

Model GC52 Rangeable Wet/Wet Differential Pressure Transmitter

APPLICATIONS

The GC52 utilizes Ashcroft's proven Si-Glas™ silicon variable capacitance sensor technology in a wet-wet package ideal for applications where reliable, low differential pressure measurement is required with line (static) pressure to 300 psi.

Applications include:

- Pressurized & non-pressurized tank levels
- Flow (liquid/gas) measurement

FEATURES

- Up to 8 times smaller than a conventional process transmitter
- Robust NEMA 4X (IP65) aluminum die cast housing
- Bright backlit 4 digit LCD display
- 2 Wire 4-20mA
- Flow measurement and totalization (square root extraction)
- Internal "Push Button" configurability allows quick range changes
- Scaling function allows display to indicate arbitrary physical units
- Easily rotatable display, 90° increments
- Square root extractions for flow measurements
- Key lock



PERFORMANCE SPECIFICATIONS

Reference Condition: 23°C ±2° (73°F)

Accuracy: ±0.50% Span (URL)
(Accuracy includes the effects of linearity, hysteresis, and repeatability)

Stability: ±0.25% Span/year

Response Time: 100msec (user adjustable)

Output Resolution: 0.1% Span (URL)

Standard Ranges (Bi-Directional, Inches W.C.):
±4, ±8, ±20, ±40, ±80, ±200

Standard Ranges (Uni-Directional, Inches W.C.):
0-4, 8, 20, 40, 80, 200, 400

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage: -15 to 65°C (5 to 150°F)

Operating: -10 to 60°C (14 to 140°F)

Compensated: -10 to 60°C (14 to 140°F)

Temperature Effects (-10 to 60°C):
±0.03% FS/C° (from reference, 23°C (73°F))

FUNCTIONAL SPECIFICATIONS

Static (Line) Pressure:

Pressure Range	Proof	Burst
All	300 psi	800 psi

Static (Line) Pressure Effects:

Pressure Range	Effect
≥20" W.C., ±8" W.C.	±0.3% FS/100psi
8" W.C., ±4" W.C.	±0.7% FS/100psi
4" W.C.	±1.5% FS/100psi

Single Side (Differential) Limits:

Pressure Range	Proof	Burst
≤8" W.C., ±4" W.C.	30 psid	130 psid
≥20" W.C., ±8" W.C.	100 psid	130 psid

Vibration: 5g's 150Hz

Shock: 10g's 16ms

ELECTRICAL SPECIFICATIONS

Output Signal: 4-20mA (2 Wire)

Supply Voltage: 12-32Vdc

Rangeability / Adjustment*:

Zero -10% to +110% Span

Span -10% to +110% Span

*Note: Accuracy and output resolution based upon full scale (URL) value

Insulation Resistance: 50Vdc (>100Mohms)

Approvals/Certifications: CE

MECHANICAL SPECIFICATIONS

Pressure Connection: 1/4" Female NPT

Enclosure: Aluminum

Environmental Rating: IP65 / NEMA 4X

Electrical Connection:

External Options:

- 1/2" Female NPT Conduit

- Cable Gland (Cable Diameters 0.35" to 0.47")

Weight: Approx. 1.0 lb

Mounting: Mounting Bracket included

Media: Fluids and gases compatible with 316SS,
Viton and Alumina Ceramic

TO ORDER THE GC52 PRESSURE TRANSMITTER:

GC52	7					X
Type Configuration (GC52)	Accuracy (7) ±0.50% Span	Pressure Fitting (F02) 1/4" FNPT	Output Signal (42) 4-20mA	Electrical Connection (CG) = Cable Gland (CD) = 1/2" FNPT Conduit	Pressure Ranges (Compound/Bidirectional) 4IWL = ±4" W.C. 8IWL = ±8" W.C. 20IWL = ±20" W.C. 40IWL = ±40" W.C. 80IWL = ±80" W.C. 200IWL = ±200" W.C. Pressure Range (Differential Gauge) 4IW = 0-4" W.C. 8IW = 0-8" W.C. 20IW = 0-20" W.C. 40IW = 0-40" W.C. 80IW = 0-80" W.C. 200IW = 0-200" W.C. 400IW = 0-400" W.C.	Optional X-Variations XRH 9 pt. NIST traceable calibration certificate

