

## Model T2 Pressure Transducer



### APPLICATIONS

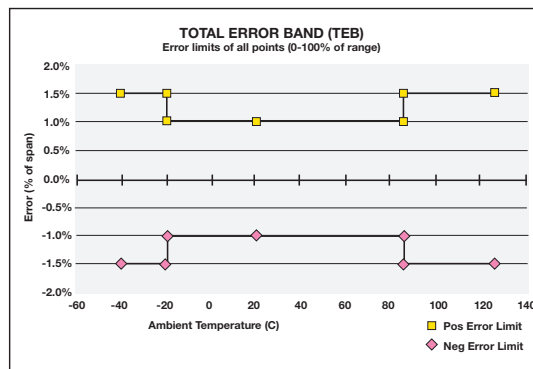
An affordable digitally compensated instrument for general industrial applications.

- Process Automation
- Compressor Control
- Hydraulic Systems
- Engine Monitoring
- Pump Control
- Pneumatics
- Refrigeration Equipment
- Presses
- Machine Tools
- Other General Industrial Applications

### FEATURES

- 0.25% accuracy class
- Ranges 30 psi through 20,000 psi
- -40 to +125°C temperature capability
- All welded pressure construction
- Proven polysilicon thin film sensor
- Precision ASIC based electronics
- High EMI/RFI immunity rating
- Highly configurable
- Voltage and current outputs
- Choice of electrical connections

The T2 employs a polysilicon thin film sensor with a proven long term stability. The sensor is electron beam welded to a stainless steel pressure fitting to ensure high overpressure ratings and integrity in high shock, vibration and pressure cycling applications. Through the use of a high performance ASIC and modern digital compensation techniques the T2 provides extraordinary performance over temperature. The graph that follows depicts the performance over temperature on a Total Error Band basis – the Total Error Band includes not only temperature effects but also non-linearity, hysteresis and non-repeatability.



### PERFORMANCE SPECIFICATIONS

Ref. Temperature, 21°C ±1°C (70°F, ±2°F)

#### Accuracy:

**Static Accuracy Class:** ±0.25% of span (BFSL Method) including non-linearity, hysteresis, non-repeatability at reference temperature

#### Temperature Effect:

-20°C to 85°C <±1% of Span – Total Error Band  
 -40°C to -20°C <±1.5% of Span – Total Error Band  
 -85°C to 125°C <±1.5% of Span – Total Error Band  
 Total Error Band includes the combined effects of non-linearity (Terminal Point Method), hysteresis, non-repeatability, temperature and zero offset and span setting errors. For higher performance availability consult factory

**Stability:** Less than ±0.25% span/year

**Durability:** Tested to 50 million cycles

### ENVIRONMENTAL SPECIFICATIONS

#### Temperature:

Compensated -40 to 125°C (-40 to 257°F)  
 Operating -40 to 125°C (-40 to 257°F)  
 Storage -40 to 125°C (-40 to 257°F)

**Humidity:** 0 to 100% R.H., no effect

### FUNCTIONAL SPECIFICATIONS

Select from over 25 pressure ranges starting at 30 psi and running through 20,000 psi. Compound (vacuum & pressure) ranges are also available, see below.

Overpressure (F.S.):	Proof	Burst
750 psi & below	200% FS	1000% FS
1500 psi	200% FS	500% FS
3000 psi	200% FS	500% FS
5000 psi	150% FS	500% FS
7500 psi	120% FS	500% FS
10,000 psi	120% FS	240% FS
20,000 psi	120% FS	240% FS

**Vibration:** Random vibration (20 g) over temperature range (-40° to 125°C). Exceeds typical MIL. STD. requirements

**Shock:** 100gs, 6 ms

**Drop Test:** Withstands 1 meter on concrete 3 axis

**Response Time:** Less than 1 msec

**Warm-up Time:** Less than 500 msec typical

**Position Effect:** Less than ±0.01% span, typical

### ELECTRICAL SPECIFICATIONS

Output Signals Available:

Voltage Output	Excitation	Supply Current
0-5 Vdc, 3 wire	9-36 Vdc	5mA

0-10 Vdc, 3 wire	14-36 Vdc	5mA
1-5 Vdc, 3 wire	9-36 Vdc	4mA
1-6 Vdc, 3 wire	9-36 Vdc	4mA

#### Ratiometric Output

0.5-4.5 Vdc, 3 wire 5 Vdc ±0.5 Vdc 3.5mA

#### Current Output

4-20mA, 2 wire 9-36 Vdc

**Reverse Polarity & Miswired Protected:** Yes

**Insulation Breakdown Voltage:** 100 Vac

**Insulation Resistance:** Greater than 100 megohms at 100 Vdc

**CE Compliance:** Per EN 61326: 1997+ A1: 1998 + A2: 2001, Annex A (Heavy Industrial)

## Model T2 Pressure Transducer

UL Recognized component per IL-61010-1, CDA 22.2 6101-1 Electrical Equipment for Measurement, Control and Laboratory use.

