

Model A4 Intrinsically Safe and Non-Incendive Pressure Transmitter



LOOK FOR THESE MARKS
ON OUR PRODUCTS

APPLICATIONS:

Oil field equipment, upstream oil and gas production, natural gas compression and transfer control, alternative energy projects

FEATURES:

- FM and CSA listings
- Choice of 0.25, 0.50 or 1.0% accuracy
- Pressure ranges from 5 psi through 10,000 psi
- CE mark
- 316L SS wetted materials, 17-4 PH optional
- 304 SS case in standard, welded or explosion proof construction
- Optional absolute pressure ranges available
- Zero and span access (Basic Enclosure)

The Ashcroft® A4 pressure transmitter is ideal for a broad spectrum of pressure sensing requirements where Intrinsically Safe or Non-Incendive hazardous location ratings are required.

The Ashcroft® A4 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 and temperature range.

PERFORMANCE SPECIFICATIONS

Reference temperature 70°F (21°C)
Accuracy, Three Classes (% Span): ±.25 ±.05 ±1.0
 Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors
 Best Fit Straight Line* (BFSL): ±.20 ±.40 ±.50
 Includes non-linearity hysteresis, non-repeatability errors
 *Add ±.05% for ranges above 5000 psi
Stability:
 ≤ ±0.25% Span/year @ reference conditions
Durability: Greater than 10 million cycles

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:
 Storage: -40 to +125°C (-40 to 257°F)
 Process: -40 to +125°C (-40 to 257°F)
 Operating: -40 to +125°C (-40 to 257°F)
 Compensated*: -20 to +85°C (-4 to 185°F)
 *Consult factory for other options

Temperature Effects: -20 to +85°C (-4 to 185°F)
 • 1.0% of Span for .25% Accuracy Class
 • 2.0% of Span for .50% and 1.0% Accuracy Classes
Humidity Effects: No performance effects from 0 to 95% relative humidity, non-condensing, 0-100% RH with "W" enclosure.
 *Consult factory

FUNCTIONAL SPECIFICATIONS

Response Time: <2ms
Pressure Ranges: Vacuum, gauge, compound and absolute pressure from 0-5 psi through 0-10,000. Equivalent ranges in bar available. See order guide section (reverse).
Vibration Effect:

Shock: 100g Peak, 11ms
 Random: 10g RMS, 20-2000Hz
 Sweep: 50-2000Hz, 5g peak

Position Effect: ±0.02% Typical
CE Mark (standard): EN 61326:1997 + A1: 1998 Annex A Heavy Industrial Immunity (Annex A, Table A.1) Light Industrial/Residential Emission (Table 4)

Overpressure (F.S.):*

	Proof	Burst
0#/vac. to 300 psi	1.5 x F.S.	min. 2 x F.S.
500-10,000 psi	1.2 x F.S.	1.5 x F.S.

*For higher overpressure ratings use XK8 option.
 See page 2 for additional option.

ELECTRICAL SPECIFICATIONS

Output Signal: Supply Voltage: (unregulated)

	Minimum	Maximum
4-20mA* (2 Wire)	12Vdc	30Vdc

*For Intrinsically Safe see entity parameters for supply voltage and load limits. Refer to Ashcroft A4 Installation & Maintenance document "I&M011-10166-A4."

Power Requirements:

See load chart page 2

Electrical Terminations: See To Order section (reverse.) for options

Circuit Protection: Reverse polarity and mis-wire protected Insulation Resistance (Circuit to Case): 100Mohm @ 30Vdc

PHYSICAL SPECIFICATIONS

Case: Material 304SS

Wetted Materials: 316L SS diaphragm and pressure port, optional 17-4PH SS diaphragm and 316L SS pressure port (see How to Order Section).

Ingress Protection Rating:

Enclosure	Code	Rating
Basic	(S)	IP65, NEMA 4X
All Welded (w/o Z/S)	(W)	IP67, NEMA 6

HAZARDOUS AREA CERTIFICATIONS

Intrinsically Safe – FM/CSA:

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

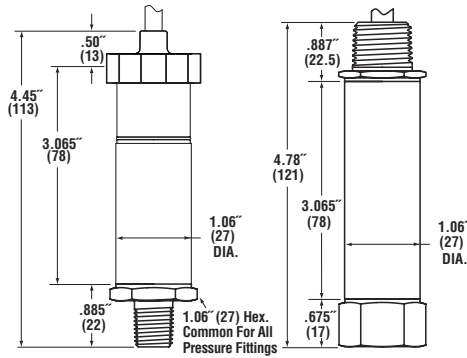
Non-Incendive: Class I, II and III Div.2, Groups A, B, C, D, F and G, no barriers needed

NOTE:

Refer to Ashcroft Model A2 for Heavy Industrial, non-hazardous rated configurations and Ashcroft Model A2X for Explosion/Flame Proof applications.

