

Model K8 Pressure Transducer



APPLICATIONS:

Hydraulic, hand tools, machine tool, compressor, HVAC, medical, control valves, construction equipment and general purpose industrial process and OEM applications

FEATURES:

- 0.5% and 1.0% accuracy
- 45-20,000 psi pressure ranges
- Superior long-term stability and repeatability
- Wide range of pressure and electrical connections available
- Miniature size and light weight
- Millivolt output

The Ashcroft® K8 is a proven pressure transducer incorporating polysilicon thin film technology. Modern low-pressure chemical vapor deposition methods provide simple, stable molecular bonds between metal diaphragm and a polysilicon strain gage bridge. There are no epoxies or bonding agents to contribute to signal instability or drift.

The K8 is offered in many standard pressure ranges with high quality millivolt output. Signal output is proportional to supply voltage, and sensitivity varies between 6-18 mV/V at full scale.

Transducer performance is directly traceable to the National Institute of Standards and Technology.

PERFORMANCE SPECIFICATIONS

Accuracy Class (Span):

Includes non-linearity $\pm 0.5\%$ $\pm 1.0\%$
(Terminal Point Method), hysteresis, non-repeatability

Best Fit Straight Line (BFSL) $\pm 0.25\%$ $\pm 0.4\%$

Interchangeability $\pm 0.25\%$ $\pm 0.6\%$

Durability: 10^8 cycles with negligible performance change

Stability: $\pm 0.5\%$ Span/yr

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

Storage: -54 to 121°C (-65 to $+250^\circ\text{F}$)

Operating: -28 to 82°C (-20 to $+180^\circ\text{F}$)

Comp. Range: -28 to 82°C (-20 to $+180^\circ\text{F}$)

Thermal Coefficients: (68°F (20°C) ref.) %Span/ $^\circ\text{F}$

Accuracy Class:	0.5%	1%
ZERO	$\pm 0.028\%$	$\pm 0.04\%$
SPAN	$\pm 0.028\%$	$\pm 0.04\%$

Optional (Accuracy Class only):

ZERO	$\pm 0.014\%$	N/A
SPAN	$\pm 0.014\%$	N/A

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

FUNCTIONAL SPECIFICATIONS

Standard Ranges (psi)

0/45*	0/300	0/3000	0/20,000*
0/60*	0/500	0/5000	
0/100	0/750	0/7500	
0/150	0/1000	0/10,000*	
0/200	0/2000	0/15,000*	

*1% accuracy ranges only.

Consult factory for nonstandard ranges.

Overpressure Limits (F.S.):

	45-2000	3000-5000	7500-20,000
Proof	200%	150%	120%
Burst	800%	300%	150%

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

Shock: Less than $\pm 0.05\%$ 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.

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ELECTRICAL SPECIFICATIONS

Output (Sensitivity): Varies from 6-18mv/V at full scale depending upon pressure range
Consult factory for interchangeability within a particular pressure range

Excitation: 3-10 Vdc regulated

Supply Current: 1.4mA (nominal)

Zero Offset: $\pm 3\text{mV/Vdc}$

Bridge Resistance: 3500 ohms (nominal)

Circuit to Case Insulation Resistance:

100 M ohms @ 50 Vdc

PHYSICAL SPECIFICATIONS

Weight: 2 oz (approx. without cable F1 Type)

MATERIALS:

Socket: 300 series stainless steel

Cable: 4" polyethylene coated, 30 AWG or UL approved 36", shielded, vented cable (24 AWG)

Diaphragm: 17-4 PH stainless steel

Standard Process Connections: (316 stainless steel)

$\frac{1}{8}$ NPT male or female

$\frac{1}{4}$ NPT male or female

$\frac{1}{4}$ SAE-J-514 (male)

$\frac{1}{4}$ AMINCO (female) required for pressures over 10,000 psi

Other connections available

DIMENSIONS

Fig. 1

F2 Electrical Termination

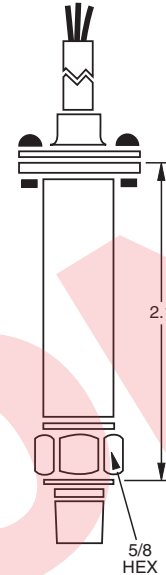


Fig. 2

F1 Electrical Termination with Pressure Connector

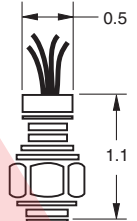
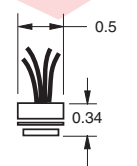


Fig. 3

F1 Electrical Termination without Pressure Connector



How To Order

K 8			M V			#	X
Type Configuration (K8)	Accuracy (3) 0.50% $\pm 0.014\%/^{\circ}\text{F}$ (5) 0.50% $\pm 0.028\%/^{\circ}\text{F}$ (7) 1.0% $\pm 0.040\%/^{\circ}\text{F}$	Pressure Connection (000) None (M01) $\frac{1}{8}$ NPT-M (F01) $\frac{1}{8}$ NPT-F (M02) $\frac{1}{4}$ NPT-M (F02) $\frac{1}{4}$ NPT-F (MEK) $\frac{3}{16}$ -20 SAE male (F09) $\frac{3}{16}$ -18 UNF (T01) $\frac{1}{4}$ COMP. FIT	Sensitivity (Output) (MV) mV/V	Electrical Termination (F1) 4" Leads (Fig. 2, 3) (F2) 36" Cable, Shielded, PVC Sheathing (Fig. 1)	Pressure Range (100) 100 psi (20,000) 20,000 psi (See above)		X-Variations Consult factory for options