

Data Sheet

XLdp Ultra-Low Differential Pressure Transmitter

FEATURES

- TruAccuracy™ - Terminal Point Accuracy method includes non-linearity, hysteresis, non-repeatability, zero offset and span setting errors.
- Current and voltage output signals available
- Custom ranges available
- Si-Glas™ technology enables precise measurement and control of very low pressures

TYPICAL USES

- HVAC/R
- Fume Hood Control
- Lab/Clean/Hospital Room Pressurization
- Medical Lung Function/Breathing Equipment
- Fan Tracking
- Filter Monitoring
- Ultra-Low Velocity Measurements
- Leak Detection
- Laminar Flow
- Building Energy Management/Comfort Control Systems

PERFORMANCE SPECIFICATIONS

| | |
|-------------------------|--|
| Reference Temperature: | 70°F ±2°F (21°C ±1°C) |
| Accuracy: | ±0.25% of span, ±0.5% of span (Terminal Point Method: includes non-linearity, hysteresis, non-repeatability, zero offset and span setting errors) |
| Stability: | ±0.25% of span/year at reference conditions |
| Media Compatibility: | Clean, dry and non-corrosive gas NOT FOR USE WITH LIQUIDS |
| Standard Response Time: | 250ms |

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 (1.7°C to 57°C) |
| Thermal Coefficients: | Zero: ±0.015% of span/°F Span: ±0.015% of span/°F (From 70°F reference temperature) |
| Vibration Sweep: | <0.05% span/g temporary effect 0-60Hz |
| Humidity Effects: | No performance effect at 10-95% R.H. noncondensing |
| EMC: | Directive 2004/108/EC IEC/EN 61326-1: Edition 1.0 Industrial IEC/EN 61326-2-3: Edition 1.0 Annex BB Industrial |

FUNCTIONAL SPECIFICATIONS

| | |
|------------------------------|---|
| Mounting Position Effect: | ≥0.5 in. H ₂ O: ±0.1% of span/g 0.25 in. H ₂ O: ±0.25% of span/g 0.1 in. H ₂ O: ±0.5% of span/g Calibrated horizontally (STD.), unless otherwise specified. Mounting position effect easily corrected with zero potentiometer |
| Max. Static (Line) Pressure: | Proof: 15 psid Burst: 25 psid |



XLdp
Pressure Transmitter

*See Approvals on page 2 regarding CE and RoHS certifications.



KEY BENEFITS

- Broad temperature capability
- Superior long-term stability and repeatability
- High overpressure protection
- On board voltage regulation allows use of low cost unregulated power supply
- 3 year warranty

ELECTRICAL SPECIFICATIONS

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

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PHYSICAL SPECIFICATIONS

| | |
|------------------------|---|
| Electrical Connection: | Screw Termination |
| Pressure Connections: | ¼ barbed Male, ⅛ barbed Male and ¼ NPT Female |
| Weight: | 14 oz |
| Environmental Rating: | NEMA 2 |

WETTED MATERIAL

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

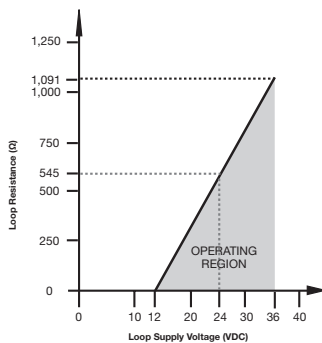
NON-WETTED MATERIAL

Housing: 300 Series Stainless steel / Lexan

APPROVALS

*Only units with 4-20 mA output and the 'XCE' option are CE and ROHS compliant.
 CE Marked: Per DoC

LOAD LIMITATIONS 4-20 mA OUTPUT ONLY



$$V_{loop} = 12V + (0.022A \times R_L)$$

$$R_L = R_s + R_w$$

R_L = Loop Resistance (ohms)
 R_s = Sense Resistance (ohms)
 R_w = Wire Resistance (ohms)

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

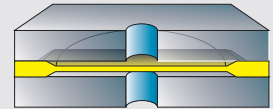
A unit from another manufacturer advertised as ±0.25% best fit straight line may actually be a ±1.25% to ±2.25% device. Using best fit straight line method, the accuracy spec does not include zero and span setting errors, which can be as much as ±1.00% each.