Consult factory for guidance in product selection
Phone (203) 378-8281 or visit our
web site at www.ashcroft.com

DXLdp Low Pressure Differential Transducer/Transmitter

APPLICATIONS:

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

BENEFITS AND FEATURES:

- The exclusive patented Ashcroft® Spool-Cal™ 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 micro-machined, 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 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 with-



stands extreme overpressure as well as severe shock and vibration.

PERFORMANCE SPECIFICATIONS

Reference Temperature: 70°F ±2°F (21°C ±1°C)
Accuracy Class (Span): **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 (Span/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	0/100.0

Bidirectional Ranges:

Compound

±0.05	±0.5	±2.0	±5.0	
±0.1	±0.75	±2.5	±10.0	±50.0
±0.25	±1.0	±3.0	±25.0	±100.0

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% Span/°F
SPAN ±0.02% Span/°F

FUNCTIONAL SPECIFICATIONS

Overpressure Limits:

Proof 15 psid
Burst 25 psid
Max. Static Line Pressure: 25 psid

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.

Approvals/Certifications: CE

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% Span Span: ±3% Span

Supply Current: < 10mA for voltage

Warm-up Time: 5 sec. max. to meet stated specifications from initial power-up

PHYSICAL SPECIFICATIONS

Pressure Conn.: 1/8" NPT Female; 1/4" Barbed Male

Weight: 4.5 oz.

Environmental Rating: 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

HOW TO ORDER THIS DXLdp TRANSDUCER/TRANSMITTER:

Select:

1. Type Configuration (DXLdp) **DX** **F01** **ST** **X**
2. Accuracy/TC _____
(3) 0.25%, ±0.02%/°F (5) 0.50%, ±0.02%/°F
3. Pressure Connection _____
(F01) 1/8" NPT Female (MB2) 1/4" Barbed Male
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: (P11W) 0.10" W.C. (P251W) 0.25" W.C. (P51W) 0.50" W.C. (P751W) 0.75" W.C. (11W) 1.00" W.C. (1P51W) 1.5" W.C. (21W) 2.00" W.C. (2P51W) 2.50" W.C. (31W) 3.00" W.C. (51W) 5.00" W.C. (101W) 10.00" W.C. (251W) 25.00" W.C. (501W) 50.00" W.C.
Compound: (P05WL) ±0.05" W.C. (P11WL) ±0.10" W.C. (P251WL) ±0.25" W.C. (P51WL) ±0.5" W.C. (P751WL) ±0.75" W.C. (11WL) ±1.0" W.C. (21WL) ±2.0" W.C. (2P51WL) ±2.5" W.C. (51WL) ±5.00" W.C. (101WL) ±10.00" W.C. (251WL) ±25.00" W.C.
7. Optional Variation _____
(XDL) LED (XPV) SpoolCal™ Process Valve Actuator (X21) 2:1 Turn Down (XNL) Test Jacks (XCL) Special Range Calibration (XX1) Fast Response (10msec) (XX2) Slow Response (1sec)

Consult factory for guidance in product selection
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Type XLdp – Ultra-Low Variable Capacitance Pressure Transducer/Transmitter

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

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 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



3 Year Warranty

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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 (Span): 0.25% 0.50%

Non-linearity

Best fit straight line (BFSL) ±0.15% ±0.30%

Hysteresis ±0.02% ±0.02%

Non-repeatability ±0.03% ±0.05%

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

Standard Ranges (Inches W.C.)

Unidirectional Ranges:

Differential or Gauge

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 0/100.0

0/0.75 0/2.5 0/15.0

Bidirectional Ranges:

Compound

±0.05 ±1.0 ±5.0 ±100.0

±0.1 ±2.0 ±10.0

±0.25 ±2.5 ±25.0

±0.5 ±3.0 ±50.0

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

EMC: CE model compliant to EN61326: 1997

Annex A. Harmonized heavy industrial transmitter specification

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.

