V 0-90 (0-6)</td>
<td>1/4 PTF</td>
</tr>
<tr>
<td>VP5006PK411H00</td>
<td>4-20mA 0-90 (0-6)</td>
<td>1/4 PTF</td>
</tr>
<tr>
<td>VP5002PK111H00</td>
<td>0-10V 0-30 (0-2)</td>
<td>1/4 PTF</td>
</tr>
<tr>
<td>VP5002PK411H00</td>
<td>4-20mA 0-30 (0-2)</td>
<td>1/4 PTF</td>
</tr>
</tbody>
</table>

* To specify regulator calibration in BAR use "B" in the 7th position. For 1/4" ISO G ports use "J" in the 8th position.

To order the VP50 with interface for manifold mounting, indicate an "X" in the 8th position of the part number.

All units shipped with M12 five pin electrical connector
VP50
Proportional Pressure Control Valve

Instrument pin configuration

1. +24V d.c. supply
2. 0-10 full range
3. Control signal (+ve)
4. Common (DC supply, signal and feedback return)
5. Chassis (earth)

Characteristic Curves

Forward Flow Characteristics
Supply Pressure 160 psig (11 bar)

Outlet Pressure in psig (bar)

Flow in SCFM (Nl/min)

Relief Flow Characteristics
Supply Pressure 131 psig (9 bar)

Outlet Pressure in psig (bar)

Flow SCFM (Nl/min)

Accessories

<table>
<thead>
<tr>
<th>Designation</th>
<th>Specification</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectors with cable</td>
<td>M12 x 1.5 pin; 16 ft (5m) 5 x 0.34 mm2</td>
<td>0250081</td>
</tr>
<tr>
<td></td>
<td>M12 x 1.5 pin; 30 ft (10 m) 5 x 0.34 mm2</td>
<td>0250472</td>
</tr>
<tr>
<td>Manifold Mounting Kit</td>
<td>Interface plate, gasket, mounting screws</td>
<td>532ZSM00</td>
</tr>
</tbody>
</table>

NOTE: Refer to website to select an ISO 2 size base and accessories.

Dimensions in inches (mm)
Pressure sensing and control

VP51
Programmable proportional pressure control valve G1/4, 1/4 NPT

Fully programmable with on-board diagnostics
Multi-option language display
Password protection option at first level functionality
Instant LED warning functions
Application specific set-up
Pressure output display; no gauge necessary
High speed response
Optional manifold mount utilizes the ISO Size 2 subbase

Technical data

Medium
Compressed air filtered to 40 µm, non-lubricated

Supply pressure
205 psig (14 bar) max.

Output pressure
0 - 145 psig (0 - 10)

Supply sensitivity
<= 50 mbar between 160 and 90 psig (11 and 6 bar) supply

Flow capacity
See chart

Response time
< 100 ms (from 10 to 90% of output pressure into a 0.1 litre load)

Air consumption
< .177 scfm (5 l/min)

Total error
Maximum error ± 1.45 psig (100 mbar) of total span (independent error includes the combined effect of non-linearity, hysteresis, deadzone and repeatability)

Ambient temperature
-4 to 122°F (-20° to 50°C)

Temperature effect
Typically .04 psig (3 mbar)/°C for full scale and zero over operating range

Degree of protection
NEMA 4 in normal operation

Vibration immunity
<3% output shift for 3 g ~ 10 to 150 Hz

Weight
1.76 lbs (0.8 kg)

Mounting position
Any screw mounting or ISO 2 subbase manifold mount

Materials
Body: aluminum
Lid and end cover: zinc diecast

General information

<table>
<thead>
<tr>
<th>Control signal</th>
<th>Output pressure range psig (bar)</th>
<th>Model</th>
<th>Connection</th>
<th>Output units</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 V</td>
<td>0 to 145 (10)</td>
<td>VP5110PK11H00</td>
<td>1/4 NPT</td>
<td>psig</td>
</tr>
<tr>
<td>4-20 mA</td>
<td>0 to 145 (10)</td>
<td>VP5110PK41H00</td>
<td>1/4 NPT</td>
<td>psig</td>
</tr>
<tr>
<td>0-10 V</td>
<td>0 to 145 (10)</td>
<td>VP5110BJ11H00</td>
<td>ISO G 1/4</td>
<td>bar</td>
</tr>
<tr>
<td>4-20 mA</td>
<td>0 to 145 (10)</td>
<td>VP5110BJ41H00</td>
<td>ISO G 1/4</td>
<td>bar</td>
</tr>
</tbody>
</table>

*To order the VP50 with interface for manifold mounting, indicate “X” in the 8th position of the part number. All units shipped with M12 five pin electrical connectors with interface for manifold mounting.

