

Important A2 Features

- Accuracy: 1%, 0.5% or 0.25%
- 5 psi to 10,000 psi pressure ranges
- Gauge and absolute reference pressure ranges
- PSI or bar measurement units
- Heavy industrial CE rating is standard with all variations
- Available agency listings include FM, UL, CE, CSA, ATEX
- Enclosure options include explosion proof, Nema 4X and IP67
- External zero and span adjustment option maintains NEMA-4X rating
- Sensor materials include 17-4 PH, and 316L
- Electrical output choices include 4-20mA, 1-5Vdc, 1-6Vdc, 0.5-4.5Vdc ratiometric, 0-5Vdc, 0-10Vdc

Model A2 Heavy Industrial, Explosion Proof and Sanitary Pressure Transmitter

The new Ashcroft® A2 Pressure Transmitter is ideal for a broad spectrum of pressure sensing requirements in heavy industrial, hazardous location and sanitary applications. It offers the instrument specifier a wide choice of construction and performance variables.

The Ashcroft® A2 is designed and manufactured to provide the user with accurate, reliable, and stable output data. This is accomplished through the use of an on board microprocessor, that is programmed during a unique digital compensation process, to provide extremely linear and precise performance over the entire specified pressure range and temperature band.



LOOK FOR THIS MARK ON OUR PRODUCTS

ISO 9001
REGISTERED FIRM



Instruments

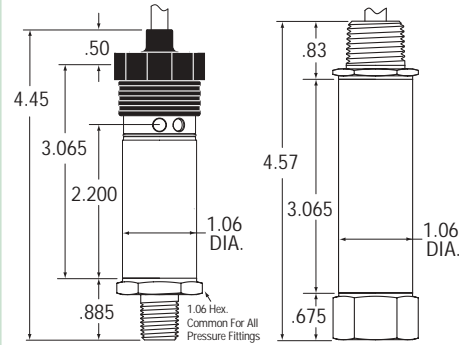
THE NEW ASHCROFT

ASHCROFT® A2 PRESSURE TRANSMITTER FOR INDUSTRIAL APPLICATIONS



The industrial user or OEM can outfit the A2 transmitter to meet specific application requirements, including optional absolute pressure ranges, 316L SS sensors, and a wide selection of process fittings and electrical connections. The Ashcroft® A2 is an ideal choice for pressure applications in:

- *Hydraulic Systems*
- *Test Stands*
- *Compressor Control*
- *Engine Monitoring*
- *Pump Control*
- *Construction and Off-Road Equipment*

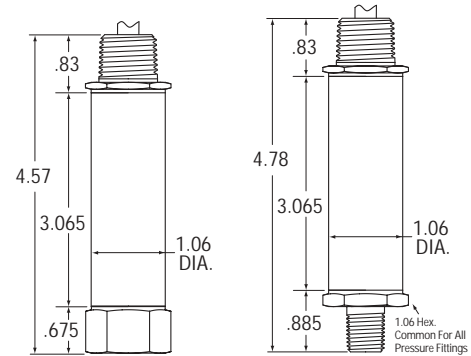


ASHCROFT® A2 PRESSURE TRANSMITTER FOR HAZARDOUS LOCATIONS



If your pressure sensing needs fall within a hazardous location, choose the A2 with the optional explosion-proof enclosure or intrinsic safety ratings. Common applications for the A2 in hazardous locations are:

- *Oil Field Equipment*
- *Gas Compression*
- *Off-Shore Oil & Gas Production*
- *Oil Production*
- *Gas Transfer Control*

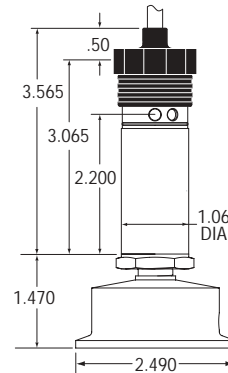


ASHCROFT® A2 PRESSURE TRANSMITTER FOR SANITARY APPLICATIONS



Equip the A2 pressure transmitter with optional electropolished 1½" or 2" sanitary process connections and you'll have an excellent pressure transmitter for pressure monitoring in steam in place (S.I.P.) or clean-in-place (C.I.P.) applications. Industries where the sanitary version of the Ashcroft® A2 is well suited include:

