ASHCROFT®

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***
- ***On-board voltage regulation allows use of lower cost, non-precise, unregulated power supply***

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

Accuracy Class (F.S.):	**0.25%**	**0.50%**
Non-linearity		
Terminal point*	±0.2%	±0.4%
Best fit straight line (BFSL)	±0.15%	±0.3%
Hysteresis	±0.02%	±0.02%
Non-repeatability	±0.03%	±0.05%

*Includes Hysteresis

Stability – Max. Change (F.S./year): ±0.5 %

Standard Ranges (Inches W.C.)

Unidirectional Ranges:

Differential or Gage

0/0.1	0/1.0	0/3.0	0/25.0
0/0.25	0/1.5	0/5.0	0/50.0
0/0.5	0/2.0	0/10.0	
0/0.75	0/2.5	0/15.0	

Bidirectional Ranges:

Compound

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

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

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

ENVIRONMENTAL CHARACTERISTICS

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% F.S./°F
SPAN	±0.015% F.S./°F

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

EMC: CE model compliant to EN61326: 1997 Annex A. Harmonized heavy industrial transmitter specification

FUNCTIONAL CHARACTERISTICS

Overpressure Limits:

Proof	15 psid
Burst	25 psi
Max. static line pressure	25 psi

Mounting Position Effect:

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

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

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

*Optional CE versions available

Output Signal is Independent at 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

PHYSICAL CHARACTERISTICS

Pressure Connections: 1/4˝ barbed stainless steel
1/8˝ barbed stainless steel (optional)
1/4 NPT female stainless steel (optional)

Electrical Connections: Teminal 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:

- Consult factory for use with media other than air or nonconducting gases
- 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.

TO ORDER THIS TYPE XLdp TRANSDUCER/TRANSMITTER:

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Select:

1. **Type Configuration (XLdp)**
2. **Accuracy % F.S.**
   (3) 0.25%, ±0.015%/°F **(5)** 0.50%, ±0.015%/°F
3. **Pressure Connection**
   (FO2) 1/4 NPTF **(MB2)** 1/4 Barbed **(MB8)** 1/8 Barbed
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. **(15IW)** 15.00˝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.
7. **Optional X-Variations (XCE)** CE Approval Option (Includes all options in list)

Consult factory for guidance in product selection
Phone (203) 385-0217, Fax (203) 385-0602 or
visit our web site at www.ashcroft.com

DRESSER Instruments