Type XLdp – Ultra-Low Variable Capacitance Pressure Transducer/Transmitter

APPLICATIONS:

HVAC, fume hood control, lab/clean room pressurization, laminar flow, furnace/stack draft, leak detection, medical, fan tracking, filter monitoring, glovebox and velocity measurements

BENEFITS & FEATURES:

- ***Certified 0.25% and 0.5% accuracy***
- ***0.1˝-50˝-H_2O pressure ranges***
- ***CE approved***
- ***High overpressure protection***
- ***Flame proof NEMA 2 stainless steel construction***
- ***Three types of output signals available***
- ***Easy installation***
- ***Board level OEM versions available***

The Ashcroft® XLdp is a variable capacitance sensor within a glass-clad silicon chip. The patented Si-Glas™ technology combines the inherent high sensitivity of a variable capacitance transducer with the repeatability of a micro-machined, ultra-thin silicon diaphragm.

The Ashcroft Si-Glas sensor now enables precise measurement and control of very low pressure. Although the ultra-thin silicon diaphragm deflects only a micron, the sensor is 100 times more sensitive to pressure than available silicon piezo-resistive pressure sensors.

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 CHARACTERISTICS

Standard Ranges (Inches W.C.)

Unidirectional Ranges:

Differential or Gage

0/0.1	0/1.0	0/3.0	0/50.0
0/0.25	0/1.5	0/5.0	
0/0.5	0/2.0	0/10.0	
0/0.75	0/2.5	0/25.0	

Bidirectional Ranges:

Compound

±0/0.05	±0/1.0	±0/5.0
±0/0.1	±0/2.0	±0/10.0
±0/0.25	±0/2.5	±0/25.0
±0/0.5	±0/3.0	±0/50.0

Consult factory for nonstandard ranges.

Accuracy Class (F.S.)*: (Using T.P. method)	0.25%	0.50%
Best fit straight line (BFSL)	±0.15	±0.3
Hysteresis	±0.02	±0.02
Nonrepeatability	±0.03	±0.05
Interchangeability	±0.25%	±0.50%

Stability (F.S./year): ±0.5 %

Mounting Position Error:

0.5˝ W.C. and higher	≤0.10% F.S./g
0.25˝ W.C.	≤0.25% F.S./g
0.1˝ W.C.	≤0.50% F.S./g

ELECTRICAL SPECIFICATIONS

Output Signal:	**Power:**
4-20mA (2 wire)	12-36 Vdc
1-5 Vdc (3 wire)	12-36 Vdc
1-6 Vdc (3 wire)	12-36 Vdc

Power Supply:
Variations will not affect output signal

Supply Current: <6mA for voltage output

Response Time: 250msec
(Consult factory for response time options)

Reverse Wiring Protected

Resolution: Infinite

Warm-up Time: 10 second max. to meet stated specifications

Zero and Span Potentiometers:
Externally accessible, noninteractive, ±10% F.S. adjustment

PHYSICAL CHARACTERISTICS

Weight: 14 oz, NEMA 2 Case

MATERIALS:
Case: 300 series stainless steel

PRESSURE CONNECTION OPTIONS:
- ¼˝ barbed nickel plated brass
- ¼ NPTF stainless steel

NOTES:
- Consult factory for use with media other than air or nonconducting gases
- OEM circuit board available (MB1)
- Calibration curve (0.25%) or data (0.50%) supplied with each transmitter
- Consult factory on other pressure range, temperature compensation or packaging variations

ENVIRONMENTAL CHARACTERISTICS

Temperature Limits:

Storage:	–40 to 180°F
Operating:	–20 to 160°F

(10-95% R.H. noncondensing)
Compensated Range: 35 to 135°F

Thermal Coefficients:

ZERO	±0.015% F.S./°F
SPAN	±0.015% F.S./°F

FUNCTIONAL CHARACTERISTICS

Overpressure Limits:

Proof	10 psid
Burst	25 psis

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

TO ORDER THIS TYPE XLdp TRANSDUCER/TRANSMITTER:

Select:

XL ☐ ☐☐☐ ☐☐ ST ☐☐☐☐☐☐ ☐☐☐

1. **Type Configuration (XLdp)**
2. **Accuracy % F.S.**
   (3) 0.25%, ±0.015%/°F **(5)** 0.50%, ±0.015%/°F
3. **Pressure Connection**
   (FO2) ¼ NPTF **(MB2)** ¼ Barbed **(MB1)** No Case
4. **Output Signal**
   (15) 1/5 Vdc **(16)** 1/6 Vdc **(42)** 4-20mA
5. **Output Connection**
   (ST) Screw Terminal
6. **Pressure Range**
   Diff. or Gauge: (P1IW) 0.10˝W.C. **(P25IW)** 0.25˝W.C. **(P5IW)** 0.50˝W.C. **(P75IW)** 0.75˝W.C. **(1IW)** 1.00˝W.C. **(1P5IW)** 1.50˝W.C. **(2IW)** 2.00˝W.C. **(2P5IW)** 2.50˝W.C. **(3IW)** 3.00˝W.C. **(5IW)** 5.00˝W.C. **(10IW)** 10.00˝W.C. **(25IW)** 25.00˝W.C. **(50IW)** 50.00˝W.C.
   Compound: (PO5IWL) ±0.05˝W.C. **(P1IWL)** ±0.10˝W.C. **(P25IWL)** ±0.25˝W.C. **(P5IWL)** ±0.50˝W.C. **(1IWL)** ±1.00˝W.C. **(2PIWL)** ±2.00˝W.C. **(2P5IWL)** ±2.50˝W.C. **(3IWL)** ±3.00˝W.C. **(5IWL)** ±5.00˝W.C. **(10IWL)** ±10.00˝W.C. **(25IWL)** ±25.00˝W.C. **(50IWL)** ±50.00˝W.C.
7. **Optional X-Variations (XCE)** CE Approval Option

Reference Bulletin CT-1

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