- *Dairy*
- *Food Processing*
- *Pharmaceutical*
- *Bio-Tech*
- *Ultra Filtration*



HOW TO ORDER THE A2 PRESSURE TRANSMITTERS

| A 2 | | | | | | | | X |
|-------------------------|---|---|--|--|--|---|--|---|
| Type Configuration (A2) | Accuracy / Temp. Effect / Comp. Range (A) 0.25%≤0.5% (-20°C to +85°C) (B) 0.50%≤1.0% (-20°C to +85°C) (C) 1.00%≤1.0% (-20°C to +85°C) (D) 0.25%≤1.0% (-40°C to +125°C)* (E) 0.50%≤1.5% (-40°C to +125°C)* *316L sensor standard | Pressure Connection (M01) 1/8 NPT-M (M02) 1/4 NPT-M (F02) 1/4 NPT-F (MEK) 7/16-20 SAE-M (F09) 7/16-18 (1/4)-F (Aminco) (M04) 1/2 NPT-M | Output Signal (05) 0-5 Vdc (10) 0-10 Vdc (15) 1-5 Vdc (16) 1-6 Vdc (RM) 0.5-4.5 Vdc Ratio Metric (42) 4-20mA | Electrical Termination Integral (Pigtail) (F2) 3' shielded cable (P1) (specify length) Hirschmann Style Form A DIN 43650-A (DN) w/o mating conn. (D0) with mate, no cable (D2) with mate, 3' cable (D1) with mate, (specify length) 4-Pin Bendix Style (B4) w/o mating conn. (H1) with mate, no cable (L1) with mate, 3' cable (P2) with mate, (specify length) 1/2 NPT-M Conduit (C1) 3' shielded cable (P7) (specify length) 1/2 NPT-M Conduit (C2) 3' flying leads (C3) (specify length) M12 Threaded (EW) w/o mating conn. (E0) with mate, no cable (E2) with mate, 3' cable (E1) with mate, (specify length) | Pressure Range (5#) 5 psi* (10#) 10 psi* (15#) 15 psi* (30#) 30 psi* (60#) 60 psi (100#) 100 psi (150#) 150 psi (200#) 200 psi (300#) 300 psi (500#) 500 psi (750#) 750 psi (1000#) 1000 psi (2000#) 2000 psi (3000#) 3000 psi (5000#) 5000 psi (7500#) 7500 psi (10,000#) 10,000 psi** (0# & vac.) 0 psi/vac. (15# & vac.) Vac./15 psi* (30# & vac.) Vac./30 psi* (45# & vac.) Vac./45 psi (60# & vac.) Vac./60 psi | Measurement Type (G) Gauge Pressure (A) Absolute Pressure | Optional X-Variations (XCL) Non-standard calibration (XHZ) Intrinsic Safety Listing (Pending) (XNS) 316L Sensor* Material | |
| | | | | | *316L sensor standard **17-4 PH sensor only | | *Where not standard | |

T[®] A2 TRANSMITTER

PERFORMANCE SPECIFICATIONS

Reference temperature 68°F (20°C)

Accuracy Class (% Span) **0.25%** **0.5%** **1.0%**

Nonlinearity

| | | | |
|----------------|-------|-------|-------|
| Terminal Point | ≤0.15 | ≤0.25 | ≤0.50 |
| BFSL | ≤0.10 | ≤0.20 | ≤0.30 |

Hysteresis*

| | | | |
|--|-------|-------|-------|
| | ≤0.05 | ≤0.10 | ≤0.10 |
|--|-------|-------|-------|

Nonrepeatability

| | | | |
|--|-------|-------|-------|
| | ≤0.05 | ≤0.05 | ≤0.05 |
|--|-------|-------|-------|

*Hysteresis ≤0.10 for pressure range 5000 psi and above.

Stability:

Sensor Material 316L SS: ≤0.1% FS/year

Sensor Material 17-4PH: ≤0.5% FS/year

Durability: Greater than 10 million cycles (for standard 17-4 PH sensors)

Response Time: Less than 2 ms (10-90%)

FUNCTIONAL SPECIFICATIONS

Standard Wetted Materials and Performance:

Pressure Sensor Mat'l.

