



Explosion Proof Pressure Transmitter Type E-10

Flush Diaphragm Type E-11

Tronic

- FM approved explosion proof for Class I Division 1 hazardous locations
- Available with 4-20 mA 2-wire or 1-5 volt 3-wire low power output signals
- Engineered to meet the harsh demands of industrial applications
- NACE MR0175 compliant
- Retrofits many existing applications



Explosion proof:
Class I, Division 1, Groups A, B, C, and D

Dust-ignitionproof:
Class II/III Division 1, Groups E, F, and G

The Types E-10 and E-11 explosion proof pressure transmitters are specifically designed to meet the durability and performance requirements of industrial applications. These pressure transmitters feature an industry standard 4-20 mA 2-wire signal output, NEMA 4X (IP 67) weather protection, and are extremely resistant to pressure spikes, vibration, and moisture intrusion. NACE MR-01-75 compliance provides extra resistance against sulfide stress cracking when exposed to gases containing sulphur.

The transmitters are engineered to meet Class I Division 1 Explosion proof protection for installation in hazardous environments. Each transmitter undergoes extensive quality control testing and calibration to achieve a linearity of $\leq 0.25\%$ full scale. In addition, each pressure transmitter is temperature compensated to assure accuracy and long term stability when exposed to severe ambient temperature variations.



E-10

E-11

STANDARD RANGES

RANGE	MAXIMUM*	BURST**	RANGE	MAXIMUM*	BURST**
30"-0 HgVac	70 PSI	70 PSI	0-500 PSI	1100 PSI	5800 PSI
30"-0-30 PSI	250 PSI	250 PSI	0-1000 PSI	1750 PSI	8000 PSI
30"-0-100 PSI	500 PSI	500 PSI	0-1500 PSI	2900 PSI	11,600 PSI
0-15 PSI(A)	70 PSI	70 PSI	0-2000 PSI	4600 PSI	14,500 PSI
0-30 PSI	145 PSI	145 PSI	0-3000 PSI	4600 PSI	14,500 PSI
0-60 PSI	250 PSI	250 PSI	0-5000 PSI	11,600 PSI	25,000 PSI
0-100 PSI(A)	500 PSI	500 PSI	0-8000 PSI ¹	17,400 PSI	35,000 PSI
0-200 PSI	500 PSI	500 PSI	0-10,000 PSI ¹	17,400 PSI	35,000 PSI
0-300 PSI	1100 PSI	1100 PSI	0-15,000 PSI ¹	21,750 PSI	43,500 PSI

¹ Type E-11 flush diaphragm not available above 5000 PSI.

Notes:

* Pressure applied up to the maximum rating will cause no permanent change in specifications

