

K1 Pressure Transmitter

FEATURES

- Pressure ranges from vacuum through 20,000 psi
- Choice of ±0.5% or ±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



K1 Pressure Transmitter



PERFORMANCE SPECIFICATIONS

| | |
|--------------------------------|---|
| Reference Temperature: | 68°F (20°C) |
| Accuracy Class (% Span): | ±0.5%, ±1.00% of span Includes non-linearity, hysteresis, non-repeatability, zero offset and span setting errors |
| Best Fit Straight Line (BFSL): | ± 0.25%, ± 0.40% of span. Add ± 0.05% for ranges above 5000 psi |
| Durability: | > 10 million cycles |
| Stability: | ±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 ±0.028% ±0.04% SPAN ±0.028% ±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 ±0.05% F.S. effect for 100 g's, 20ms shock in any axis | | | | | | | | | | | | | | | | | | |
| Vibration Effect: | Less than ±0.1% F.S. effect for 0-2,000 Hz at 20 g's in any axis | | | | | | | | | | | | | | | | | | |
| Position Effect: | Less than ±0.01% F.S. | | | | | | | | | | | | | | | | | | |
| Standard Ranges (psi, gauge, compound): | <table border="1"> <tr> <td>0/15*</td> <td>0/5000</td> <td>vac./60*</td> </tr> <tr> <td>0/30*</td> <td>0/7500*</td> <td>vac./45*</td> </tr> <tr> <td>0/60*</td> <td>0/10,000*</td> <td>vac./30*</td> </tr> <tr> <td>0/100</td> <td>0/15,000*</td> <td>vac./15*</td> </tr> <tr> <td>0/150</td> <td>0/20,000*</td> <td>vac./0*</td> </tr> <tr> <td>0/200</td> <td></td> <td></td> </tr> </table> | 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 | | |
| 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: |
| ≤2,000 psi | 2 X Range | 8 X Range |
| ≥3,000 to ≤5,000 psi | 1.5 X Range | 3 X Range |
| ≥7,500 to ≤20,000 psi | 1.2 X Range | 1.5 X Range |

Data Sheet

K1 Pressure Transmitter

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

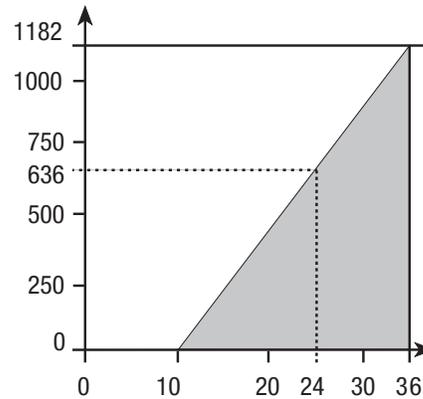
Calibration: Non-standard

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)

Data Sheet

K1 Pressure Transmitter

| 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 - 1/8 NPT Male | | | | M01 | | | | |
| M02 - 1/4 NPT Male | | | | | | | | |
| F02 - 1/4 NPT Female | | | | | | | | |
| MEK - 7/16-20 SAE Male | | | | | | | | |
| F09 - 9/16-18 (1/4) Female Aminco® | | | | | | | | |
| M04 - 1/2 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 (minature 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 1/2 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

