

# Model A4 Intrinsically Safe and Non-Incendive Pressure Transmitter



## 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 ±0.5 ±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

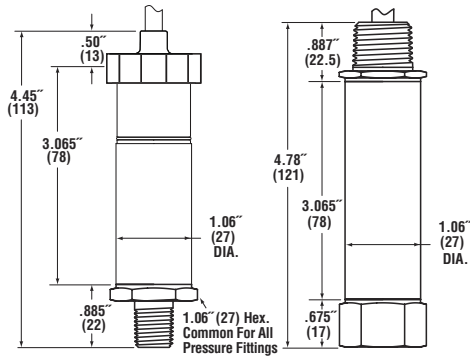
Non-Incendive: Class I, II and III Div.2, Groups A, B, C, D, F and G, no barriers needed

### NOTE:

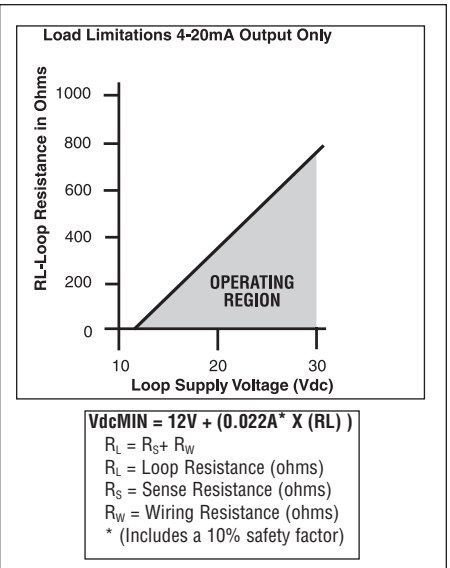
Refer to Ashcroft Model A2 for Heavy Industrial, non-hazardous rated configurations and Ashcroft Model A2X for Explosion/Flame Proof applications.

## Model A4 Intrinsically Safe and Non-Incendive Rated Pressure Transmitter

### DIMENSIONS dimensions in ( ) are mm



INTRINSICALLY SAFE (ENCLOSURE S, W)



### 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

<b>A</b> <b>4</b>								<b>X</b>
<b>Type Configuration</b> (A4)	<b>Accuracy / Temp. EffectS</b> (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)		<b>Output Signal</b> (42) 4-20mA	<b>Electrical Termination</b> <b>Integral Cable (Pigtail)</b> (F2) 3 shielded cable <sup>(1)</sup> (P1) (specify length) <sup>(1)</sup> <b>Hirschmann Style Form A DIN 43650-A</b> (DN) w/o mating conn. <sup>(1)</sup> (D0) with mate, no cable <sup>(1)</sup> (D2) with mate, 3 cable <sup>(1)</sup> (D1) with mate, (specify length) <sup>(1)</sup> <b>4-Pin Bendix Style</b> (B4) w/o mating conn. <sup>(2)</sup> (H1) with mate, no cable <sup>(2)</sup> (L1) with mate, 3 cable <sup>(2)</sup> (P2) with mate, (specify length) <sup>(2)</sup> <b>½ NPT-M Conduit</b> (C1) 3 shielded cable <sup>(3)</sup> (P7) (specify length) <sup>(3)</sup> <b>½ NPT-M Conduit</b> (C2) 3 flying leads <sup>(3)</sup> (C4) 15 flying leads <sup>(3)</sup> <b>M12 Threaded</b> (EW) w/o mating conn. <sup>(1)</sup> (E0) with mate, no cable <sup>(1)</sup> (E2) with mate, 3 cable <sup>(1)</sup> (E1) with mate, (specify length) <sup>(1)</sup>	<b>Pressure Range</b> (1.5#) 1.5 psi <sup>(5),(6)</sup> (750#) 750 psi (5#) 5 psi <sup>(5),(6)</sup> (1000#) 1000 psi (10#) 10 psi <sup>(5),(6)</sup> (1500#) 1500 psi (15#) 15 psi <sup>(5)</sup> (2000#) 2000 psi (30#) 30 psi <sup>(5)</sup> (3000#) 3000 psi (50#) 50 psi (5000#) 5000 psi (60#) 60 psi (7500#) 7500 psi (75#) 75 psi (10,000#) 10,000 psi <sup>(4)</sup> (100#) 100 psi (0# & vac.) 0 psi/vac. <sup>(5),(6)</sup> (150#) 150 psi (15# & vac.) Vac./15 psi <sup>(5),(6)</sup> (200#) 200 psi (30# & vac.) Vac./30 psi <sup>(5),(6)</sup> (300#) 300 psi (45# & vac.) Vac./45 psi <sup>(5)</sup> (500#) 500 psi (60# & vac.) Vac./60 psi <sup>(5)</sup>	<b>Measurement Type</b> (G) Gauge Pressure Sensor (A) Absolute Pressure Sensor	<b>Optional X-Variations</b> (XCL) Non-standard <sup>(7)</sup> calibration (XK8) 17-4PH SS Sensor Material (X6B) Cleaned For Oxygen Service	
<b>Enclosure</b> (S) Basic (W) Welded w/out Zero & Span Access  (See electrical termination coding for available selections)	<b>Pressure Connection</b> (M01) ½ NPT-M (F04) ½ NPT-F (M02) ¼ NPT-M (MG4) G ½ M (F02) ¼ NPT-F (VM2) VCR inlet fitting (MEK) ¾-20 SAE-M ¼" VCR gland with ¾-18 male nut (F09) ¾-18 (¼)-F (VF2) VCR inlet fitting (Aminco) ¼" VCR gland with ¾-18 female nut (M04) ½ NPT-M  (others available upon request)							

**NOTE:** All A4 pressure transmitters include a 9 pt. NIST traceable calibration certificate

<sup>(1)</sup> Available with enclosure code (S)  
<sup>(2)</sup> Available with enclosure code (S, W)  
<sup>(3)</sup> Available with enclosure code (W)