

Data Sheet

K1 Pressure Transmitter

FEATURES

- Pressure ranges from vacuum through 20,000 psi
- Choice of $\pm 0.5\%$ or $\pm 1.0\%$ accuracy
- All SS wetted parts
- FM approved (optional)
- NEMA 4X enclosure
- Wide range of electrical connections available
- Optional panel meter digital display – see Ashcroft model DM61

TYPICAL USES

- Hydraulic
- Refrigeration
- Machine tool
- Test/measurement
- Pump control
- HVAC
- Medical
- Construction equipment
- All general purpose industrial process applications



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PERFORMANCE SPECIFICATIONS

Reference Temperature:	68°F (20°C)
Accuracy Class (% Span):	$\pm 0.5\%$, $\pm 1.00\%$ of span Includes non-linearity, hysteresis, non-repeatability, zero offset and span setting errors
Best Fit Straight Line (BFSL):	$\pm 0.25\%$, $\pm 0.40\%$ of span. Add $\pm 0.05\%$ for ranges above 5000 psi
Durability:	> 10 million cycles
Stability:	$\pm 0.5\%$ Span/year at reference conditions

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:	Storage: -65°F to 250°F (-54°C to 121°C) Operating: -20°F to 180°F (-28°C to 82°C) Compensated: -20°F to 160°F (-28°C to 71°C)
Thermal Coefficients: (ref. 68°F (20°C))	Accuracy: 0.5% 1% ZERO $\pm 0.028\%$ $\pm 0.04\%$ SPAN $\pm 0.028\%$ $\pm 0.04\%$
Humidity Effects:	No performance effect at 95% relative humidity-noncondensing
Thermal Zero Coefficients:	1.5 on 0/30 psi, vac/15 range and by 3 on 0/15 and vac/0 ranges

KEY BENEFITS

- Proven sensor technology and performance
- Long time choice for many industrial applications
- Superior long-term stability and repeatability

FUNCTIONAL SPECIFICATIONS

Response Time:	<5ms		
Pressure Ranges:	15 to 20,000 psig, compound to 60 psig		
Shock Effect:	Less than $\pm 0.05\%$ F.S. effect for 100 g's, 20ms shock in any axis		
Vibration Effect:	Less than $\pm 0.1\%$ F.S. effect for 0-2,000 Hz at 20 g's in any axis		
Position Effect:	Less than $\pm 0.01\%$ F.S.		
Standard Ranges (psi, gauge, compound):	0/15*	0/5000	vac./60*
	0/30*	0/7500*	vac./45*
	0/60*	0/10,000*	vac./30*
	0/100	0/15,000*	vac./15*
	0/150	0/20,000*	vac./0*
	0/200		

* 1% accuracy ranges only

Overpressure:	Proof:	Burst:
$\leq 2,000$ psi	2 X Range	8 X Range
$\geq 3,000$ to $\leq 5,000$ psi	1.5 X Range	3 X Range
$\geq 7,500$ to $\leq 20,000$ psi	1.2 X Range	1.5 X Range

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ELECTRICAL SPECIFICATIONS

Output Signal: 4-20mA (2 wire)
 1-5 Vdc (3 wire)
 1-6 Vdc (3 wire)
 1-11 Vdc (3 wire) (Min. excitation 15 Vdc)

Power Requirements Unregulated: 10-36 Vdc
 Voltage Output: <3mA

Circuit Protection: Reverse polarity and miss-wire protected

Insulation Resistance
 (Circuit Case): 100 MΩ @ 100 Vdc

PHYSICAL SPECIFICATIONS

Environmental Rating: NEMA 4X (NEMA 1 only if <500 psig if electrical termination is Bendix® or K1 part codes B4 & B6)

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

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

Process Connection Sizes: 1/8 NPT Male or Female
 1/4 NPT Male or Female
 1/4 SAE-J-514 Male
 9/16-18 UNF 2B AMINCO Female (over 10,000 psi)