Range Proof Burst

Compound (psig)

| | | | |
|---------|-----|-----|-----------------------|
| 0/Vac | 30 | 60 | 316L |
| Vac/15 | 60 | 120 | 316L |
| Vac/30 | 90 | 360 | 17-4PH ⁽¹⁾ |
| Vac/60 | 120 | 480 | 17-4PH ⁽¹⁾ |
| Vac/100 | 200 | 800 | 17-4PH ⁽¹⁾ |

Gauge (psig)

| | | | |
|----------------------|-------|-------|-----------------------|
| 5 | 10 | 20 | 316L |
| 10 | 20 | 40 | 316L |
| 15 | 30 | 60 | 316L |
| 30 | 60 | 120 | 316L |
| 60 | 120 | 480 | 17-4PH ⁽¹⁾ |
| 100 | 200 | 800 | 17-4PH ⁽¹⁾ |
| 150 | 300 | 1200 | 17-4PH ⁽¹⁾ |
| 200 | 400 | 1600 | 17-4PH ⁽¹⁾ |
| 300 | 600 | 2400 | 17-4PH ⁽¹⁾ |
| 500 ⁽²⁾ | 1000 | 4000 | 17-4PH ⁽¹⁾ |
| 750 ⁽²⁾ | 1500 | 6000 | 17-4PH ⁽¹⁾ |
| 1000 ⁽²⁾ | 2000 | 8000 | 17-4PH ⁽¹⁾ |
| 2000 ⁽²⁾ | 4000 | 16000 | 17-4PH ⁽¹⁾ |
| 3000 ⁽²⁾ | 4500 | 9000 | 17-4PH ⁽¹⁾ |
| 5000 ⁽²⁾ | 7500 | 15000 | 17-4PH ⁽¹⁾ |
| 7500 ⁽²⁾ | 9000 | 11250 | 17-4PH ⁽¹⁾ |
| 10000 ⁽²⁾ | 12000 | 15000 | 17-4PH |

Absolute (psia)

| | | | |
|------|-------|-------|------|
| 15 | 30 | 60 | 316L |
| 30 | 60 | 120 | 316L |
| 60 | 100 | 200 | 316L |
| 100 | 200 | 400 | 316L |
| 150 | 200 | 400 | 316L |
| 200 | 500 | 1000 | 316L |
| 300 | 500 | 1000 | 316L |
| 500 | 1000 | 2000 | 316L |
| 750 | 2000 | 4000 | 316L |
| 1000 | 2000 | 4000 | 316L |
| 2000 | 5000 | 10000 | 316L |
| 3000 | 5000 | 10000 | 316L |
| 5000 | 10000 | 15000 | 316L |
| 7500 | 10000 | 15000 | 316L |

(1) Also available in optional 316L SS sensor material. Refer to absolute pressure table above for proof and burst pressure data.

(2) Sealed sensor, (psis).

Consult factory for additional pressure ranges, measurement units or venting options.

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Process: -40 to +125°C (-40 to 257°F)

Storage: -40 to +125°C (-40 to 257°F)

Standard Compensation:

-20 to +85°C (-4 to 185°F)

Extended Compensation*:

-40 to +125°C (-40 to 257°F)

*316L sensor is required for extended comp.

Temperature Effect:

Accuracy Class **0.25%** **0.5%** **1.0%**

Std. Comp. (%/105°C)

Zero (% Span) ≤0.5 ≤1.0 ≤1.0

Span (% Reading) ≤0.5 ≤1.0 ≤1.0

Ext. Comp. (%/165°C)

Zero (% Span) ≤1.0 ≤1.5 N/A

Span (% Reading) ≤1.0 ≤1.5 N/A

Humidity Effects: No performance effects from 0 to 95% RH, non-condensing, 0-100% RH with (W) enclosure.

