Model G2 Pressure Transducer

APPLICATONS
The G2 pressure transducer combines performance with value to meet the demanding needs of the original equipment manufacturer in applications found in:
- Off-road Equipment
- Construction Machinery
- Performance Racing
- Railroad/Transportation
- Compressor Control
- HVAC and Refrigeration
- Agricultural Implements
- Process Automation and Control
- Hydraulic & Pneumatic Sensing
- Pump Monitoring

FEATURES
- 1% Total Error Band Accuracy
- Broad Temperature Capability
- All-welded pressure construction
- High EMI/RFI rating
- Ranges 30 psi through 20,000 psi
- IP 67 Ingress rating
- Diagnostic rails

The Ashcroft Type G2 pressure transducer has been specifically designed with the high volume OEM in mind. A ±1% Total Error Band accuracy is accomplished by marrying a high performance ASIC to a very stable, field proven polysilicon thin film pressure sensor. The sensor is electron beam welded to a pressure fitting of stainless steel, which provides excellent overpressure capability and outstanding durability in the presence of shock and vibration. The circuitry is held within an internal cage and housed in an enclosure of reinforced Nylon.

PERFORMANCE SPECIFICATIONS
Ref. Condition 21°C ±1°C (72°F ±2°F)

Accuracy:
Total Error Band includes combined effects of temperature, non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors.

±1% of Span: From −20 to 85°C (−4 to 185°F)
±1.5% of Span: From −40 to −20°C (−40 to −4°F)
±1.5% of Span: From 85 to 125°C (185 to 257°F)

Note: Static accuracy ±0.25% of span BFSL (Best Fit Straight Line Method); includes non-linearity, hysteresis and non-repeatable effects at reference temperature 72°F (21°C)

Stability: Less than ±0.25% span/year

Durability: Tested to 50 million cycles

ENVIRONMENTAL SPECIFICATIONS
Temperature:
- Compensated: −40 to 125°C (−40 to 257°F)
- Operating: −40 to 125°C (−40 to 257°F)
- Storage: −40 to 125°C (−40 to 257°F)

Humidity: 0 to 100% R.H., no effect

FUNCTIONAL SPECIFICATIONS
Select from over 25 pressure ranges starting at 30 psi and running through 20,000 psi gauge. Compound (vacuum & pressure) ranges are also available, see “To Order” on back.

Overpressure (F.S.): Proof Burst
- 750 psi & below: 200% F.S. 1000% F.S.
- 1500 psi: 200% F.S. 500% F.S.
- 3000 psi: 200% F.S. 500% F.S.
- 5000 psi: 150% F.S. 500% F.S.
- 7500 psi: 120% F.S. 500% F.S.
- 10,000 psi: 120% F.S. 240% F.S.
- 20,000 psi: 120% F.S. 240% F.S.

Vibration: Random vibration (20 g) over temperature range (−40° to 125°C). Exceeds typical MIL. STD. requirements

Shock: 100gs, 6 ms

Drop Test: Withstands 1 meter on concrete 3 axis

Response Time: Less than 1 msec

Warm-up Time: Less than 500 msec typical

Position Effect: Less than ±0.01% span, typical

ELECTRICAL SPECIFICATIONS
Output Signals Available:

<table>
<thead>
<tr>
<th>Voltage Output</th>
<th>Excitation</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 Vdc, 3 wire</td>
<td>9-36 Vdc</td>
<td>5mA</td>
</tr>
<tr>
<td>0-10 Vdc, 3 wire</td>
<td>14-36 Vdc</td>
<td>5mA</td>
</tr>
<tr>
<td>1-5 Vdc, 3 wire</td>
<td>9-36 Vdc</td>
<td>4mA</td>
</tr>
<tr>
<td>1-6 Vdc, 3 wire</td>
<td>9-36 Vdc</td>
<td>4mA</td>
</tr>
<tr>
<td>0.5-4.5Vdc, 3 wire</td>
<td>9-36Vdc</td>
<td>4mA</td>
</tr>
</tbody>
</table>

Ratiometric Output:
- 9-36Vdc, 3 wire: 5 Vdc ±0.5 Vdc 3.5mA

Current Output:
- 4-20mA, 2 wire: 9-36 Vdc

Reverse Polarity & Miswired Protected: Yes

Insulation Breakdown Voltage: 100 Vac

Insulation Resistance: Greater than 100 megohms at 100 Vdc

CE Marked: Per DoC
EMC Directive 2004/108/EC
- IEC/EN 61326-1:Edition 1.0 Industrial

PED Directive

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All specifications are subject to change without notice.
All sales subject to standard terms and conditions.
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Model G2 Pressure Transducer

UL Recognized component per UL-61010-1, CSA 22.2 6101-1 Electrical Equipment for Measurement, Control and Laboratory use.

PHYSICAL SPECIFICATIONS
Wetted Materials: 304SS pressure connection and 17-4PH SS sensor diaphragm
Housing: 20% Glass Reinforced Nylon, Fire retardant to UL94 V1
Available Process Connections (Male):
See “How To Order” section below. For other connections consult factory.
Ingress Rating:
• IP67, NEMA 4X:
  - Metri-Pack 505 series*  - Shielded cable
  - Flying leads
  - Deutsch DT Series DT04-3P
  - Deutsch DTM Series DTM04-3P
  - AMP Superseal
• M12 - Mates to Hirshmann 933 172-100 or similar
• IP65, NEMA 4X:
  - Hirschmann G series**
  - EN 175301-803, Form C (DIN 43650, Form C)

ELECTRICAL TERMINATION
See “How To Order” section below for electrical termination options.

Power Supply Voltage vs. Loop Resistance (4-20mA ONLY)

Loop Supply Voltage (Vdc) (V)

Vs-

Vdc MIN = 9V + [0.022A X (RL)]

RL = Loop Resistance (ohms)

Rw = Wiring Resistance (ohms)

R = sense resistance (ohms)

Rr = Loop Resistance (ohms)

Rw = Wiring Resistance (ohms)

Pressure Ranges
psi Ranges:
30# = 30 psi
50# = 50 psi
60# = 60 psi
100# = 100 psi
150# = 150 psi
250# = 250 psi
300# = 300 psi
500# = 500 psi
750# = 750 psi
1000# = 1000 psi
1500# = 1500 psi
2000# = 2000 psi
3000# = 3000 psi
5000# = 5000 psi
6000# = 6000 psi
7500# = 7500 psi
10000# = 10000 psi
15000# = 15000 psi
20000# = 20000 psi

Compounds
30#Avac = 30 psi/-14.7 psi
45#Avac = 45 psi/-14.7 psi
60#Avac = 60 psi/-14.7 psi
95#Avac = 95 psi/-14.7 psi
150#Avac = 150 psi/-14.7 psi
300#Avac = 300 psi/-14.7 psi

Compliance
Information
See “How To Order” section below for electrical termination options.

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