DXLdp Ultra-Low Differential Pressure Transducer

FEATURES
- **TruAccuracy™** - Terminal Point Accuracy method includes non-linearity, hysteresis, non-repeatability, zero offset and span setting errors
- The exclusive patented Ashcroft® SpoolCal® actuator provides in-place system calibration
- 2:1 range turndown (OPT.)
- Front access test jacks provide on-line signal reference without removing wiring
- LED range status indicators for instant troubleshooting information
- Si-Glas™ technology enables precise measurement and control of very low pressures

TYPICAL USES
- HVAC/R
- Bio-pharm
- Bio-tech
- Room pressurization and control
- Velocity pressure
- Critical environments
- Building energy management/comfort control systems

PERFORMANCE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Reference Temperature:</th>
<th>70 °F±2 °F (21 °C±1 °C)</th>
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</thead>
<tbody>
<tr>
<td>Accuracy:</td>
<td>Three Options: ±0.25%, ±0.5%, ±1.0% of span (Terminal Point Method: includes non-linearity, hysteresis, non-repeatability, zero offset and span setting errors)</td>
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<tr>
<td>Stability:</td>
<td>≤ ±0.25% of span/year</td>
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<tr>
<td>Media Compatibility:</td>
<td>Clean, dry and non-corrosive gas NOT FOR USE WITH LIQUIDS</td>
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<tr>
<td>Standard Response Time:</td>
<td>250 ms</td>
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ENVIRONMENTAL SPECIFICATIONS

| Temperature Limits:       | Storage: -40 °F to 180 °F (-40 °C to 82 °C) |
|                          | Operating: -20 °F to 160 °F (-29 °C to 71 °C) |
|                          | Compensated: 35 °F to 135°F (1.6 °C to 57 °C) |
| Thermal Coefficients:     | Zero: ±0.02% of span/°F |
|                          | Span: ±0.02% of span/°F (From 70 °F reference temperature) |
| Humidity Effects:         | No performance effect at 10-95% R.H. noncondensing |

FUNCTIONAL SPECIFICATIONS

| Max. Static (Line) Pressure: | 25 psi |
|                             | Proof: 15 psid |
|                             | Burst: 25 psid |
| Mounting Position Effect:   | Mounting Position Effect easily corrected with zero potentiometer |
|                             | ≥0.5 in. H₂O, 0.1% span/g |
|                             | <0.5 in. H₂O, 0.25% span/g |

ELECTRICAL SPECIFICATIONS

| Potentiometers:            | Front accessible, non-interactive |
|                          | Zero: ±5% F.S. |
|                          | Span: ±3% F.S. |
| Supply Current:            | <10 mA for Voltage |
| Warm-up Time:              | 5 sec Max. to meet stated specifications from initial power-up |
| Output Signal:             | Power: 12-36 Vdc |
|                           | 4-20 mA (2 wire) 12-36 Vdc |
|                           | 1-5 Vdc (3 wire) 12-36 Vdc |
|                           | 1-6 Vdc (3 wire) 12-36 Vdc |
|                           | 0-5 Vdc (3 wire) 12-36 Vdc |
|                           | 0-10 Vdc (3 wire) 12-36 Vdc |
|                           | Output signal is independent of power supply changes: 12-36 Vdc range without effect on output signal |
| Circuit Protection:        | Reversed wiring protection |
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**PHYSICAL SPECIFICATIONS**

- **Electrical Connection:** Screw termination
- **Enclosure Rating:** NEMA 1 case
- **Mounting:** DIN rail types EN50022, 35 and 45
- **Pressure Connections:** 1/8 NPT Female, 1/4 barbed Male
- **Weight:** 4.5 oz

**WETTED MATERIAL**

- **Media:** Clean, dry air/gases compatible with Aluminum, Titanium, PBT, Buna, Glass, Gold, Silicone Rubber, Silicon, Silicone RTV and Brass
- **NOT FOR USE WITH LIQUIDS**

**NON-WETTED**

- **Housing:** Glass-filled polycarbonate (UL94-V-1)

**LOAD LIMITATIONS 4-20 mA OUTPUT ONLY**

![Loop Resistance Graph]

\[ V_{\text{out}} = 12V - 0.022A[R_L] \]

*includes a 10% safety factor

\[ R_L = R_s + R_w \]

\[ R_s = \text{Sense Resistance (ohms)} \]

\[ R_w = \text{Wire Resistance (ohms)} \]

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**TruAccuracy What Does It Mean?**

Ashcroft’s TruAccuracy™ specification is exclusively based on terminal point methodology instead of statistically derived schemes like ‘best fit straight line’.