HAZARDOUS SPECIFICATIONS

(K1 with XFM option) Intrinsically Safe – FM/CSA
 Intrinsic Safety: Class I, II and III Div. 1
 Groups A, B, C, D, F and G when used with safety barriers in accordance with Ashcroft drawing 71B212 Sht (1-3)
 Non-incendive: Class I, II and III Div. 2, Groups A, B, C, D, F and G, no barriers needed

WETTED MATERIAL

Diaphragm	Process Connection
17-4PH SS	304 SS

NON-WETTED

Housing

304 SS

OPTIONAL FEATURES

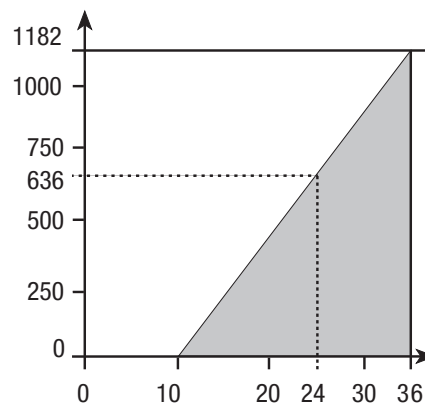
Calibration: Non-standard

Approval: FM (with 4-20mA output and XFM option code)

Thermal Coefficients: (0.5% Accuracy):
 ZERO ±0.014%
 (ref. 68°F (20°C)) SPAN ±0.014%

Consult factory for: Nonstandard ranges,
 more Process Connection sizes and Output Signal
 non-standard options

LOAD LIMITATIONS 4-20mA OUTPUT ONLY



Loop Supply Voltage (VDC)

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

$$R_L = R_s + R_w$$

R_L = Loop Resistance (ohms)

R_s = Sense Resistance (ohms)

R_w = Wire Resistance (ohms)

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ORDERING CODE	Example:	K1	7	M01	42	F2	100#	XCL
Model								
K1 - Pressure Transmitter		K1						
Accuracy/Tem. Effects								
7 - 1.00%/±0.040%/ °F			7					
5 - 0.50%/±0.028%/ °F								
3 - 0.50%/±0.014%/ °F								
Pressure Connection Size								
M01 - ½ NPT Male				M01				
M02 - ¼ NPT Male								
F02 - ¼ NPT Female								
MEK - ⅜-20 SAE Male								
F09 - ⅝-18 (¼) Female Aminco®								
M04 - ½ NPT Male								
Output Signal								
42 - 4-20 mA					42			
15 - 1-5 Vdc								
16 - 1-6 Vdc								
11 - 1-11 Vdc								
12 - 0.1-10 Vdc								
Electrical Termination								
F2 - 3' shielded cable Integral Cable (Pigtail)						F2		
HM - W/o mating connection Hirschmann® G series connector (miniature type)								
B4 - W/o mating connection 4-Pin Bendix® style								
B6 - W/o mating connection 6-Pin Bendix® style								
B8 - W/o mating connection environmental sealed/moisture proof 4-Pin Bendix® style								
B9 - W/o mating connection environmental sealed/moisture proof 6-Pin Bendix® style								
C1 - 3' shielded cable ½ NPT Male conduit shielded cable								
Standard Pressure Ranges								
15# - 15 psi								
30# - 30 psi								
60# - 60 psi								
100# - 100 psi							100#	
150# - 150 psi								
200# - 200 psi								
300# - 300 psi								
500# - 500 psi								
750# - 750 psi								
1000# - 1,000 psi								
2000# - 2,000 psi								
3000# - 3,000 psi								
5000# - 5,000 psi								
7500# - 7,500 psi								
10000# - 10,000 psi								
15000# - 15,000 psi (K1) with F09 code process conn.								
20000# - 20,000 psi (K1) with F09 code process conn.								
0# & vac - 0/vac								
15# & vac - vac/15 psi								
30# & vac - vac/30 psi								
45# & vac - vac/45 psi								
60# & vac - vac/60 psi								
100# & vac - vac/100 psi								
Option (if including an option(s) must include an "X")								X__
CL - Non-standard calibration								CL
FM - FM Approval option (K1 only with 4-20 mA)								

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DIMENSIONS in [] are millimeters

For reference only, consult Ashcroft for specific dimensional drawings

