

Type T2 Pressure Transducer

An affordable digitally compensated instrument for general industrial applications

Important T2 Features

- .25% accuracy class
- Ranges 30 psi through 20,000 psi
- Broad 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

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



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ISO 9001
REGISTERED FIRM



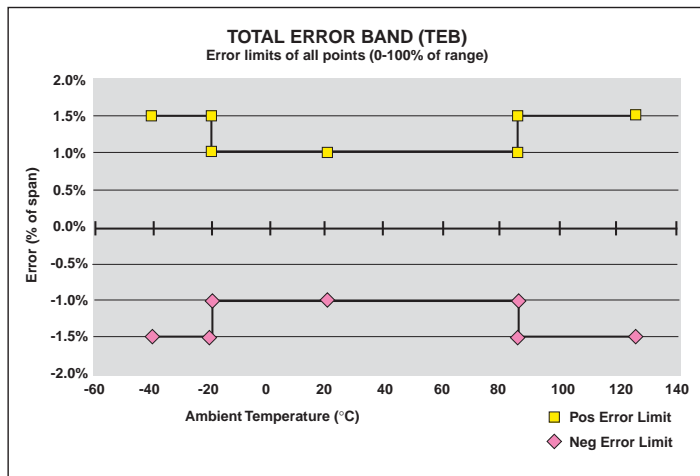
BULLETIN T2

Ashcroft® Type T2[†] Pressure Transducer

The Ashcroft® Type T2 pressure transmitter brings precision performance and affordable price to the general industrial market.

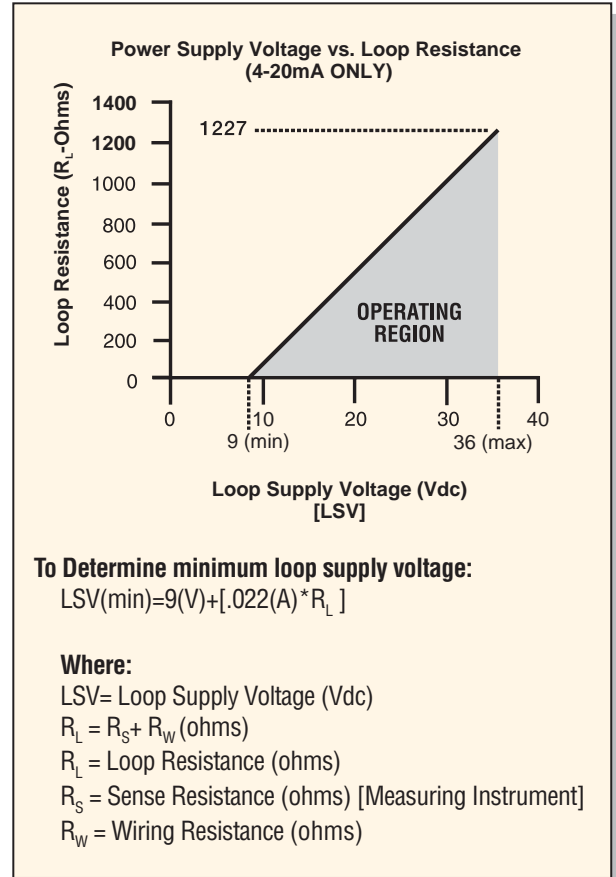
At reference temperature (21°C, 72°F) the T2 can be expected to deliver better than ±0.25% of span performance when hysteresis, non-repeatability, and linearity are considered on a Best Fit Straight Line basis. In many applications the effect of temperature extremes must also be considered. Through the use of a high performance ASIC, a field proven polysilicon thin film sensor, and modern digital compensation techniques, the T2 is manufactured to provide extraordinary performance over temperature. The graph below depicts the performance of the T2 on a Total Error Band basis. The T2 will provide ±1% of span performance from -20°C to 85°C (-4°F to 185°F) and ±1.5% of span at the temperature extremes of -40°C to -20°C (-40°F to -4°F) and 85°C to 125°C (185°F to 257°F).

The Total Error Band performance includes not only temperature effect but also linearity, hysteresis and non-repeatability.



The T2 is designed for accuracy, durability and long term stability. The pressure transducer employs a polysilicon thin film sensor element with a proven record of long term stability. The sensor is electron beam welded to a stainless steel pressure fitting to ensure high overpressure ratings and integrity in the presence of shock, vibration and pressure cycling. Further enhancing the durability of the T2 is the use of an internal circuit cage to cradle the unit's precision circuitry from the rigors of the toughest applications.

Intended to address a broad spectrum of industrial applications, the Ashcroft® T2 pressure transducer can be specified by the user from a long list of pressure connections, output signals, and electrical termination options.



