

Model XLdp Ultra-Low Differential Pressure Transmitter



LOOK FOR THIS AGENCY MARK ON OUR PRODUCTS

APPLICATIONS

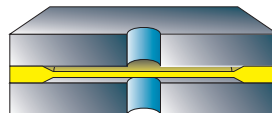
HVAC, fume hood control, lab/clean/hospital room pressurization, medical lung function or breathing equipment, fan tracking, filter monitoring, or very low velocity measurements

FEATURES:

- Certified 0.25% and 0.5% accuracy
- 0.1"~50" H₂O pressure ranges
- CE approved
- High overpressure protection
- NEMA 2 stainless steel construction
- Three output signals available
- Easy installation
- On-board voltage regulation allows use of lower cost, non-precise, unregulated power supply
- 9 point NIST Traceable Calibration Certificate

Featuring a highly reliable variable capacitance sensor using the patented Ashcroft® SiGlas™ 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.

The patented Si-Glas™ technology combines the high sensitivity of a variable capacitance transducer with the repeatability of a micro-machined, ultra-thin silicon diaphragm. The XLdp enables precise measurement and control of very low pressure.

The Si-Glas sensor is composed of only sputtered metals and glass molecularly bonded to silicon. There are no epoxies or other organics in the sensor to contribute to drift or mechanical degradation over time. The glass-clad silicon diaphragm withstands extreme overpressure as well as severe shock and vibration.

PERFORMANCE SPECIFICATIONS

Ref. Temperature: 70°F ±2°F (21°C ±1°C)

Accuracy Class (of Span)

Two Options: ±0.25%, ±0.50%

Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors.

Stability – Max. Change (Span/year): ±0.25 %

Standard Ranges (Inches W.C.)

Unidirectional Ranges:

Differential or Gauge

| | | | |
|--------|--------|---------|---------|
| 0/0.10 | 0/1.00 | 0/ 3.00 | 0/25.00 |
| 0/0.25 | 0/1.50 | 0/ 5.00 | 0/50.00 |
| 0/0.50 | 0/2.00 | 0/10.00 | |
| 0/0.75 | 0/2.50 | 0/15.00 | |

Bidirectional Ranges:

Compound

| | | |
|-------|-------|--------|
| ±0.05 | ±1.00 | ± 5.00 |
| ±0.10 | ±2.00 | ±10.00 |
| ±0.25 | ±2.50 | ±25.00 |
| ±0.50 | ±3.00 | ±50.00 |

Custom Ranges: Special range calibrations (XCL) – consult factory

Standard Response Time: 250msec
(Consult factory for damping options)

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage: –40 to 180°F

Operating: –20 to 160°F

(10-95% R.H. non-condensing)

Compensated Range: +35 to 135°F

Thermal Coefficients:

ZERO ±0.015% Span/°F

SPAN ±0.015% Span/°F

Vibration Sweep: Less than 0.05% Span temporary effect with 5 g's 0-60 Hz

CE Marked*: Per DoC

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

Overpressure Limits:

Proof 15 psid

Burst 25 psid

Max. static line pressure 25 psi

Mounting Position Effect:

0.5" W.C. and higher ± 0.10% Span/g

0.25" W.C. ± 0.25% Span/g

0.1" W.C. ± 0.50% Span/g

Note: Calibrated horizontally standard unless otherwise specified. Mounting Position Effect easily corrected with zero potentiometer.

ELECTRICAL SPECIFICATIONS

Output Signal:

4-20mA (2 wire)*

1-5 Vdc (3 wire)

1-6 Vdc (3 wire)

*Optional CE version

Power:

12-36 Vdc

12-36 Vdc

12-36 Vdc

Output Signal is Independent of Power Supply Changes:

12-36 Vdc range without effect on output signal

Reverse Wiring Protected Zero and Span Potentiometers:

Externally accessible, non-interactive, ±10% F.S. adjustment

Supply Current:

<6mA for voltage output
Warm-up Time: 5 seconds max. to meet stated specifications

*Applies to 4-20mA output units with XCE option

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PHYSICAL SPECIFICATIONS

Pressure Connections:

- 1/4" barbed stainless steel
- 1/8" barbed stainless steel (optional)
- 1/4 NPT female stainless steel (optional)

Electrical Connections:

Terminal strip

Weight: 14 oz, NEMA 2 Case

MATERIALS:

Case: 300 series stainless steel
Media: Clean, dry, non-corrosive gas
 (consult factory for use on other media)
DO NOT USE ON LIQUIDS

NOTES:

