

Model A2X Explosion/Flame Proof Pressure Transmitter



APPLICATIONS:

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

FEATURES:

- FM, cUL and ATEX listed
- 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
- Six output signals to choose from
- Optional absolute pressure ranges available

The Ashcroft® A2X pressure transmitter is ideal for a broad spectrum of pressure sensing requirements requiring approvals for explosion/flame proof.

The Ashcroft® A2X 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:

Sensor Material 316L SS or 17-4PH: ≤ ±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.

*Consult factory for higher overpressure ratings.

ELECTRICAL SPECIFICATIONS

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

*30Vdc max for Intrinsically Safe installations

Power Requirements:

Supply Current: <5mA for voltage outputs

Electrical Termination:

1/2 NPT male conduit with flying leads or shielded cable

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: IP65; NEMA 7,9

HAZARDOUS AREA CERTIFICATIONS

Explosion Proof – cUL (USL/CNL): Specify A2X

Class I, Div. 1 & 2, Groups A, B, C and D

Class II, Div. 1 & 2, Groups E, F and G

Flame Proof – ATEX: Specify A2X

CE II 2 G

Ex d IIC T4

NOTE: For 4-20mA units following approvals also apply:

Intrinsically Safe – FM/CSA:

Class I, Div. 1

Class I, Div. 2, Non-Incendive

Refer to Ashcroft drawing #825A022 for wiring

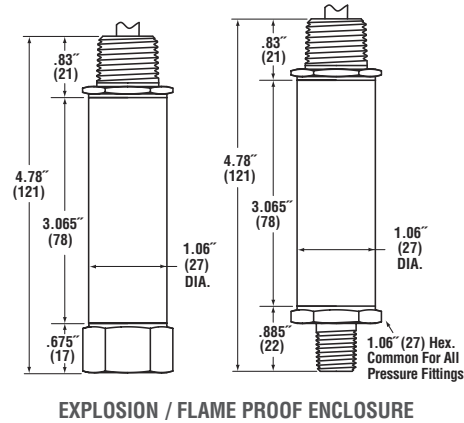
and installation requirements.

NOTE:

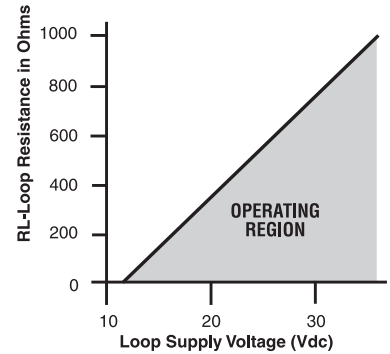
Refer to Ashcroft Model A2 for Heavy Industrial, non-Hazardous rated configurations and Ashcroft Model A4 for Intrinsically Safe/non-Incendive applications.

Model A2X Explosion/Flame Proof Pressure Transmitter

DIMENSIONS dimensions in () are mm



Load Limitations 4-20mA Output Only



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

$$R_L = R_S + R_W$$

R_L = Loop Resistance (ohms)

R_S = Sense Resistance (ohms)

R_W = Wiring Resistance (ohms)

* (Includes a 10% safety factor)

NOTE:

Refer to Ashcroft Model A2 for Heavy Industrial, non-Hazardous rated configurations and Ashcroft Model A4 for Intrinsically Safe/non-Incendive applications.

How To Order

A2X							X
Type Configuration (A2X)	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)	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 (F04) 1/2 NPT-F (others available upon request)	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 1/2 NPT Male Conduit Flying Leads (C2) with 3' leads (C3) with customer defined length (C4) with 15' leads Shielded Cable (C1) with 3' cable (C6) with 15' cable (C7) with 30' cable (P7) with customer defined length	Pressure Range (5#) 5 psi** (10#) 10 psi** (15#) 15 psi** (30#) 30 psi** (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 *17-4PH SS sensor required **17-4PH SS sensor not available	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

NOTE: All A2X pressure transmitters include a 9 pt. NIST traceable calibration certificate

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

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 ±.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:
 Sensor Material 316L SS or 17-4PH: ≤ ±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:

- 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:

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.

*Consult factory for higher overpressure ratings.

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.