Approvals/Certifications: CE (4-20mA output when XCE is specified)

ELECTRICAL SPECIFICATIONS

Output Signal:

4-20mA (2 wire)*

1-5 Vdc (3 wire)

1-6 Vdc (3 wire)

Power:

12-36 Vdc

12-36 Vdc

12-36 Vdc

*Optional CE version

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% Span adjustment

Supply Current: <6mA for voltage output

Warm-up Time: 5 seconds max. to meet stated specifications

PHYSICAL SPECIFICATIONS

Pressure Connections: 1/4" barbed stainless steel

TO ORDER THIS TYPE XLdp TRANSDUCER/TRANSMITTER:

Select:

1. Type Configuration (XLdp)

2. Accuracy % Span (3) 0.25%, ±0.015%/°F (5) 0.50%, ±0.015%/°F

3. Pressure Connection

(F02) 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: (P05IWL) ±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 (Includes all options in noted in "Options" section above)

Consult factory for guidance in product selection
Phone (203) 378-8281 or visit our
web site at www.ashcroft.com

Industrial IXLdp Ultra-Low Variable Capacitance Pressure Transmitter

APPLICATIONS:

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

BENEFITS & FEATURES:

- Certified 0.25% and 0.5% accuracy
- 0.1~200~H₂O pressure ranges
- High overload protection
- FM approved for hazardous locations
- NEMA 4X metal construction
- Six types of output signals available
- 5:1 turndown option
- Variable dampening option
- On-board voltage regulation allows use of lower cost, non-precise, unregulated power supply
- Hazardous environments

The Ashcroft® Industrial IXLdp was designed for the measurement and control of very low pressure and flow in industrial and process plant environments. The Industrial IXLdp transmitter features a rugged NEMA 4X enclosure, built-in electrical terminal box isolated from the electronics and threaded process connections.

The Ashcroft IXLdp transmitter utilizes a state-of-the-art variable capacitance sensor with a glass-clad silicon chip. The Si-Glas™ technology combines the inherent high sensitivity of a variable capacitance transducer with the repeatability of a micro-machined, single-crystal silicon diaphragm. The Si-Glas sensor is composed of 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.

PERFORMANCE SPECIFICATIONS

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

Accuracy Class (Span): **0.25%** **0.50%**

Non-linearity

Terminal point ±0.20% ±0.40%

Best fit straight line (BFSL) ±0.15% ±0.30%

Hysteresis ±0.02% ±0.02%

Non-repeatability ±0.03% ±0.05%

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

Standard Ranges (Inches W.C.)

Unidirectional Ranges:

Differential or Gauge

0/0.1 0/2.0 0/10 0/50

0/0.25 0/2.5 0/15 0/100

0/0.50 0/3.0 0/20 0/150

0/1.0 0/5.0 0/25 0/200

Bidirectional Ranges:

Compound

±0.05 ±0.5 ± 5.0 ± 25.0

±0.10 ±1.0 ±10.0 ± 50.0

±0.20 ±2.0 ±15.0 ±100.0

±0.25 ±2.5 ±20.0

Custom Ranges: Special range calibrations

(XCL) – consult factory

Response Time: Standard: 250ms

(Consult factory for damping options)

Optional variable damping (0-30 sec) (X1D)

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage: –40 to 210°F

Operating: –20 to 185°F (0-95% relative humidity)

Compensated: 0 to 160°F

Thermal Coefficients:

0.25% Acc. **0.5% Acc.**

ZERO ±0.01% Span/°F ±0.02% Span/°F

SPAN ±0.01% Span/°F ±0.02% Span/°F

Vibration Sweep:

Less than 0.2% Span/g temporary effect 10-130 Hz

FUNCTIONAL SPECIFICATIONS

Overpressure Limits:

Proof: 20 psid

Burst differential pressure: 50 psid

Maximum static (line) pressure: 100 psi

Static pressure effect: less than 0.5% Span

Mounting Position Effect:

1~W.C. and higher 0.1% Span/g

0.25~up to 0.5~ W.C. 0.5% Span/g

0.1~W.C.