** Exceeding the burst pressure may result in destruction of the transmitter and loss of media.

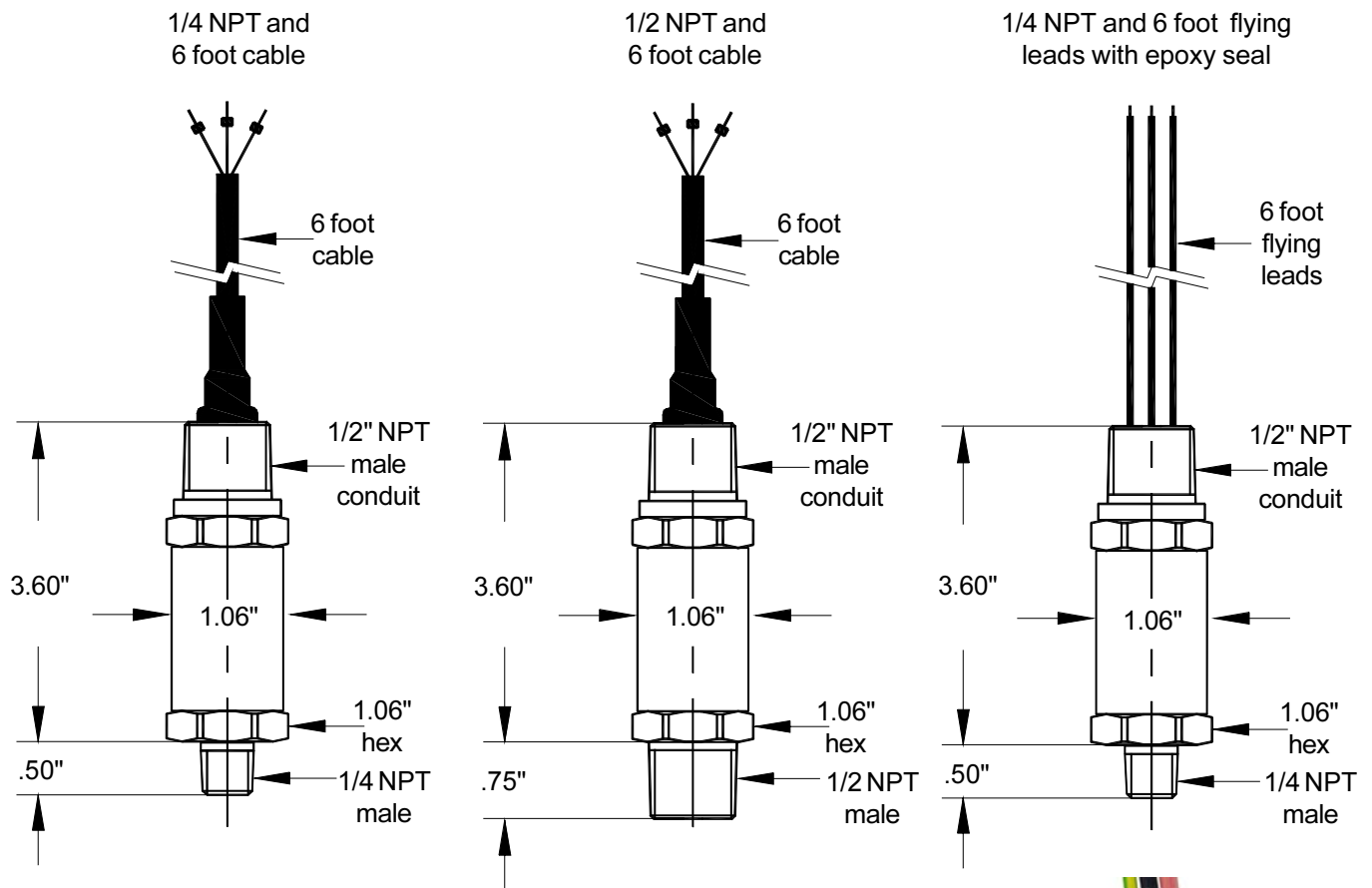
(A) identifies standard ranges available with absolute pressure reference.

Specifications		Type E-10 and E-11
Sensing principle Pressure ranges Pressure reference	PSI	piezoresistive up to 300 PSI, thin film \geq 400 PSI standard ranges as listed {custom ranges available} relative pressure {absolute reference to 300 PSIA}
Pressure connection Type E-10 Type E-11 Material: -wetted parts Type E-10 above 300 PSI Type E-11 -case -internal transmitting liquid		1/4"NPT male, 1/2" NPT male {other connections available} for ranges < 30 PSI: G1B flush diaphragm for ranges 30 PSI to 5000 PSI: G1/2B flush diaphragm 1.4571 stainless steel (316 ss) 1.4571 stainless steel (316 ss) and 2.4711 (Elgiloy) 1.4571 stainless steel (316 ss), EPDM O-ring {Viton} 1.4571 stainless steel (316 ss) synthetic oil for piezoresistive sensors to 300 PSI and all E-11 flush diaphragm transmitters, no liquid fill used for Type E-10 thin film sensors above 300 PSI
Supply voltage V_s Output and load limitations: Output signal and maximum load Power consumption: 4-20 mA 2-wire 1-5 V and 0.5-4.5V 3-wire Response time (10...90%)	DC Volts mA milliseconds	10 - 30 for 4-20 mA 2-wire system 6 - 30 for 1-5 V 3-wire low power system 4 - 20 mA 2-wire system 1 - 5 V 3-wire 20 (maximum under full pressure) $\leq 2 (V_s \leq 12 V)$ ≤ 1 $R_{(max)} [Ohm] = (V_s - 10V) / 0.02 A$ $R_{(min)} [Ohm] = 5 kOhms$
Accuracy (linearity, including hysteresis and repeatability) Repeatability Hysteresis 1 year stability Zero and span offset	% of span % of span	$\leq 0.25\%$ (B.F.S.L.) ≤ 0.05 ≤ 0.1 ≤ 0.2 (under reference conditions) ≤ 0.5
Temperature Media Ambient Storage Compensated range Temperature error (reference 70°F): on zero point on span Total temperature compensation error: within compensated range between -4°F to +176°F	 % of span % of span	-22°F to +212°F (-30°C to +100°C) {-46°F to +221°F (-43°C to +105°C)} ¹ -22°F to +212°F (-30°C to +100°C) {-46°F to +221°F (-43°C to +105°C)} ¹ -40°F to +221°F (-40°C to +105°C) {-58°F to +221°F (-50°C to +105°C)} ¹ +32°F to +176°F (0°C to +80°C) ≤ 0.2 per 18°F (10°C) change ≤ 0.2 per 18°F (10°C) change 1.6% (typical) 2.0% (typical)
Approval authority		see table on page 3
EMI specifications		Interference emission and immunity per EN 61326
Shock resistance Vibration resistance	g g	1000 per IEC 770 for mechanical shock 20 per IEC 770 for vibration under resonance conditions
Electrical connection Weight Dimensions Electrical protection Environmental protection	 lb	1/2" male conduit with 6 foot shielded cable {1/2" male conduit with 6 foot epoxy sealed color coded flying leads} approximately 0.4 (0.2 Kg) not including cable see drawings protected against reverse polarity NEMA 4X (IP 67)

