Type K1 Thin Film Pressure Transducer/Transmitter

APPLICATIONS:

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

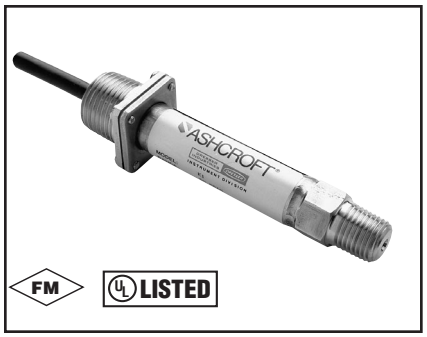
BENEFITS & FEATURES:

- ***0.5% and 1.0% accuracy***
- ***Vac.-2000 psi pressure range***
- ***FM approved and UL listed***
- ***Superior long-term stability and repeatability***
- ***Stainless steel NEMA 4X enclosure***
- ***Current/voltage output***
- ***Wide range of electrical connections available***

The Ashcroft® K1 transmitter introduces the benefits of polysilicon thin film performance at affordable prices. Modern low-pressure chemical vapor deposition methods provide simple, stable molecular bonds between a proven 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 and specifications are conservatively stated. A calibration test certificate is available with each transmitter.

PERFORMANCE CHARACTERISTICS

Standard Ranges (psi)

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.

Accuracy Class (F.S.): (Using T.P. method)	0.5%	1%
Best fit straight line (BFSL)	±0.25	±0.4
Hysteresis	±0.15	±0.2
Nonrepeatability	±0.05	±0.07
Interchangeability	±0.5%	±1.0%

Durability:
10^8 cycles 20/80%F.S. with negligible performance change

Stability: ±0.5% F.S./yr

ENVIRONMENTAL CHARACTERISTICS

Temperature Limits:

Storage:	–65 to +250°F
Operating:	–20 to +180°F
Compensated Range:	–20 to +160°F

Thermal Coefficients: (68°F ref.) %F.S./°F

Standard:

	0.5%	1%
ZERO	±0.028%	±0.04%
SPAN	±0.028%	±0.04%

Optional:

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 CHARACTERISTICS

Overpressure Limits (F.S.):

	0/15-0/2000	0/3000-0/5000	0/7500-20,000
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

Position Effect: Less than 0.01% F.S.

ELECTRICAL SPECIFICATIONS

Output Signal:
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

Response Time: Less than 5 ms

Reverse Polarity Protected

Supply Current: <3mA for voltage outut

PHYSICAL CHARACTERISTICS

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

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

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)
1/4 AMINCO (female) required for pressures over 10,000 psi
Other connections available

HAZARDOUS LOCATION CERTIFICATIONS

(Available optional on 0.5% model only)
Factory Mutual FM approvals
Intrinsically Safe for use in:
Class I, II, III, Div. 1, Groups A, B, C,D, F, G when used with safety barriers connected in accordance with Dresser 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

TO ORDER THIS TYPE K1 TRANSDUCER/TRANSMITTER:

Select: K 1 ☐ ☐☐☐ ☐☐ ☐☐ ☐☐☐☐☐☐ ☐☐

1. Type Configuration (K1)

2. Accuracy/TC
(3) 0.50%, ±0.014%/°F **(5)** 0.50%, ±0.028%/°F
(7) 1.0%, ±0.040%/°F

3. Pressure Connection
(M01) 1/8 NPT-M **(F01)** 1/8 NPT-F **(M02)** 1/4 NPT-M **(F02)** 1/4 NPT-F
(MEK) 7/16 -20-M **(F09)** aminco 9/16-18-Female

4. Output Signal
(42) 4-20mA **(15)** 1/5 Vdc **(16)** 1/6 Vdc **(11)** 1/11 Vdc

5. Electrical Termination
(F2) 36˝ cable, shielded, PVC sheathing **(B4)** Bendix 4-pin # PT02A-8-4P* **(HM)** Hirschmann miniature
(B6) Bendix 6-pin # PT02A-10-6P* **(B8)** WP Bendix 4-pin # PT02E-8-4P*
(B9) WP Bendix 6-pin # PT02E-10-6P* **(C1)** 1/2 NPT-M Conduit w/36˝ Cable

6. Pressure Range
(Vac./0) Vac./0 through **(20000)** 20,000 psi (see standard ranges). Call for more options.

7. Optional X-Variations
(XFM) FM Approval Option

*Mating connector available as necessary

Reference Bulletin PT-1

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