TruAccuracy™ means the Ashcroft DXLdp has ±0.25% of span accuracy out of the box. Zero and span setting errors are already included in the ±0.25% of span accuracy spec.

The DXLdp is ready to be installed with no additional calibration adjustments required.

A unit from another manufacturer advertised as ±0.25% best fit straight line may actually be a ±1.25% to ±2.25% device. Using best fit straight line method, the accuracy spec does not include zero and span setting errors, which can be as much as ±1.00% each.

**Ashcroft® Si-Glas™ Sensor Technology**

Featuring a highly reliable variable capacitance sensor using the patented Ashcroft® Si-Glas™ sensor. This ultra-thin single crystal diaphragm provides inherent sensor repeatability and stability.

**Sensor Cross Section**

The silicon diaphragm sensor has no glues or other organics to contribute to drift or mechanical degradation over time.
### ORDERING CODE

<table>
<thead>
<tr>
<th>Example: DX3</th>
<th>F01</th>
<th>42</th>
<th>ST</th>
<th>P5IW</th>
<th>XPV</th>
</tr>
</thead>
</table>

#### Model
- DX3 - DXLdp Series, ±0.25% of span, ±0.02% span T.C./°F
- DX5 - DXLdp Series, ±0.50% of span, ±0.02% span T.C./°F
- DX7 - DXLdp Series, 1.00% of span, ±0.02% span T.C./°F

#### Pressure Connection
- F01 - 1/8 NPT Female
- MB2 - 1/4 Barbed Male

#### Output Signal
- 05 - 0-5 Vdc
- 10 - 0-10 Vdc
- 15 - 1-5 Vdc
- 16 - 1-6 Vdc
- 42 - 4-20 mA

#### Electrical Termination
- ST - Screw Terminal

#### Pressure Range Differential

**Unidirectional Ranges**
- P1IW - 0.10 in. H₂O
- P25IW - 0.25 in. H₂O
- P5IW - 0.50 in. H₂O
- P75IW - 0.75 in. H₂O
- 1IW - 1.00 in. H₂O
- 1PSIW - 1.50 in. H₂O
- 2IW - 2.00 in. H₂O
- 2PSIW - 2.50 in. H₂O
- 3IW - 3.00 in. H₂O
- 5IW - 5.00 in. H₂O
- 10IW - 10.00 in. H₂O
- 15IW - 15.00 in. H₂O
- 20IW - 20.00 in. H₂O
- 25IW - 25.00 in. H₂O
- 50IW - 50.00 in. H₂O

**Bi-directional Ranges**
- P05IW - ±0.05 in. H₂O
- P1IW - ±0.10 in. H₂O
- P25IW - ±0.25 in. H₂O
- P5IW - ±0.50 in. H₂O
- P75IW - ±0.75 in. H₂O
- 1IW - ±1.00 in. H₂O
- 2IW - ±2.00 in. H₂O
- 2PSIW - ±2.50 in. H₂O
- 3IW - ±3.00 in. H₂O
- 5IW - ±5.00 in. H₂O
- 10IW - ±10.00 in. H₂O
- 25IW - ±25.00 in. H₂O

**Options**
- 21 - 2:1 Turndown
- CL - Custom pressure range calibration
- DL - LED range status indicators (includes front access test jacks)
- NH - Stainless steel tag
- NL - Front access test jacks (no LED indication)
- NN - Paper tag
- PV - SpoolCal® process valve actuator
- RH - 9 pt. Traceable calibration certificate (OPT. for DX7/1.00% accuracy version, STD. for DX3 and DX5)
- X1 - Fast response time (10 ms)
- X2 - Slow response time (1 sec)
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DIMENSIONS
For reference only, consult Ashcroft for specific dimensional drawings. All dimensions are identified in inches.

SpoolCal® and LED (OPT.)

Basic Unit