PERFORMANCE SPECIFICATIONS

Reference Temperature, 21°C ± 1°C (72°F, ±2°F)

Accuracy:

Static Accuracy Class: ±0.25% of span (BFSL Method) including linearity, hysteresis and 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 linearity, hysteresis, non-repeatability and temperature.
 Refer to graph on facing page.

For higher performance availability consult factory.

Stability: Less than ± 0.25% span / year

Durability: Tested to 50 million cycles

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

Shock: 100g, 6ms

Drop Test: Withstands 1 meter on concrete, 3 axis

Response time: Less than 1 msec

Position effect: Less than ±0.01% span, typical

Enclosure meets NEMA 4X, IP65

FUNCTIONAL SPECIFICATIONS

Standard Ranges and Performance:

| Range (psig) | Proof (psig) | Burst (psig) |
|------------------|--------------|--------------|
| 0-30 | 90 | 450 |
| 0-45 | 90 | 450 |
| 0-60 | 120 | 600 |
| 0-100 | 200 | 1000 |
| 0-150 | 300 | 1500 |
| 0-200 | 400 | 2000 |
| 0-300 | 600 | 3000 |
| 0-500 | 1000 | 5000 |
| 0-750 | 1500 | 7500 |
| 0-1000 | 2000 | 7500 |
| 0-1500 | 3000 | 7500 |
| 0-2000 | 4000 | 10000 |
| 0-3000 | 6000 | 15000 |
| 0-5000 | 7500 | 25000 |
| 0-7500 | 9000 | 37500 |
| 0-10000 | 12000 | 24000 |
| 0-20000 | 24000 | 48000 |
| Compound (psig) | | |
| 30 psi & vacuum | 90 | 450 |
| 45 psi & vacuum | 90 | 450 |
| 60 psi & vacuum | 120 | 600 |
| 85 psi & vacuum | 200 | 1000 |
| 100 psi & vacuum | 200 | 1000 |
| 150 psi & vacuum | 300 | 1500 |
| 200 psi & vacuum | 400 | 2000 |
| 300 psi & vacuum | 600 | 3000 |

Consult factory for additional pressure ranges and measurement units. Ranges in bar, kPa and MPa are available.

ENVIRONMENTAL SPECIFICATIONS

Temperature Limits:

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: 0-100% R.H. no effect

ELECTRICAL SPECIFICATIONS

Available Output Signals

| 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 | 5mA |
| 1-6 Vdc, 3 Wire | 11-36 Vdc | 5mA |

Ratiometric Output

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

Current Output

4-20mA, 2 Wire 9-36 Vdc

Circuit Protection: Reverse polarity and miswire protected.

Insulation Breakdown Voltage: 100 Vac

Insulation Resistance: Greater than 100 megohms @ 100 Vdc

CE Compliance: Per EN61326: 1997

+ A1: 1998 +A2: 2001, Annex A (Heavy Industrial)

For higher radiated immunity capability, consult factory

PHYSICAL SPECIFICATIONS

Pressure Connections: 304 stainless steel

Housing: 20% Glass reinforced nylon, fire retardant to UL94 V1

Sensor Material: 17-4PH stainless steel

Sensor Type: Polysilicon thin film bridge

Available Pressure Connections (Male):

½ NPT, ¼ NPT, ¼ BSP, ⅜-20 SAE, G¼ B

For other connections consult factory.