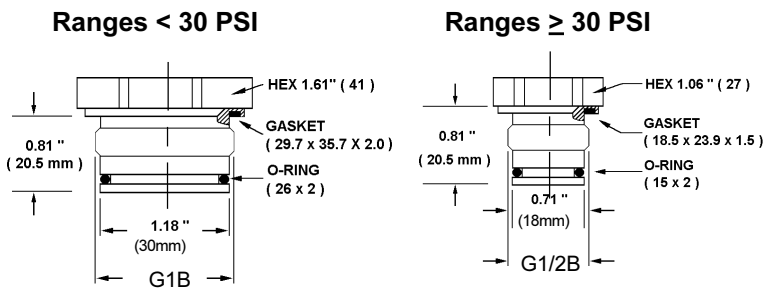
Note: Items in curved brackets { } are available as special order options

¹ Transmitters function when exposed to these extended temperature ranges. The media, when exposed to temperature extremes, may change characteristics that effect transmitter performance. Contact the factory for additional information.

E-10 Dimensions

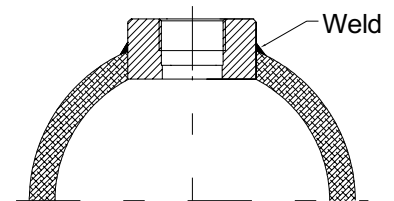
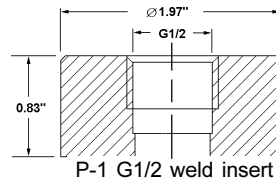
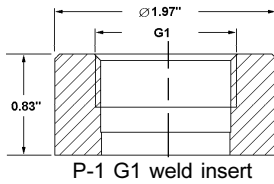


E-11 Process connection dimensions



1/2" male conduit with 6 foot flying leads and factory epoxy seal

Matching P-1 weld insert



Example of P-1 adapter installed in pipe

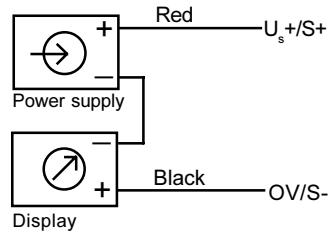
The E-11 flush diaphragm transmitter provides a flat, non-clogging process connection for use with sludge, slurry, viscous, or crystallizing media. Pressure ranges below 30 PSI are G1B, 30 PSI and up are G1/2B.

Wiring

4-20 mA 2-wire system

Wire	Coding	Wire Color
Supply +	U_B+ / S+	Red
Signal -	0V / S-	Black

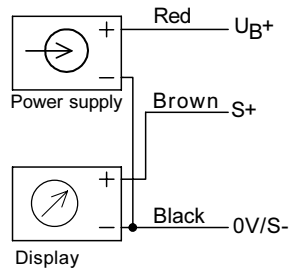
Use green wire or braided conductor for shield / ground connection



3-wire voltage system

Wire	Coding	Wire Color
Supply +	U_B+	Red
Supply - Signal -	0V / S-	Black
Signal +	S +	Brown

Use green wire or braided conductor for shield / ground connection



Install to NEC (National Electric Code) and local codes as applicable.

Approval authority

FACTORY MUTUAL (FM) Explosion proof with entity approval for:

Class I, Division 1, Groups A,B,C and D

Dust-ignitionproof with entity approval for:

Class II/III, Division 1, Groups E, F and G

Maximum electrical ratings 30 V, 20 mA.

FM Standards according to Class number 3600, 3615 and 3810

Ordering Information:

State computer part number (if available) / type number / range / signal output / process connection / electrical connection / other options required.

Specifications provided in this data sheet represent the state of engineering at the time of printing. Modifications may take place and the specified materials may change without prior notice.

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