Electromagnetic compatibility
The valve conforms to the EC requirements EN50081–2 (emission) and EN50082–2 (disturbance noise). For this specification shielded cables have to be used.
**VP51**
Programmable proportional pressure control valve G1/4, 1/4 NPT

### User functionality options

<table>
<thead>
<tr>
<th>Password protection</th>
<th>Display set-up</th>
<th>Display language</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pressure units</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Offline set-up</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Online set-up</td>
<td></td>
</tr>
</tbody>
</table>

| Speed set-up | 0 fastest to 7 slowest |
| Monitor set-up | Analogue 0 ... 10 V |
| Monitor output | Hi = P2 > x psi |
|                | Hi = P2 OK |
| Local control | Manual control |
|                | Max./min. ramp |
|                | Max./min. stairs |

| Device database | Read only data: unit specific |
|                | Tag number |
|                | Help display |

| Factory defaults | Restore factory defaults |

### Electrical information

**Electromagnetic compatibility**
CE marked: conforms to EC requirements EN 50081-2 (1994) and EN 50082-2 (1995)

**Electrical input signal**
4 ... 20 mA or 0 ... 10 V factory set

**Electrical power input**
24 V d.c. ±25% (power consumption < 1 W)

**Output pressure feedback signal**
0 ... 10 V full range. User configurable

### Electrical pin configuration

<table>
<thead>
<tr>
<th>Pin</th>
<th>Designation</th>
<th>Color*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+24V d.c. supply</td>
<td>brown/red</td>
</tr>
<tr>
<td>2</td>
<td>1 V/bar monitor output</td>
<td>white</td>
</tr>
<tr>
<td>3</td>
<td>Control signal (+ve)</td>
<td>blue</td>
</tr>
<tr>
<td>4</td>
<td>Common (d.c. supply, signal and feedback return)</td>
<td>black</td>
</tr>
<tr>
<td>5</td>
<td>Chassis (earth)</td>
<td>grey/green/yellow</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Designation</th>
<th>Specification</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectors with cable</td>
<td>M12 x 1.5 pin; 16 ft (5m) 5 x 0.34 mm²</td>
<td>0250081</td>
</tr>
<tr>
<td></td>
<td>M12 x 1.5 pin; 30 ft (10 m) 5 x 0.34 mm²</td>
<td>0250472</td>
</tr>
</tbody>
</table>

*Manifold Mounting Kit Interface plate, gasket, mounting screws 53225M00

For ISO 2 Manifold see website

### General dimensions

For 2.60 (66) for manifold mounting version

**M 12**

**Flow in SCFM (Nl/min)**

**Outlet Pressure in psig (bar)**

**Flow SCFM (Nl/min)**

**Outlet Pressure in psig (bar)**

**General dimensions**

* G1/4 optional 1/4 NPT

Documents Provided by Coast Pneumatics
Pressure sensing and control

R-27 Series
Manostat Precision
Air Pressure Regulators

High precision pressure regulators
Suitable for dead end or flow applications
Excellent long term stability
Handwheel, lever, plunger or pilot operated

Technical Data
Medium:
Dry, oil free air filter to 25 microns
Operation:
Two stage servo mechanized regulator with integral precision measuring capsule
Mounting:
Any position. Panel mounting or through mounting holes on the unit (lever, plunger and pilot versions)
Port sizes:
G 1/4
Output pressure ranges:
See individual details
Supply pressure:
Minimum at least 2.9 psig (0.2 bar) above output pressure.
Maximum 145 psig (10 bar)
Flow capacity:
Up to 10.6 scfm (300 l/m)
Hysteresis and repeatability:
Less than 0.005% setting at midrange
Sensitivity:
Better than 0.3 mbar
Air consumption:
See individual details

Ordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>Control Type</th>
<th>Output Pressure Range psig (bar)</th>
<th>Air Consumption scfm (l/m)</th>
<th>Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard regulator</td>
<td>53-1002-00R</td>
<td>Handwheel 2.5-3 turns 2-25 (.14-2)</td>
<td>.01 (.3)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Standard regulator</td>
<td>53-1003-00R</td>
<td>Handwheel 2.5-3 turns 2-60 (.14-4)</td>
<td>.02 (.6)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Standard regulator</td>
<td>53-1004-00R</td>
<td>Handwheel 2.5-3 turns 2-120 (.14-8)</td>
<td>.04 (1.2)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Lever operated regulator</td>
<td>53-1802-00R</td>
<td>Lever control 125° Rotation 2-25 (.14-2)</td>
<td>.01 (.3)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Lever operated regulator</td>
<td>53-1803-00R</td>
<td>Lever control 125° Rotation 2-60 (.14-4)</td>
<td>.02 (.6)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Lever operated regulator</td>
<td>53-1804-00R</td>
<td>Lever control 125° Rotation 2-120 (.14-8)</td>
<td>.04 (1.2)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Plunger operated regulator</td>
<td>53-1404-00R</td>
<td>Plunger travel .065 (1.65) 2-60 (.14-4)</td>
<td>.02 (.6)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Plunger operated regulator</td>
<td>53-1604-00R</td>
<td>Plunger travel .065 (1.65) 2-120 (.14-8)</td>
<td>.04 (1.2)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Pilot operated relay</td>
<td>53-1904-00R</td>
<td>Pilot pressure signal 2-120 (.14-8)</td>
<td>.04 (1.2)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
<tr>
<td>Pilot operated relay</td>
<td>53-2204-00R</td>
<td>Pilot pressure signal 2-120 (.14-8)</td>
<td>.04 (1.2)</td>
<td>1.59 (.72)</td>
<td></td>
</tr>
</tbody>
</table>