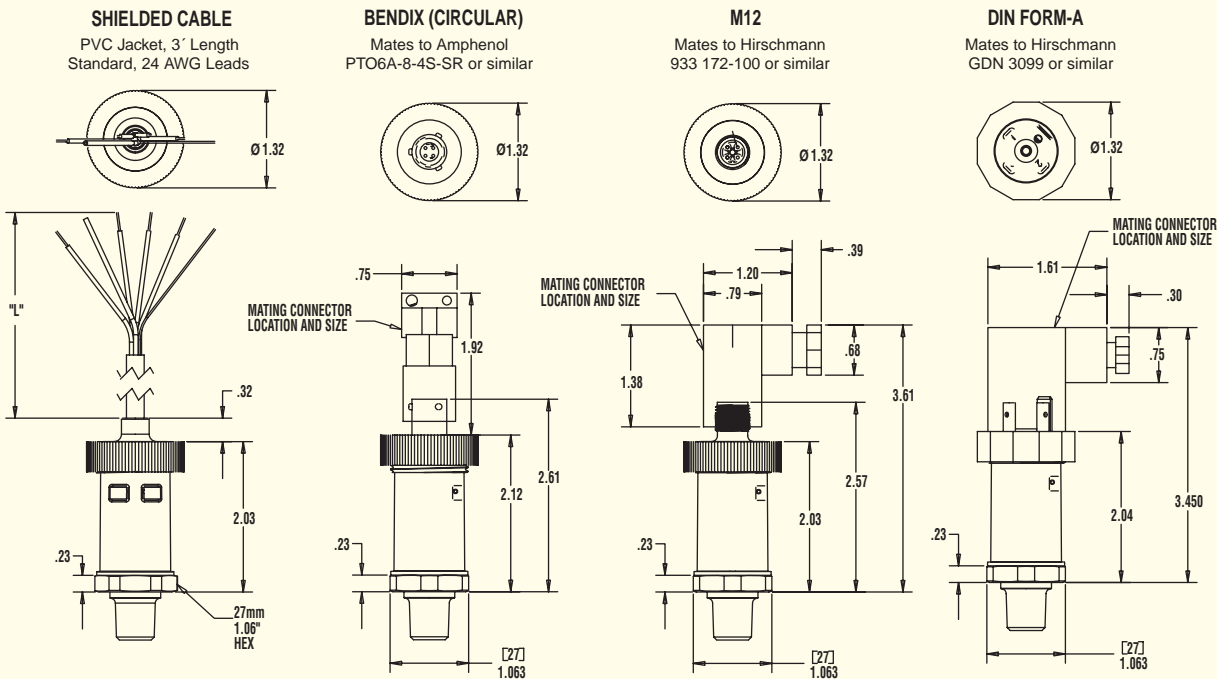
Available Electrical Terminations:

- Pigtail: 3 feet of shielded cable, PVC jacket, 24 AWG leads
- DIN 43 650-A
- Bendix style 4 pin, PTO 2A-8-4P or similar
- M12 x 1, 4 pin, Circular style

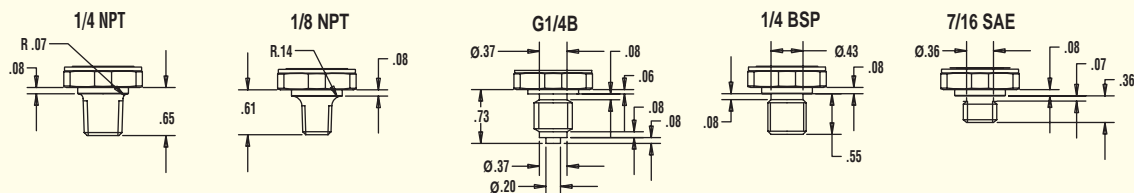
OPTIONAL FEATURES

- Consult factory for available options

ELECTRICAL TERMINATIONS



PROCESS CONNECTIONS



HOW TO ORDER THE TYPE T2 PRESSURE TRANSDUCERS

| | | | | | | |
|---|--|---|--|---|--|--|
| <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">T 2</div> Type Configuration (T2) Accuracy ±0.25% Static Accuracy Class (BFSL) ±1.00% Total Error Band -20°C to +85°C ±1.50% Total Error Band -40°C to -20°C, 85°C to 125°C | <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">7</div> Pressure Connection M01 1/8 NPT-male M02 1/4 NPT-male MEK 1/16-20 SAE-male MS2 1/4-19 BSP male MG2 1/2 B male Consult Factory Other Connections | <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;"> </div> Output Signal 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 | <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;"> </div> Electrical Connection DIN 43 650-A - Mates to Hirschmann GDM 3099 or similar DN = no mating conn. D0 = w/mating conn., no cable D2 = w/mating conn. 3' shielded cable D1 = w/mating conn. w/customer defined cable length 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 E1 = w/mating conn. w/customer defined cable length Circular 4 Pin - Mates to Amphenol Bendix PTO6A-8-4S-SR or similar B4 = no mating conn. H1 = w/mating conn., no cable L1 = w/mating conn. 3' shielded cable P2 = w/mating conn. w/customer defined cable length Pigtail - Shielded cable with PVC Jacket and 24 AWG leads F2 = w/3' cable length P1 = w/customer defined cable length | <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;"> </div> Pressure Ranges psi Ranges 30# = 30 psi 45# = 45 psi 60# = 60 psi 100# = 100 psi 150# = 150 psi 200# = 200 psi 300# = 300 psi 500# = 500 psi 750# = 750 psi 1000# = 1000 psi 1500# = 1500 psi 2000# = 2000 psi 3000# = 3000 psi 5000# = 5000 psi 7500# = 7500 psi 10000# = 10000 psi 20000# = 20000 psi Ranges in bar, kPa and MPa are also available | <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;"> </div> Pressure Type G = Gauge pressure, vented housing For sealed housing (PSIS) consult factory | <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;"> </div> Optional X-Variations Consult factory for available options |
| Compound Ranges 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 | | | | | | |



Instruments

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