

Stellar Technology

## Series PT17XX

Pressure and Temperature Transducers



### Description

Stellar Technology's Series PT17XX transducers combine both a pressure sensor and temperature sensor in one unique package. The Series PT17XX is designed with proprietary electronics which provides a variety of both analog and digital high level outputs. The PT17XX is constructed of all welded stainless steel and incorporates reliable bonded foil strain gage technology and durable RTD elements. All units are manufactured with shock and vibration protection.

In addition to a wide variety of electrical outputs, the PT17XX pressure/temperature sensors offer many customer specific variations of process connections and electrical terminations. Temperature probe dimensions come with standard lengths as well as customer specified dimensions. A 4-20 mA, 2-wire output version of the Series PT17XX is available where intrinsically safe requirements are specified. Isolated voltage output is a standard feature of the voltage output units. The Model PT1714 is the CANbus version of the Series PT17XX. The Series PT17XX pressure/temperature transducers provide low sensitivity to shock and vibration.

When dual measurements are required, these dual output pressure/temperature transducers provide customers with significant cost reductions. Some of the favorable cost reduction factors include no thermowells, reduced process connections, reduced sensor inventory, and reduced wiring.

### Standard Features

- Stainless Steel Construction
- NIST Traceable Calibration
- Hermetically Sealed
- Probe Lengths from 1" to 4"
- Two Independent Circuits
- Ranges to 20000 PSI
- Low sensitivity to shock and vibration

### Optional Features

- Remote Operation
- Probe Length Greater Than 4"
- Digital Outputs
- Special Ranges
- Low Current Draw Electronics
- Temperature probe from -320°F to +750°F
- Additional Shock and Vibration Protection

PT17XX

# Series PT17XX Specifications

Baseline Configuration Specs Represented.  
Modifications Encouraged - See Below  
Custom Designs Available

## Performance

### PRESSURE

#### Static Accuracy

± 0.25% FSO by BFSL.

#### Thermal Zero Shift

< ± 0.010% FSO/°F.

#### Thermal Span Shift

< ± 0.005% FSO/°F.

#### Zero Balance

±1% FSO at 70°F.

#### Span

± 1% FSO at 70°F.

#### Resolution

Analog: Infinite.

Digital: .025% FSO.

### TEMPERATURE

#### Thermal Accuracy

± 1.2°F or 1% whichever is greater.

± 0.5°F. or 0.5% whichever is greater, optional.

#### Step Response

Thin wall probe: 1 sec. in liquid (63%).

Standard probe: 3 sec. in liquid (63%).

## Mechanical Characteristics

### Standard Ranges

0-5, 10, 25, 30, 45, 50, 75, 100, 150, 200, 250, 300, 500, 750, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 5000, 6000, 10000, 15000, 20000 PSIA / PSIG.

### Proof Pressure

1.5 X FSO pressure.

### Burst Pressure

> 2 X FSO pressure.

### Operating Media

Fluids and gases compatible with stainless steel. Inconel and other materials optional.

### Pressure Fitting

(For ranges 5 psi thru 10,000 psi)

7/16"-20 per AS4395E4 (Standard).

1/4" NPT Male: (No charge Option).

1/4" NPT Female: (No charge Option).

LM9, LM12, LM16 male with probe: (Option).

(For ranges 15,000 psi to 20,000 psi).

LM9, LM12, LM16:

male with probe (Standard).

AE F250-C, 9/16-18 UNF or equivalent:

no probe (Option)

For additional fittings please consult factory.

### Enclosure

Body and pressure cavity of stainless steel, hermetically sealed.

## Mechanical Characteristics (cont)

### RTD Probe

Specify probe length desired:

Dimension "L" (see drawing).

### Weight

Approx. 8 oz.

## Electrical Characteristics

### ANALOG OUTPUTS

#### Excitation

4-20mA Current Loop:

9-36 Vdc for 2-wire.

9-36 Vdc for 3-wire.