- Calibration curve (0.25%) or data (0.50%) supplied with each transmitter
- Consult factory on other pressure range, temperature compensation or packaging variations

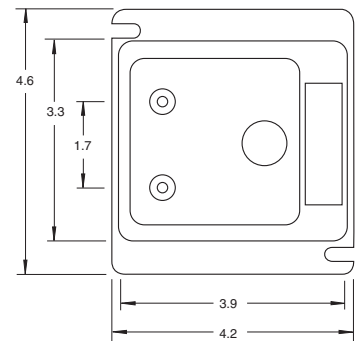
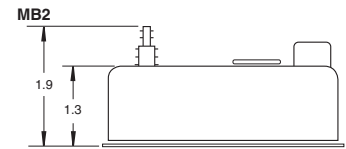
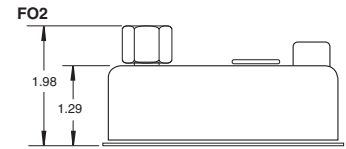
OPTIONS

- (XCL) Custom calibration
- (XCE) CE compliant 4-20mA only
- (XV9) Calibrated vertically
- (XX1) – Fast response time 5 msec.
- (XX2) – Slow response time 1 sec.

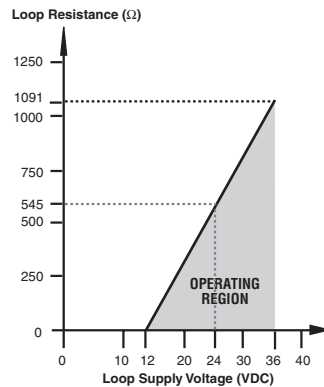
NOTES:

- Consult factory for additional options including pressure ranges, temperature compensation, packaging variations and signal response time.

DIMENSIONS (in inches)



Load Limitations 4-20mA Output Only



$$V_{loop} = 12V + (.022A \times R_L)$$

$$R_L = R_s + R_w$$

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

How To Order

| | | | | | | | | |
|---|---|--|---|---|--|---|--|---|
| <div style="border: 1px solid black; padding: 2px; width: 20px; margin: 0 auto;">X</div> <div style="border: 1px solid black; padding: 2px; width: 20px; margin: 0 auto;">L</div> | <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 0 auto;"></div> | <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 0 auto;"></div> | <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 0 auto;"></div> | <div style="border: 1px solid black; padding: 2px; width: 20px; margin: 0 auto;">S</div> <div style="border: 1px solid black; padding: 2px; width: 20px; margin: 0 auto;">T</div> | <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 0 auto;"></div> | - | <div style="border: 1px solid black; padding: 2px; width: 20px; margin: 0 auto;">X</div> | <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 0 auto;"></div> |
| Type Configuration (XLdp) | Accuracy/TC* (3) 0.25%, ±0.015%FS./°F (5) 0.50%, ±0.015%FS./°F | Pressure Connection (MB2) 1/8 Barbed Stainless Steel (MB8) 1/4 Barbed Stainless Steel (FO2) 1/4 NPTF | Output Signal (15) 1-5 Vdc (16) 1-6 Vdc (42) 4-20mA | Electrical Termination (ST) Screw Terminal | Pressure Range Diff. or Gauge: (P1 IW) 0.10"W.C. (P25 IW) 0.25"W.C. (P5 IW) 0.50"W.C. (P75 IW) 0.75"W.C. (1 IW) 1.00"W.C. (1P5 IW) 1.50"W.C. (2I IW) 2.00"W.C. (2P5 IW) 2.50"W.C. (3I IW) 3.00"W.C. (5 IW) 5.00"W.C. (10 IW) 10.00"W.C. (15 IW) 15.00"W.C. (25 IW) 25.00"W.C. (50 IW) 50.00"W.C. Compound: (P05 IWL) ±0.05"W.C. (P1 IWL) ±0.10"W.C. (P25 IWL) ±0.25"W.C. (P5 IWL) ±0.50"W.C. (1 IWL) ±1.00"W.C. (2P IWL) ±2.00"W.C. (2P5 IWL) ±2.50"W.C. (3 IWL) ±3.00"W.C. (5 IWL) ±5.00"W.C. (10 IWL) ±10.00"W.C. (25 IWL) ±25.00"W.C. (50 IWL) ±50.00"W.C. | | Optional X-Variations (XCE) CE Approval option available with 4-20mA output (XCL) Custom calibration (XV9) Calibrated vertically (XX1) Fast response time (XX2) Slow response time | |
| *XLdp units include 9 point NIST traceable calibration certificate | | | | | | | | |