Handwheel Operated

ISO Symbols
All Dimensions in Inches (mm)

Pilot Operated

2 mounting holes ø.37 (9.5)

Signal Port 1/4” NPT

Bias adjustment (factory set)

Gauge port G 1/4

Air connections G 1/4

Inlet port

Outlet port

Bleed screw

Exhaust

Pilot Operated with Bias

2 panel mounting holes tapped 2BA 10 deep

Signal port 1/8” BSP

Gauge port G 1/4

Air connections G 1/4

Inlet port

Outlet port

Bleed screw

Exhaust

Plunger Operated

Clevis fitting

Dome Fitting

ø.75 (19)

Ball bearing ø.37 (9.5)

Inlet port

Outlet port

Gauge port G 1/8

Air connections G 1/4

Lever Operated

Clevis with ø.13 (3.2) pin

Adjustable zero and range stops

Loosen nut to adjust zero and range stops

Inlet port

Outlet port

Exhaust

Air connections G 1/4

Bleed screws

Typical Performance Characteristics

FORWARD FLOW CHARACTERISTICS

102 psig (8 bar) Supply

RELIEF FLOW CHARACTERISTICS

102 psig (8 bar) Supply

Diaphragm Repair Kits

<table>
<thead>
<tr>
<th>Type</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units up to 25 psig</td>
<td>53-1000-95R</td>
</tr>
<tr>
<td>Units up to 60 psig</td>
<td>53-1000-99R</td>
</tr>
<tr>
<td>Units up to 120 psig</td>
<td>53-1000-98R</td>
</tr>
<tr>
<td>Tamperproof Nut</td>
<td>53-1000-97R</td>
</tr>
<tr>
<td>Wall Mounting Bracket</td>
<td>53-ABR-00700</td>
</tr>
</tbody>
</table>
Pressure sensing and control

Additional Valve Products

P/I & P/E

These instruments convert pneumatic pressures into electrical signals for use with data loggers, computers and microprocessors.

Type 68 is a two-wire pressure/current device.

Type 69 a three-wire pressure/voltage type.

Both use only non-critical power supplies and can be supplied weatherproof to IP65.

Type 421

A rugged, electronic I/P converter designed for high density rail or manifold mounting, at a spacing of only 1" (25mm).

Advanced electronic control using surface mount electronics and a precision pressure transducer and offers excellent performance characteristics.

Employs a high sensitivity microminiature Reedex valve for pressure control.

Great reliability, long life, freedom from vibration effects, and are significantly less prone to mechanical derangement than older conventional designs.

Can be mounted on DIN rail, surface mounted, or mounted onto a high density manifold.

Type 422

A major advance in I/P converter design, offering failfreeze in addition to conventional I/P features.

Advanced electronic control and a precision pressure transducer to achieve outstanding performance.

Intended for field application in which rugged construction, vibration immunity, weatherproofing and reliability are essential, together with the enhanced system safety gained from its failfreeze characteristic.

Two wire operation from a 4-20mA control signal with output pressures up to 120 psig (8 bar) as standard.
**Type 423**

Failsafe Electronic I/P Converter

For field mount process control applications:
- State-of-art electronics, precision internal pressure measurement, digital pressure control and excellent environmental and vibration characteristics
- Rugged high sensitivity Reedex Valve for pressure control
- Extreme reliability, freedom from vibration effect and long life, together with very low air consumption and hysteresis.
- Allows an output capacity of up to 10 scfm, so that no volume booster is necessary for high flow applications such as large valves

**Type 425**

Electronic I/P Converter

For service in demanding industrial and process control applications, normally used to accurately convert a loop control current of 4-20mA to 3-15 psig (0.2-1 bar) pneumatic signal to operate a control valve actuator:
- Uses the proven Reedex© microminiature solenoid valve avoiding the use of sensitive flapper nozzle electromechanical components.
- Provides solid state closed loop control ensuring long term accuracy
- For use in adverse environmental conditions giving optimum performance and low cost of ownership