### PHYSICAL SPECIFICATIONS

**Wetted Materials:** 304SS pressure connection and 17-4PH SS sensor diaphragm

**Housing:** 20% Glass Reinforced Nylon, Fire retardant to UL94 V1

#### Available Process Connections (Male):

1/8 NPT, 1/8 BSP, 1/4 NPT, G1/4 B, 3/16-20 UNF-2A

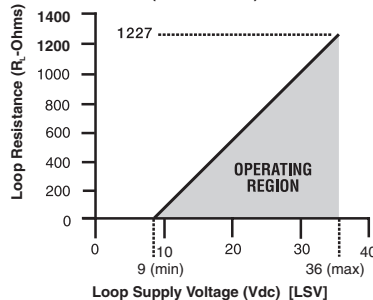
For other connections consult factory

**Ingress Rating:** Enclosure meets NEMA 4X, IP65

### ELECTRICAL TERMINATION

- Pigtail: 3 feet of shielded cable, PVC jacket, 24 AWG leads
- EN 175301-803, Form A (DIN 43650, Form A)
- Bendix style 4 pin, PTO 2A-8-4P or similar
- M12 x 1, 4 pin, Circular style

Power Supply Voltage vs. Loop Resistance (4-20mA ONLY)

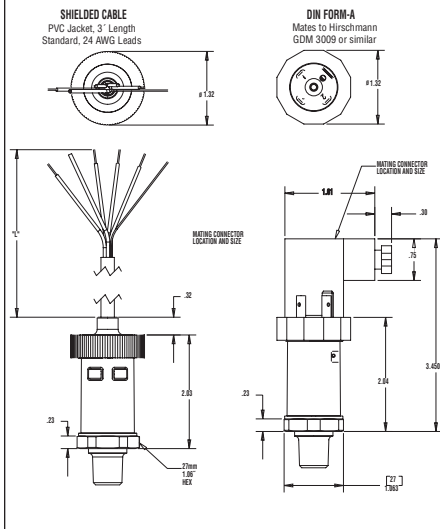


To Determine minimum loop supply voltage:  
 $LSV(\min) = 9(V) + [.022(A) \cdot R_L]$

#### Where:

- LSV = Loop Supply Voltage (Vdc)
- $R_L = R_S + R_W$  (ohms)
- $R_L$  = Loop Resistance (ohms)
- $R_S$  = Sense Resistance (ohms) [Measuring Instrument]
- $R_W$  = Wiring Resistance (ohms)

### DIMENSIONS



M12 and Bendix style termination designs share similar dimensions to those shown above.

### How To Order

<b>T 2</b>	<b>7</b>	□ □ □ □	□ □ □ □	□ □ □ □	□ □ □ □ □ □ □ □	<b>G</b>	- <b>X</b> □ □ □ □
<b>Type Configuration</b> (T2)			<b>Output Signal</b> 05 = 0-5 Vdc 10 = 0-10 Vdc 15 = 1-5 Vdc 16 = 1-6 Vdc 42 = 4-20mA RM = 0.5-4.5 Vdc Ratio Metric to 5Vdc supply	<b>Electrical Termination</b> EN 175301-803, Form A (DIN 43650, Form A) - Mates to Hirschmann GDM 3009 or similar DN = no mating conn. D0 = w/mating conn., no cable D2 = w/mating conn. 3' shielded cable M12 - Mates to Hirschmann 933 172-100 or similar EW = no mating conn. E0 = w/mating conn. no cable E2 = w/mating conn. & 3' shielded cable Circular 4 Pin - Mates to Amphenol <sup>††</sup> Bendix PT06A-8-4S-SR or similar B4 = no mating conn. <sup>††</sup> H1 = w/mating conn., no cable <sup>††</sup> L1 = w/mating conn. 3' shielded cable <sup>††</sup> Pigtail - Shielded cable with PVC Jacket and 24 AWG leads F2 = w/3' cable length F3 = w/10' cable length Consult factory for additional cable lengths	<b>Pressure Ranges</b> <b>psi Ranges</b> 30# = 30 psi 50# = 50 psi 60# = 60 psi 100# = 100 psi 150# = 150 psi 200# = 200 psi 300# = 300 psi 400# = 400 psi 500# = 500 psi 750# = 750 psi 1000# = 1000 psi 1500# = 1500 psi 2000# = 2000 psi 3000# = 3000 psi 5000# = 5000 psi 6000# = 6000 psi 7500# = 7500 psi 10000# = 10000 psi 15000# = 15000 psi 20000# = 20000 psi  <b>Compound Ranges</b> 30#&vac = 30 psi/-14.7 psi 45#&vac = 45 psi/-14.7 psi 60#&vac = 60 psi/-14.7 psi 85#&vac = 85 psi/-14.7 psi 100#&vac = 100 psi/-14.7 psi 150#&vac = 150 psi/-14.7 psi 200#&vac = 200 psi/-14.7 psi 300#&vac = 300 psi/-14.7 psi  Ranges in bar, kPa and mPa are also available	<b>Measurement Type</b> G = Gauge Pressure, Vented Housing  For sealed housing (PSIS) consult factory	<b>Optional X-Variations</b> Consult Factory for Available Options
		<b>Accuracy ±0.25% Static Accuracy Class (BFSL)</b> 1.0% Total Error Band -20°C/+85°C 1.5% Total Error Band -40°C/-20°C, 85/125°C	<b>Pressure Connection</b> M01 1/8 NPT-male M02 1/4 NPT-male MEK 3/16-20 SAE-male <sup>†</sup> MS2 1/4-19 bsp male <sup>†</sup> MG2 G 1/4 B male				
		Consult factory for other connections <sup>†</sup> Not UL recognized above 10,000 psi range <sup>††</sup> Not CE Compliant					