ELECTRONIC CONVERTER
CURRENT TO PRESSURE (I/P)
TYPE 140 FAILSAFE

FEATURES
- Advanced electronic control
- ATEX certified
- Explosion proof and Intrinsically safe
- Complete Electronics Modularity For Ease of Maintenance
- Jack Socket for On-site Monitoring
- Fail-Safe (unit pressure falls to zero on signal failure)
- Field replaceable filter

GENERAL DESCRIPTION
The 140 proportional I/P converter uses advanced closed loop solid-state electronic control to achieve accurate, high resolution pressure control. It is available in intrinsically safe and Type n versions and its vibration immunity and IP66 weatherproof rating make it ideal for field application.

TECHNICAL DATA

PNEUMATIC
- Supply Pressure 1.2-10 bar (18-150 psig); minimum 3 psi above max output pressure
- Output Signal 0.2-1 bar (3-15 psig)
- Air Supply Oil free, dry air, min filtered to 50 microns; Internal in-built air filter
- Flow Capacity > 300 Nl/min (12 scfm)
- Air Consumption < 2.5 Nl/min (0.025 scfm) at 50% signal
- Instrument Accuracy mean < 0.1%
- Independent Linearity mean < 0.05% of span
- Temperature Effect Typically less than 0.035% span/ °C between -40°C to +85°C
- Supply Sensitivity Less than 0.1% of span over full supply pressure range.
- Connections 1/4” NPT female standard (plus integral 1/8” NPT gauge ports, 1/8”NPT (exhaust baffle)
- Calibration Independent control of 0% and 100% set points. Adjustable by potentiometers up to 20% of output range. Unit is factory calibrated to within 1% of span.
- Fail-Safe Signal falls to below 15 mbar (0.2 psig) in < 2 sec, when input signal fails.
- Tight Shut-off Control Potentiometer sets input signal failure at 3.5 mA.

PHYSICAL
- Operating Temperature -40°C to +85°C
- Weatherproofing IP66, Type 4X
- Vibration Output pressure changes less than 3% for vibration amplitude 4 mm 5-15 Hz, 2 g 15-150 Hz
- Electromagnetic Compatibility Compliant with EC requirements EN 50081-2:1994 (Emissions) and EN 50082-2:1995 (Immunity)
- Material of Construction Aluminium and zinc diecasting with nitrile diaphragms, black epoxy powder coating standard
- Mass 2.07 Kg
- Maintenance Modular Electronics and in-built filter offered as field replaceable parts
- Mounting Position Integral bracket allows for surface or 50 mm pipe mounting in any orientation. Designed for mounting with 57-73 mm pitch U bolts.

ELECTRICAL
- Electrical Signal 4-20 mA (two wire)
- Terminal voltage < 6.5 V
- Min Operating Current > 3.5 mA
- Overload Protection 100 mA max overload current
- Insulation Resistance > 100 MOhm at 850 Vdc, electrical terminals to case
- Connections 1/2” NPT or M20 via adapter; internal terminal block with capacity up to 2.5 mm² cable

All instruments are tested on the Watson Smith Automatic Testing System and an individual test certificate is provided at no extra charge. Each unit is tested for linearity, hysteresis, total error, settling error, over pressure, air consumption, response time, calibration, insulation, start-up current, supply sensitivity and voltage load.

DS140G_09/12/03
Model 140 Flow Capacity at 12 mA, 1.3, 2 and 4 bar Supply Pressure

<table>
<thead>
<tr>
<th>Output Pressure</th>
<th>ORDER CODE</th>
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</thead>
<tbody>
<tr>
<td>0.2-1 bar</td>
<td>EX140 01BJ4LE2</td>
</tr>
<tr>
<td>3-15psig</td>
<td>EX140 01PK4LE2</td>
</tr>
<tr>
<td>0.2-1 bar</td>
<td>EX140 01BJ4EE1</td>
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<tr>
<td>3-15psig</td>
<td>EX140 01PK4EE1</td>
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**CERTIFICATION**

<table>
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<tr>
<th>CERTIFICATION</th>
<th>OUTPUT PRESSURE</th>
<th>ORDER CODE</th>
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<tr>
<td>CENELEC (M20 VIA ADAPTER)</td>
<td>0.2-1 bar</td>
<td>EX140 01BJ4LE2</td>
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<td>3-15psig</td>
<td>EX140 01PK4LE2</td>
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<tr>
<td>Triple Certification</td>
<td>0.2-1 bar</td>
<td>EX140 01BJ4EE1</td>
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<tr>
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<td>3-15psig</td>
<td>EX140 01PK4EE1</td>
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**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>CERTIFICATION AGENCY</th>
<th>EXPLOSION PROOF/FLAME PROOF</th>
<th>INTRINSICALLY SAFE</th>
<th>TYPE N/NON-INCENDIVE</th>
<th>OTHERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIRA (CENELEC ATEX approved)</td>
<td>EEx d IIC T4, Ta=+20°C to +40°C, EEx d IIB+H2, T5/T6, Ta=+20°C to +80°C (T5)</td>
<td>EEx ia IIC T4, Ta=+40°C to +85°C, U=30V, I=110mA, Pi=0.84W, Ci=6nF, Li=100μH, Sira 01ATEX1006 2G(T4/T5/T6) 2D(95°C)</td>
<td>EEx iI IIC T5, Ta=+40°C to +85°C, li=24mA, Ci=6nF, Li=100μH, Sira 01ATEX2000X 3G(T5) 3D(95°C)</td>
<td>Dust Ingress Protection: Class I, II, III, Division 1, Group E, F, G, T6, Ta=75°C; T5, Ta=85°C. Suitable for: Class I, II, III, Division 2, Group E, F, G, T6, Ta=75°C; T5, Ta=85°C.</td>
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<tr>
<td>FACTORY MUTUAL</td>
<td>Class I, Division 1, Group B, C, D; T6, Ta=75°C; T5, Ta=85°C</td>
<td>Class I, II, III, Division 1, Group A, B, C, D, E, F, G; T4, Ta=85°C</td>
<td>Class I, Division 2, Group A, B, C, D; T6, Ta=75°C; T5, Ta=85°C</td>
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<tr>
<td>CSA</td>
<td>Class I, Group B, C, D; Class II, Group E, F, G; Class III; EEx d IIC; T4; EEx d IIB+H2; T5/T6</td>
<td>Class I, Group A, B, C, D; Class II, Group E, F, G; Class III; EEx ia IIC; T4</td>
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**Watson Smith**

Distributed by: Coulton Instrumentation Ltd.,
17 Somerford Business Park,
Christchurch, BH233RU,
England.
Telephone: (01202) 480 303
Fax: (01202) 480 808
Email: sales@coulton.com

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