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.



XLdp Ultra-Low Differential Pressure Transmitter

| ORDERING CODE | Example: | XL3 | F02 | 42 | ST | 2IW | -XNH |
|--|----------|-----|-----|----|----|-----|------|
| Model | | | | | | | |
| XL3 - XLdp Series, ±0.25% of span, ±0.015% of span T.C. /°F | | XL3 | | | | | |
| XL5 - XLdp Series, ±0.5% of span, ±0.015% of span T.C. /°F | | | | | | | |
| Pressure Connection | | | | | | | |
| F02 - ¼ NPT Female | | | F02 | | | | |
| MB1 - Board level/No case | | | | | | | |
| MB2 - ¼ Barbed Male | | | | | | | |
| MB8 - ¼ Barbed Male | | | | | | | |
| Output Signal | | | | | | | |
| 15 - 1-5 Vdc | | | | | | | |
| 16 - 1-6 Vdc | | | | | | | |
| 42 - 4-20 mA | | | | 42 | | | |
| Electrical Termination | | | | | | | |
| ST - Screw Terminal | | | | | ST | | |
| Pressure Range | | | | | | | |
| Unidirectional Ranges (differential) | | | | | | | |
| P1IW - 0.10 in. H ₂ O | | | | | | | |
| P25IW - 0.25 in. H ₂ O | | | | | | | |
| P5IW - 0.50 in. H ₂ O | | | | | | | |
| P75IW - 0.75 in. H ₂ O | | | | | | | |
| 1IW - 1.00 in. H ₂ O | | | | | | | |
| 1P5IW - 1.50 in. H ₂ O | | | | | | | |
| 2IW - 2.00 in. H ₂ O | | | | | | 2IW | |
| 2P5IW - 2.50 in. H ₂ O | | | | | | | |
| 3IW - 3.00 in. H ₂ O | | | | | | | |
| 5IW - 5.00 in. H ₂ O | | | | | | | |
| 10IW - 10.00 in. H ₂ O | | | | | | | |
| 15IW - 15.00 in. H ₂ O | | | | | | | |
| 25IW - 25.00 in. H ₂ O | | | | | | | |
| 50IW - 50.00 in. H ₂ O | | | | | | | |
| Bi-directional Ranges | | | | | | | |
| P05IWL - ±0.05 in. H ₂ O | | | | | | | |
| P1IWL - ±0.10 in. H ₂ O | | | | | | | |
| P25IWL - ±0.25 in. H ₂ O | | | | | | | |
| P5IWL - ±0.50 in. H ₂ O | | | | | | | |
| 1IWL - ±1.00 in. H ₂ O | | | | | | | |
| 2IWL - ±2.00 in. H ₂ O | | | | | | | |
| 2P5IWL - ±2.50 in. H ₂ O | | | | | | | |
| 3IWL - ±3.00 in. H ₂ O | | | | | | | |
| 5IWL - ±5.00 in. H ₂ O | | | | | | | |
| 10IWL - ±10.00 in. H ₂ O | | | | | | | |
| 25IWL - ±25.00 in. H ₂ O | | | | | | | |
| 50IWL - ±50.00 in. H ₂ O | | | | | | | |
| Option (if indicating an option(s) must include an "X") | | | | | | | |
| CE - CE Approval (with 4-20 mA only) | | | | | | | -X__ |
| CL - Custom pressure range calibration | | | | | | | |
| NH - Stainless steel tag | | | | | | | NH |
| NN - Paper tag | | | | | | | |
| V9 - Calibrated vertically | | | | | | | |
| X1 - Fast response time (5 msec) | | | | | | | |
| X2 - Slow response time (1 sec) | | | | | | | |

XLdp Ultra-Low Differential Pressure Transmitter

DIMENSIONS

For reference only, consult Ashcroft for specific dimensional drawings.
All dimensions are identified in inches.