0.8% Span/g

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

Approvals/Certifications: FM intrinsically safe and non-incendive when XFM is specified, see options.

Output Signal:

Current: 4-20mA two wire current loop

Voltage: All voltage outputs are 3 wire

0-5 Vdc 1-6 Vdc

±5 Vdc

1-5 Vdc ±2.5 Vdc

Output Signal is Independent of Power Supply

Changes: 12-36 Vdc range without effect on output signal

Reverse Wiring Protected

Internal Zero and Span: ±10% Span Adjustment

Supply Current: 2.6mA typical for voltage output

Warm-up Time:

Full specification: Less than one second

Fast Response, Turndown & Variable Damping

Optional

PHYSICAL SPECIFICATIONS

Enclosure: 300 series stainless steel

Process Connections: Two ¼ NPT female

Environmental Rating: NEMA 4X Case

Electrical Connections: Two ½" female electrical

conduit connections isolated from the electronics. Separate access cover for terminal connections

Media: Clean, dry and noncorrosive gas (consult factory for use on other media)

NOT FOR USE ON LIQUIDS

OPTIONS

(XX1) – Fast Response: 8 ms

(X41) – 5:1 Turndown

(X1D) – Variable damping (0-30 sec.)

(XNH) – Paper tag

(XCL) – Custom pressure range calibration

(XFM) – FM approval

- Consult factory on other pressure range, temperature compensation, packaging variations or response times

Factory Mutual  intrinsically safe approvals

for use in (specify XFM* option noted above):

Intrinsically Safe:

Class I, II, III: Div. 1 & 2, Groups A - G, when wired in accordance with Ashcroft dwgs 71B241 (pages 1-3)

Non-incendive:

Class I, Div. 2, Groups A - D

Class II, Div. 2, Groups F, G

Class III

*FM option (XFM) cannot be combined options

X41 or X1D

TO ORDER THIS TYPE IXLdp TRANSDUCER/TRANSMITTER:

Select:

1. Type Configuration (XLdp) IX

2. Accuracy/TC F02

(3) 0.25%, ±0.01%/°F (5) 0.50%, ±0.02%/°F

3. Pressure Connection ST

(F02) ¼ NPT-Female

4. Output Signal 15

(05) 0/5 Vdc (15) 1/5 Vdc (16) 1/6 Vdc (25) ±2.5 Vdc (50) ±5.0 Vdc (42) 4-20mA

5. Electrical Terminal ST

(ST) Screw Termination

6. Pressure Range 11W

Diff. or Gauge: (P11W) 0.10~W.C. (P25IW) 0.25~W.C. (P51IW) 0.50~W.C. (11W) 1.00~W.C. (21W) 2.00~W.C.

(2P51IW) 2.50~W.C. (3IW) 3.00~W.C. (5IW) 5.00~W.C. (10IW) 10.00~W.C. (15IW) 15.00~W.C. (20IW) 20.00~W.C.

(25IW) 25.00~W.C. (50IW) 50.00~W.C. (100IW) 100.00~W.C. (150IW) 150.00~W.C. (200IW) 200.00~W.C.

Compound: (P05IW) ±0.05~W.C. (P11WL) ±0.10~W.C. (P21WL) ±0.20~W.C. (P25IWL) ±0.25~W.C. (P51WL) ±0.5~W.C.

(11WL) ±1.00~W.C. (21WL) ±2.00~W.C. (2P51WL) ±2.50~W.C. (31WL) ±3.00~W.C. (51WL) ±5.00~W.C. (101WL) ±10.0~W.C.

(151WL) ±15.00~W.C. (201WL) ±20.00~W.C. (251WL) ±25.00~W.C. (501WL) ±50.00~W.C. (1001WL) ±100.00~W.C.

7. Optional X-Variation (XFM) FM Approval Option (Includes all options in list)

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