

# Model A4 Intrinsically Safe and Non-Incendive Pressure Transmitter



## APPLICATIONS:

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

## 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 ±.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:**  
 Sensor Material 316L SS: ±0.1% Span/year  
 Sensor Material 17-4PH: ±0.5% Span/year  
**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 2000 psi	2 x F.S. min. 3 x F.S.
3000-5000 psi	1.5 x F.S. min. 3 x F.S.
7500-10,000 psi	1.2 x F.S. 1.5 x F.S.

## ELECTRICAL SPECIFICATIONS

**Output Signal:**

Supply Voltage: (unregulated)	Minimum	Maximum
	12Vdc	30Vdc

4-20mA\* (2 Wire)  
 \*For Intrinsically Safe see entity parameters for supply voltage and load limits. Refer to Ashcroft Drawing #825A022

## 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 (piezoresistive MEMS sensor with silicone oil fill), 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.1 and 2, Groups A, B, C, D, F and G, no barriers needed

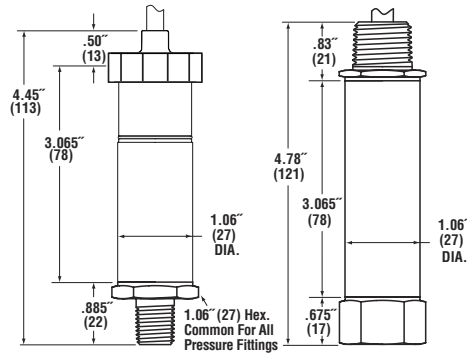
## NOTE:

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

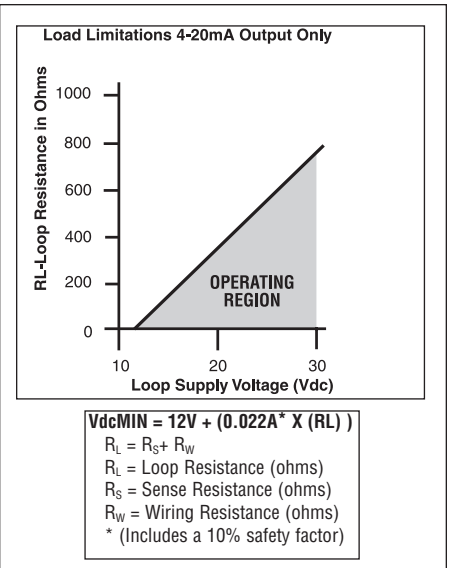


## Model A4 Intrinsically Safe and Non-Incendive Rated Pressure Transmitter

### DIMENSIONS dimensions in ( ) are mm



INTRINSICALLY SAFE (ENCLOSURE S, W)



### 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 4</b>								<b>X</b>
<b>Type Configuration (A4)</b>	<b>Accuracy / Temp. Effects</b>		<b>Output Signal</b>	<b>Electrical Termination</b>	<b>Pressure Range</b>		<b>Measurement Type</b>	<b>Optional X-Variations</b>
(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)			(42) 4-20mA	<b>Integral (Pigtail)</b> (F2) 3' shielded cable (P1) (specify length) <b>Hirschmann Style Form A DIN 43650-A</b> (DN) w/o mating conn. (D0) with mate, no cable (D2) with mate, 3' cable (D1) with mate, (specify length) <b>4-Pin Bendix Style</b> (B4) w/o mating conn. (H1) with mate, no cable (L1) with mate, 3' cable (P2) with mate, (specify length) <b>½ NPT-M Conduit</b> (C1) 3' shielded cable (P7) (specify length) <b>½ NPT-M Conduit</b> (C2) 3' flying leads (C4) 15' flying leads <b>M12 Threaded</b> (EW) w/o mating conn. (E0) with mate, no cable (E2) with mate, 3' cable (E1) with mate, (specify length)	(5#) 5 psi (1000#) 1000 psi (10#) 10 psi (2000#) 2000 psi (15#) 15 psi (3000#) 3000 psi (30#) 30 psi (5000#) 5000 psi (60#) 60 psi (7500#) 7500 psi (100#) 100 psi (10,000#) 10,000 psi* (150#) 150 psi (0# & vac.) 0 psi/vac. (200#) 200 psi (15# & vac.) Vac./15 psi (300#) 300 psi (30# & vac.) Vac./30 psi (500#) 500 psi (45# & vac.) Vac./45 psi (750#) 750 psi (60# & vac.) Vac./60 psi		(G) Gauge Pressure Sensor Sensor (A) Absolute Pressure Sensor	Non-standard** calibration <b>(XK8)</b> 17-4PH SS Sensor Material <b>(X6B)</b> Cleaned For Oxygen Service
<b>Enclosure</b> (S) Basic (W) Welded w/out Zero & Span Access Electrical Termination: 4-Pin Bendix or 1/2" Conduit with cable or flying leads		<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)						

\*17-4PH SS Sensor Required

\*\*Minimum 10 pieces for non-standard pressure ranges.

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