ASHCROFT®

DXLdp Low Pressure Differential Transducer/Transmitter

APPLICATIONS:
High reliability HVAC, bio-pharm, bio-tech, room pressurization and control, velocity pressure

BENEFITS AND FEATURES:

- ***The exclusive patented Ashcroft® SpoolCal™ actuator provides in-place system calibration without disturbing process tubes***
- ***Front access test jacks provide on-line signal reference without removing wiring***
- ***LED range status indicators for instant troubleshooting information***
- ***DIN Rail Mount – dramatically reduces installation and calibration costs***
- ***2:1 range turndown options***
- ***CE standard with all outputs***
- ***On-board voltage regulation allows use of lower cost, unregulated power supply***

The Ashcroft® DXLdp 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 micromachined, ultra-thin silicon diaphragm.

The Ashcroft Si-Glas sensor 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 piezoresistive 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 SPECIFICATIONS

Reference Temperature: 70°F ±2°F (21°C ±1°C)
Accuracy Class (F.S.):

	0.25%	0.5%	1.0%
Non-linearity			
Best fit straight line (BFSL)	±0.15	±0.3%	±0.6%
Hysteresis	±0.02	±0.02%	±0.05%
Non-repeatability	±0.03	±0.05%	±0.10%

Stability – Max. Change (F.S./year): ±0.25%
Standard Ranges (Inches W.C.)
Unidirectional Ranges:
Differential or Gauge

0/0.1	0/1.0	0/3.0	0/20.0
0/0.25	0/1.5	0/5.0	0/25.0
0/0.5	0/2.0	0/10.0	0/50.0
0/0.75	0/2.5	0/15.0	

Bidirectional Ranges:
Compound

±0.05	±0.5	±2.0	±5.0
±0.1	±0.75	±2.5	±10.0
±0.25	±1.0	±3.0	±25.0

Custom Ranges: Special range calibration, (XCL) – Consult factory

Standard Response Time: 250m sec
(Consult factory for optional damping times)

ENVIRONMENTAL SPECIFICATIONS

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	±0.02%F.S./°F
SPAN	±0.02%F.S./°F

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	0.1% F.S./g
Below 0.5˝ W.C.	0.25% F.S/g.

Note: Mounting Position Effect easily corrected with zero potentiometer.

ELECTRICAL SPECIFICATIONS

Output Signal:	Power:
4-20mA (2 wire)	12-36 Vdc
1-5 Vdc	12-36 Vdc
1-6 Vdc	12-36 Vdc
0-5 Vdc	12-36 Vdc
0-10 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:
Front accessible, non-interactive
Zero: ±5%F.S. Span: ±3%F.S.
Supply Current: < 10mA for voltage
Warm-up Time: 5 sec. max. to meet stated specifications from initial power-up

PHYSICAL SPECIFICATIONS

Pressure Connections: ⅛ NPT Female
Weight: 4.5 oz., NEMA 1 Case
MATERIALS:
Enclosure: Glass-filled polycarbonate (UL94-V-1)
Media: Clean, dry and non-corrosive gas (consult factory for use on other media).
NOT FOR USE ON LIQUIDS
Mounting: DIN rail types EN50022, 35 & 45

OPTIONS

- **Option XDL:** LED for quick process diagnostics:
  Zero Pressure.....Center Amber LED
  In Range ± .....Adjacent Green LED's
  Out of Range ± .....Adjacent Red LED's
  Includes: front access test jacks for on-line data access without disturbing wiring
- **Option XNL:** Front access jacks without LED's
- **Option XPV:** SpoolCal™ process valve actuator provides in-place system calibration without disturbing process tubes. From Off position the removable SpoolCal™ actuator tool provides the following functions:
  - A 90 degree clockwise rotation puts the DXLdp in the CAL mode isolating it from the process and allowing direct external pressure input
  - A 90 degree counter clockwise rotation puts the DXLdp in the MONITOR mode to tee the process pressure to the DXLdp sensor and out, providing external measurement or recording capabilities. Includes SpoolCal™ actuator tool with 7˝ silicon tubing (as shown in front photo). (Refer to Ashcroft® ATE series calibrator for data collection and instrumentation)
- **Option X21:** 2:1 turn down, 0.25% accuracy is maintained on initialized range
- **Option XCL:** Special range calibration
- **Option XX1:** Fast response (10msec)
- **Option XX2:** Slow response (1sec)

HOW TO ORDER THIS DXLdp TRANSDUCER/TRANSMITTER:

Select:

DX		F01		ST			X	

1. **Type Configuration (DXLdp)**
2. **Accuracy/TC**
   (3) 0.25%, ±0.02%/°F **(5)** 0.50%, ±0.02%/°F
3. **Pressure Connection**
   (F01) ⅛ NPT Female
4. **Output Signal**
   (05) 0/5 Vdc **(10)** 0/10 Vdc **(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)** 1.5˝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: (P05WL) ±0.05˝W.C. **(P1WL)** ±0.10˝W.C. **(P25IWL)** ±0.25˝W.C. **(P5IWL)** ±0.5˝W.C. **(P75IWL)** ±0.75˝W.C. **(1IWL)** ±1.0˝W.C. **(2IWL)** ±2.0˝W.C. **(2P5IWL)** ±2.5˝W.C. **(5IWL)** ±5.00˝W.C. **(10IWL)** ±10.00˝W.C. **(25IWL)** ±25.00˝W.C.
7. **Optional Variation**
   (XDL) LED **(XPV)** Process Valve Actuator **(X21)** 2:1 Turn Down **(XNL)** Test Jacks **(XCL)** Special Range Calibration **(XX1)** Fast Response (10msec) **(XX2)** Slow Response (1sec)