

## Model DXLdp Ultra-Low Differential Pressure Transmitter



### APPLICATIONS:

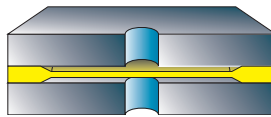
*High reliability HVAC, bio-pharm, bio-tech, room pressurization and control, velocity pressure*

### 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*

*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 Ashcroft Si-Glas sensor 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)

**Three Options: ±0.25%, ±0.5%, ±1.0%**

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

**Note:** Calibration report included with 0.25% and 0.5% units.

**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 | 0/20.00 |
| 0/0.25 | 0/1.50 | 0/ 5.00 | 0/25.00 |
| 0/0.50 | 0/2.00 | 0/10.00 | 0/50.00 |
| 0/0.75 | 0/2.50 | 0/15.00 |         |

##### Bidirectional Ranges:

##### Compound

|       |       |       |        |
|-------|-------|-------|--------|
| ±0.05 | ±0.50 | ±2.00 | ± 5.00 |
| ±0.10 | ±0.75 | ±2.50 | ±10.00 |
| ±0.25 | ±1.00 | ±3.00 | ±25.00 |

**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% Span/°F

SPAN ±0.02% Span/°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% Span/g

Below 0.5" W.C. 0.25% Span/g

**Note:** Mounting Position Effect easily corrected with zero potentiometer.

### ELECTRICAL SPECIFICATIONS

#### Output Signal:

4-20mA (2 wire)

1-5 Vdc

1-6 Vdc

0-5 Vdc

0-10 Vdc

#### Power:

12-36 Vdc

12-36 Vdc

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:

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

## Model DXLdp Ultra-Low Differential Pressure Transmitter

### PHYSICAL SPECIFICATIONS

**Pressure Connections:** 1/8 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 XZ1:** 2:1 turn down, 0.25% accuracy is maintained on initialized range

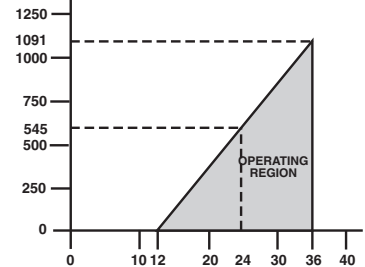
• **Option XCL:** Special range calibration

• **Option XX1:** Fast response (10msec)

• **Option XX2:** Slow response (1sec)

### Load Limitations 4-20mA Output

Loop Resistance (Ω)



$$V_{min} = 12V + [0.022A \cdot (R_L)]$$

\*includes a 10% safety factor

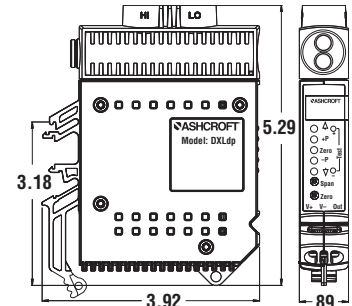
$$R_L = R_S + R_W$$

R<sub>L</sub> = Loop Resistance (ohms)

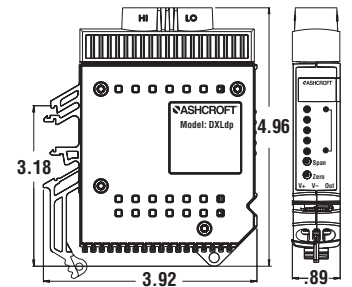
R<sub>S</sub> = Sense Resistance (ohms)

R<sub>W</sub> = Wire Resistance (ohms)

### DIMENSIONS (in inches)



DXLdp dimension with SpoolCal and LED options



DXLdp dimension for basic unit

### How To Order

|  |  |   |   |  |   |  |
|--|--|---|---|--|---|--|
| <b>DX</b><br>Type Configuration<br>(DXLdp) | Accuracy/TC*<br>(3) 0.25%, ±0.02%/°F<br>(5) 0.50%, ±0.02%/°F<br>(7) 1.00%, ±0.02%/°F | <b>F01</b><br>Pressure Connection<br>(F01) 1/8 NPT Female | Output Signal<br>(05) 0-5 Vdc<br>(10) 0-10 Vdc<br>(15) 1-5 Vdc<br>(16) 1-6 Vdc<br>(42) 4-20mA | <b>ST</b><br>Electrical Termination<br>(ST) Screw Terminal | Pressure Range**<br>Differential<br>(P1IW) 0.10" W.C.<br>(P25IW) 0.25" W.C.<br>(P5IW) 0.50" W.C.<br>(P75IW) 0.75" W.C.<br>(1IW) 1.00" W.C.<br>(1P5IW) 1.50" W.C.<br>(2IW) 2.00" W.C.<br>(2P5IW) 2.50" W.C.<br>(3IW) 3.00" W.C.<br>(5IW) 5.00" W.C.<br>(10IW) 10.00" W.C.<br>(15IW) 15.00" W.C.<br>(20IW) 20.00" W.C.<br>(25IW) 25.00" W.C.<br>(50IW) 50.00" W.C.<br>Compound:<br>(P05IWL) ±0.05" W.C.<br>(P1IWL) ±0.10" W.C.<br>(P25IWL) ±0.25" W.C.<br>(P5IWL) ±0.50" W.C.<br>(P75IWL) ±0.75" W.C.<br>(1IWL) ±1.00" W.C.<br>(2IWL) ±2.00" W.C.<br>(2P5IWL) ±2.50" W.C.<br>(3IWL) ±3.00" W.C.<br>(5IWL) ±5.00" W.C.<br>(10IWL) ±10.00" W.C.<br>(25IWL) ±25.00" W.C. | <b>X</b><br>Optional X-Variation<br>(XDL) LED<br>(XPV) Process Valve Actuator<br>(XZ1) 2:1 Turndown<br>(XNL) Test Jacks<br>(XCL) Special Range Calibration<br>(XX1) Fast Response (10msec)<br>(XX2) Slow Response (1sec) |
|--|--|---|---|--|---|--|

\* DXLdp units include 9 point NIST traceable calibration certificate with 0.25 & 0.50% units.  
 \*\* Pascal ranges available, consult factory for product coding.