

Model K1 Pressure Transmitter



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APPLICATIONS

Hydraulic, refrigeration, machine tool, test/measurement, pump control, HVAC, medical, construction equipment and all general purpose industrial process applications

FEATURES:

- 0.5% and 1.0% accuracy
- Vac.-20,000 psi pressure range
- FM approved (optional)
- Superior long-term stability and repeatability
- Stainless steel NEMA 4X enclosure
- Current/voltage output
- Wide range of electrical connections available
- Optional panel meter digital display – see Ashcroft model DM61

The Ashcroft® K1 is a proven and versatile pressure transducer/transmitter incorporating polysilicon thin film technology. Modern low-pressure chemical vapor deposition methods provide simple, stable molecular bonds between the metal diaphragm and a polysilicon strain gage bridge. There are no epoxies or bonding agents to contribute to signal instability or drift. The integral metal diaphragm and polysilicon bridge are virtually unaffected by shock, vibration or mounting.

These transmitters are offered in many standard pressure ranges with either current or voltage output signals. Transmitter performance is directly traceable to the National Institute of Standards and Technology. A calibration test certificate is available with each transmitter.

PERFORMANCE SPECIFICATIONS

Accuracy Class (Span): ±0.5% ±1.0%

Includes non-linearity (Terminal Point Method), hysteresis, non-repeatability, zero offset and span setting errors

Best Fit Straight Line (BFSL) ±0.25% ±0.4%
Non-linearity

Interchangeability ±0.5% ±1.0%

Durability: 10⁸ cycles 20/80% span with negligible performance change

Stability: ±0.5% Span/yr

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage: -54 to 121°C (-65 to +250°F)

Operating: -28 to 82°C (-20 to +180°F)

Comp. Range: -28 to 71°C (-20 to +160°F)

Thermal Coefficients: (68°F (20°C) ref.) % Span/°F:

Accuracy Class: 0.5% 1%

ZERO ±0.028% ±0.04%

SPAN ±0.028% ±0.04%

Optional (0.5% Accuracy Class only):

ZERO ±0.014% N/A

SPAN ±0.014% N/A

Multiply thermal zero coefficients by 1.5 on 0/30 psi, vac/15 range and by 3 on 0/15 and vac/0 ranges

Humidity: No performance effect at 95% relative humidity-noncondensing

FUNCTIONAL SPECIFICATIONS

Standard Ranges (psi) gauge, compound:

0/15* 0/300 0/5000 vac./60*

0/30* 0/500 0/7500* vac./45*

0/60* 0/750 0/10,000* vac./30*

0/100 0/1000 0/15,000* vac./15*

0/150 0/2000 0/20,000* vac./0*

0/200 0/3000

*1% accuracy ranges only.

Consult factory for nonstandard ranges\.

Overpressure Limits (F.S.):

	15- 2000	3000- 5000	7500- 20,000
Proof	200%	150%	120%
Burst	800%	300%	150%

Vibration Sweep: Less than ±0.1%F.S. effect for 0-2000 Hz at 20 g's in any axis

Shock: Less than ±0.05% F.S. effect for 100 g's, 20ms shock in any axis

Response Time: Less than 5 ms

Position Effect: Less than 0.01% F.S.

ELECTRICAL SPECIFICATIONS

Output Signal (consult factory for options):

4-20mA (2 wire)

1-5 Vdc (3 wire)

1-6 Vdc (3 wire)

1-11 Vdc (3 wire) (minimum excitation 15 Vdc)

Power Requirements: 10-36 Vdc unregulated, <3mA for voltage output

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PHYSICAL SPECIFICATIONS

Enclosure: NEMA 4X (NEMA 1 only if <500 psig if electrical termination is Bendix® or Hirschmann®)

Weight: 2 oz. (approx. w/o cable)

Reverse Polarity Protected

MATERIALS:

Case: 300 series stainless steel

Cable: No. 24 AWG, 36" PVC, shielded, vented, UL approved

Diaphragm: 17-4 PH stainless steel

Standard Process Connections:

(316 stainless steel)

1/8" NPT male or female

1/4" NPT male or female

1/4" SAE-J-514 (male)

3/16"-18 UNF 2B AMINCO (female) required for pressures over 10,000 psi

Other connections available on request

HAZARDOUS LOCATION CERTIFICATIONS

Factory Mutual  **approvals:***

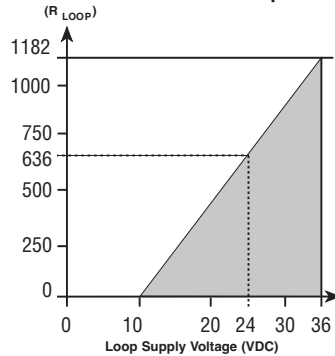
Intrinsically Safe for use in: Class I, II, III, Div. 1, Groups A, B, C, D, F, G when used with safety barriers in accordance with Ashcroft drawing 71B212 Sht (1-3).

Nonincendive for: Class I, Div. 2, Groups A, B, C, D

Special Protection for: Class II, III, Div. 2, Group F, G

*Note: Available with 4-20mA output only

Load Limitations 4-20mA Output Only



$$V_{min} = 10V + (.022A \times R_L)$$

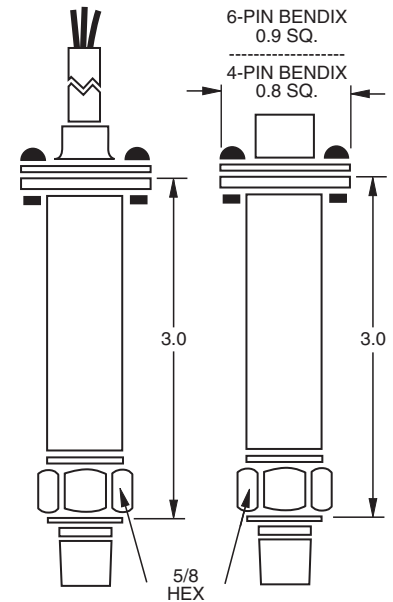
$$R_L = R_S + R_W$$

R_L = Loop Resistance (ohms)

R_S = Sense Resistance (ohms)

R_W = Wire Resistance (ohms)

DIMENSIONS (inches)



How To Order

K 1	Accuracy/TC (3) 0.50% ±0.014%/°F (5) 0.50% ±0.028%/°F (7) 1.0% ±0.040%/°F	Pressure Connection (M01) 1/8" NPT-M (F01) 1/8" NPT-F (M02) 1/4" NPT-M (F02) 1/4" NPT-F (MEK) 1/2"-20 SAE (F09) 3/16"-18 Female AMINCO**	Output Signal (42) 4-20mA (15) 1-5 Vdc (16) 1-6 Vdc (11) 1-11 Vdc	Electrical Termination (F2) 36" Cable, Shielded, PVC Sheathing (B4) Bendix 4-pin #PT02A-8-4P* (B8) WP Bendix 4-pin #PT02H-8-4P* (B6) Bendix 6-pin #PT02A-10-6P* (B9) WP Bendix 6-pin #PT02H-10-6P* (C1) 1/2" NPT-M Conduit and 36" cable (HM) Hirschmann Miniature	Pressure Range (Vac/0) Vac/0 through (20,000) 20,000 psi (see Standard Ranges) Call for more options	X Variations (XFM) FM Approval Option (4-20mA output)
Type Configuration (K1)						

*Mating connector available as necessary
**Required for ranges > 10,000 psi