

## 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	±0.5%	±1.0%
(Terminal Point Method), hysteresis, non-repeatability		
Best Fit Straight Line (BFSL)	±0.25%	±0.4%
Non-linearity		

#### Interchangeability

±0.5% ±1.0%

**Durability:** 10<sup>8</sup> cycles 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 82°C	(-20 to +180°F)

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

#### Accuracy Class:

	<b>0.5%</b>	<b>1%</b>
ZERO	±0.028%	±0.04%
SPAN	±0.028%	±0.04%

#### Optional (Accuracy Class only):

ZERO	±0.014%	N/A
SPAN	±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.):

	<b>45-2000</b>	<b>3000-5000</b>	<b>7500-20,000</b>
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.

## Model K8 Pressure Transducer

### 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

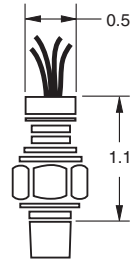
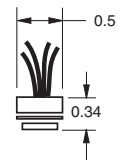


Fig. 3

F1 Electrical Termination without Pressure Connector



### How To Order

<b>K 8</b>			<b>M V</b>			<b>#</b>	<b>X</b>
<b>Type Configuration (K8)</b>	<b>Accuracy</b> (3) 0.50% $\pm 0.014\%/^{\circ}\text{F}$ (5) 0.50% $\pm 0.028\%/^{\circ}\text{F}$ (7) 1.0% $\pm 0.040\%/^{\circ}\text{F}$	<b>Pressure Connection</b> (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	<b>Sensitivity (Output) (MV) mV/V</b>	<b>Electrical Termination</b> (F1) 4" Leads (Fig. 2, 3) (F2) 36" Cable, Shielded, PVC Sheathing (Fig. 1)	<b>Pressure Range</b> (45) 45 psi (20,000) 20,000 psi (See Standard Ranges under Functional Specifications)		<b>X-Variations</b> Consult factory for options