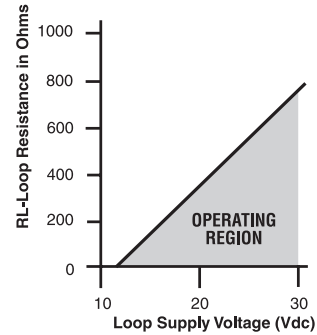
Model A4 Intrinsically Safe and Non-Incendive Rated Pressure Transmitter

DIMENSIONS dimensions in () are mm



INTRINSICALLY SAFE (ENCLOSURE S, W)

Load Limitations 4-20mA Output Only



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

$R_L = R_S + R_W$
 R_L = Loop Resistance (ohms)
 R_S = Sense Resistance (ohms)
 R_W = Wiring Resistance (ohms)
 * (Includes a 10% safety factor)

XK8 OVERPRESSURE (F.S.)

	Proof	Burst
0 to 2000 psi	200%	800%
3000 to 5000 psi	150%	300%
7500 to 10,000 psi	120%	150%

NOTE:

Refer to Ashcroft Model A2 for Heavy Industrial, non-hazardous rated configurations and Ashcroft Model A2X for Explosion / Flame Proof applications.

How To Order

A 4								X
Type Configuration (A4)	Accuracy / Temp. Effects (A) 0.25% ≤ 1.0% (-20°C to +85°C) (B) 0.50% ≤ 2.0% (-20°C to +85°C) (C) 1.00% ≤ 2.0% (-20°C to +85°C)	Enclosure (S) Basic (W) Welded w/out Zero & Span Access (See electrical termination coding for available selections)	Pressure Connection (M01) 1/4 NPT-M (M02) 1/4 NPT-M (F02) 1/4 NPT-F (MEK) 3/16-20 SAE-M (F09) 3/16-18 (1/4)-F (Aminco) (M04) 1/2 NPT-M (others available upon request)	Output Signal (42) 4-20mA	Electrical Termination Integral Cable (Pigtail) (F2) 3' shielded cable ⁽¹⁾ (P1) (specify length) ⁽¹⁾ Hirschmann Style Form A DIN 43650-A (DN) w/o mating conn. ⁽¹⁾ (D0) with mate, no cable ⁽¹⁾ (D2) with mate, 3' cable ⁽¹⁾ (D1) with mate, (specify length) ⁽¹⁾ 4-Pin Bendix Style (B4) w/o mating conn. ^{(2),(8)} (H1) with mate, no cable ^{(2),(8)} (L1) with mate, 3' cable ^{(2),(8)} (P2) with mate, (specify length) ^{(2),(8)} 1/2 NPT-M Conduit (C1) 3' shielded cable ^{(3),(8)} (C6) 15' shielded cable ⁽⁸⁾ (C7) 30' shielded cable ⁽⁸⁾ (P7) (specify length) ^{(3),(8)} 1/2 NPT-M Conduit (C2) 3' flying leads ^{(3),(8)} (C5) 10' flying leads ^{(3),(8)} M12 Threaded (EW) w/o mating conn. ⁽¹⁾ (E0) with mate, no cable ⁽¹⁾ (E2) with mate, 3' cable ⁽¹⁾ (E1) with mate, (specify length) ⁽¹⁾	Pressure Range (1.5#) 1.5 psi ^{(5),(6),(7)} (5#) 5 psi ^{(5),(6)} (10#) 10 psi ^{(5),(6)} (15#) 15 psi ⁽⁶⁾ (30#) 30 psi ⁽⁶⁾ (50#) 50 psi (60#) 60 psi (75#) 75 psi (100#) 100 psi (150#) 150 psi (200#) 200 psi (300#) 300 psi (500#) 500 psi (750#) 750 psi (1000#) 1000 psi (1500#) 1500 psi (2000#) 2000 psi (3000#) 3000 psi (5000#) 5000 psi (7500#) 7500 psi (10,000#) 10,000 psi ⁽⁴⁾ (0# & vac.) 0 psi/vac. ^{(5),(6)} (15# & vac.) Vac./15 psi ^{(5),(6)} (30# & vac.) Vac./30 psi ^{(5),(6)} (45# & vac.) Vac./45 psi ⁽⁶⁾ (60# & vac.) Vac./60 psi ⁽⁶⁾	Measurement Type (G) Gauge Pressure Sensor (A) Absolute Pressure Sensor	Optional X-Variations (XCL) Non-standard calibration (XK8) 17-4PH SS Sensor Material (X6B) Cleaned For Oxygen Service
<p>NOTE: All A4 pressure transmitters include a 9 pt. NIST traceable calibration certificate</p> <p>⁽¹⁾ Available with enclosure code (S) ⁽²⁾ Available with enclosure code (S, W) ⁽³⁾ Available with enclosure code (W) ⁽⁴⁾ 17-4PH SS Sensor Required ⁽⁵⁾ 17-4PH SS Sensor Not Available ⁽⁶⁾ Gauge pressure only ⁽⁷⁾ Available only with accuracy B & C ⁽⁸⁾ Not CE Compliant</p>								