Vibration Effect:

Shock: 100g Peak, 11ms

Random: 10g RMS, 20-2000Hz

Sweep: 50-2000Hz, 5g peak

Position Effect: ≤0.02% Typical

Output Signal: Supply Voltage: (unregulated)

Minimum Maximum

0-5Vdc (3 Wire) 12Vdc 36Vdc

0-10Vdc (3 Wire) 14Vdc 36Vdc

1-5Vdc (3 Wire) 10Vdc 36Vdc

1-6Vdc (3 Wire) 10Vdc 36Vdc

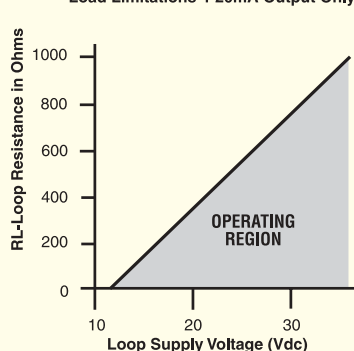
4-20mA* (2 Wire) 12Vdc 36Vdc

0.5-4.5 (3 Wire) 4.5Vdc 5.5Vdc

Ratiometric

*For intrinsically safe, see entity parameters for supply voltage & load limits. Refer to Dresser Drawing #825A022.

Load Limitations 4-20mA Output Only



$$V_{dcMIN} = 12V + (0.022A * X (RL))$$

$$R_L = R_S + R_W$$

$$R_L = \text{Loop Resistance (ohms)}$$

$$R_S = \text{Sense Resistance (ohms)}$$

$$R_W = \text{Wiring Resistance (ohms)}$$

* (Includes a 10% safety factor)

Circuit Protection: Reverse polarity and mis-wire protected.

Over Voltage: 30 Vdc on ratiometric

Insulation Resistance (circuit to case):

50 M ohms @ 30Vdc

Electrical Connections:

Connector Options

• Hirschmann® Style – DIN 43650-A

• M12 threaded

• PT02A-8-4P – Bendix® style 4 pin

Cable Options

• ½ NPT Conduit – 36" shielded PVC cable, 24 AWG

• ½ NPT Conduit – 36" flying leads, 18 AWG

• 36" shielded PVC cable, 24 AWG

CE Mark (standard):

EN 61326:1997 + A1: 1998 Annex A

Heavy Industrial Immunity (Annex A, Table A.1)

Light Industrial/Residential Emission (Table 4)

OPT. HAZARDOUS LOCATION CERTIFICATIONS

Explosion Proof – UL, CSA

(approvals pending):

Explosion Proof: Class I, Div. 1 and 2, Groups A, B, C and D

Dust Ignition Proof: Class II, Div. 1 and 2, Groups E, F and G

Explosion Proof – ATEX (approvals pending):

CE II 2 GD

Ex d IIC T4*

Ex nC IIC T4*

Intrinsically Safe – FM, CSA

(approvals pending):

Intrinsic Safety: Class I, II and III, Div. 1 and 2, Groups A, B, C, D, E, F and G per entity requirements see Dresser drawing #825A022

Non-Incendive: Class I, II and III, Div. 2, Groups A, B, C, D, E, F and G (no barrier needed)

Intrinsically Safe – ATEX (approvals pending):

CE II 1 GD

EEx ia IIC T4*

*T6 for product temperature range below 85°C, order codes A, B, C)

PHYSICAL SPECIFICATIONS

Case: Material 304SS

Ingress Protection Rating:

Type Rating

Basic (IP65, NEMA 4X)

Zero/Span (IP65, NEMA 4X)

All Welded (w Z/S) (IP65, NEMA 4X)

All Welded (w/o Z/S) (IP67, NEMA 6)

Explosion Proof* (IP65, NEMA 7,9)

*Available with (C2) or (C3) electrical connection only

All ratings with Zero and Span access sleeve closed

Pressure Connections: 316L SS Material

Refer to "How to Order" on opposite page for size and style selection.

OPTIONAL FEATURES

• 316L Sensor* (XNS)

• Intrinsic Safety Listing (XHZ) (Pending)

• Non Standard Range Calibration (XCL)

*Optional in gauge ranges, 0-60 psig through 0-7500 psig

Consult Factory for Other Options

Hirschmann is a registered trademark of Richard Hirschmann of America, Inc.

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