Isolated Voltage Output (0-5 Vdc, 0-10 Vdc):

14-32 Vdc (standard).

8-18 Vdc (No charge option).

Non-Isolated Voltage Output:

8-40 Vdc for 1-5 Vdc, 3-wire (standard).

8-40 Vdc for 1-6 Vdc, 3-wire (No charge option).

8-40 Vdc for 0-5 Vdc, 4-wire (No charge option).

Additional outputs and related excitations available.

### DIGITAL OUTPUTS

#### Excitation

RS-232, RS-485

8-30 Vdc.

CANbus

4-18 Vdc (standard).

14-32 Vdc (optional).

### Programming

PC.

## DUAL OUTPUTS (Analog & Digital)

### Excitation

Isolated Voltage plus Digital:

14-32 Vdc.

Non-Isolated Voltage plus Digital:

8-30 Vdc.

### COMMON

#### Insulation Resistance

> 100 megohms at 50 Vdc at 70°F.

#### Electrical Termination

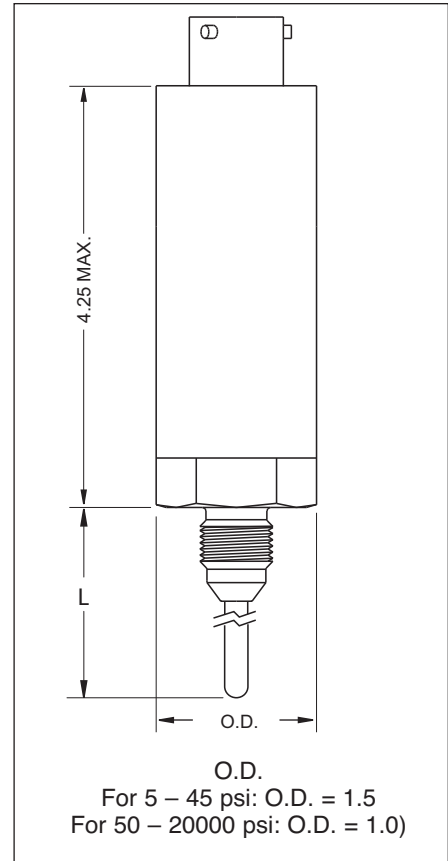
PTIH-10-6P stainless steel connector or equivalent.

Optional electrical terminations available.

### Electrical Protection

- EMI Protected. (Optional for Isolated Voltage).
- Surge Protection to 500 Vdc. (Optional for Isolated Voltage).
- Reverse polarity protected.
- Short circuit protected.

## Dimensions (inches)



## MODEL IDENTIFICATION

P	T	1	7	X	X
SERIES					DIGITAL OUTPUT
ANALOG OUTPUT					0 = None
0 = Volts					1 = RS-485
5 = 4-20mA - 2-wire Loop (not available with digital output)					2 = RS-232
6 = 4-20mA - 3-wire					4 = CANbus
1 = None					

## Environmental Characteristics

### Operating Temperature Range

-65°F to +250°F (Process Temperature @ sensor).

-40°F to +185°F (Ambient Temperature).

### Pressure

Compensated temperature range:

-30°F to +170°F.

### Temperature Probe

-65°F to +300°F (standard).



## Modifications and Warranty

MODIFICATIONS: We realize transducer applications vary greatly and as such our designs are flexible. Choice of pressure port, electrical termination, material compatibility and performance characteristics are a few of the many options available. Specifications on this datasheet represent the standard configuration only. Product and company names listed are trademarks of their respective companies. Specifications subject to change without notice.

WARRANTY: Stellar Technology warrants that its product shall be free from defective workmanship and/or material for a twelve month period from the date of shipment, provided that Stellar Technology's obligation hereunder shall be limited to correcting any defective material FOB our factory. No allowance will be made for any expenses incurred for correcting any defective workmanship and/or material without written consent by Stellar Technology. This warranty is in lieu of all other warranties expressed or implied.