



# Series RST0170

Pressure and Temperature Transducers

RST0170



## Description

The Series RST0170 is a small, accurate, combination pressure-temperature transducer for measuring dynamic and static pressure-temperatures. Available in absolute, sealed gage, or true gage zero pressure reference and either an RTD or thermocouple for temperature measurement, the unit is entirely welded of stainless steel. Features of design include long term stability, low sensitivity to shock and vibration, wide compensated temperature range, excellent response to transient pressures and infinite resolution.

## Standard Features

- Ranges to 15000 PSI
- Stainless Steel Construction
- Probes from 9.5mm to 101.6mm
- Requires no thermowell
- Operates with fluids or gases
- NIST traceable

## Optional Features

- Probes from 101.6mm to 610mm
- Alternative pressure ports
- Remote electronics for higher temperature applications
- Alternative electrical terminations
- Alternative materials of construction
- Temperature probe from -195°C to +398°C

# Series RST0170 Specifications

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

## Performance

### PRESSURE

#### Static Accuracy

$\pm 0.25\%$  FSO by BFSL.

#### Thermal Zero Shift

$< \pm 0.018\%$  FSO/ $^{\circ}\text{C}$ .

#### Thermal Span Shift

$< \pm 0.009\%$  FSO/ $^{\circ}\text{C}$ .

#### Zero Balance

$\pm 1\%$  FSO at  $20^{\circ}\text{C}$ .

#### Full Scale Output

$3.0 \pm 0.015$  mV/V FSO at  $20^{\circ}\text{C}$ .

#### Natural Frequency

3.5 kHz at 200 PSI to 50.0 kHz at 6000 PSI.

#### Acceleration Response

Less than  $\pm 0.005\%$  FS/G.

### TEMPERATURE

#### Thermal Accuracy

$\pm 0.7^{\circ}\text{C}$  or 1% whichever is greater  
 $\pm 0.3^{\circ}\text{C}$ . or .5%  
(optional for  $-17^{\circ}\text{C}$  to  $+71^{\circ}\text{C}$ )

#### Step Response

Thin wall probe: 1 sec. in liquid (63%).  
Standard probe: 3 sec. in liquid (63%).

## Electrical Characteristics

### Excitation

10 Vdc recommended, 15 Vdc max.

### Input / Output Resistance

$350 \pm 3.5$  ohms at  $20^{\circ}\text{C}$ .

### Insulation Resistance

$> 10\text{K}$  megohms at 50 Vdc at  $20^{\circ}\text{C}$ .

### Electrical Termination

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

Optional electrical terminations available.

## Environmental Characteristics

### Compensated Temperature Range

$-50^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ .

### Operating Temperature Range

$-50^{\circ}\text{C}$  to  $+148^{\circ}\text{C}$ .  
( $-195^{\circ}\text{C}$  to  $+232^{\circ}\text{C}$  optional)

### Enclosure

Body and pressure cavity of stainless steel, hermetically sealed.

## 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 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)

1/4" NPT Male (Standard).

1/4" NPT Female (No charge option).

LM9, LM12, LM16 (No probe - RTD adjacent to pressure diaphragm).

(For ranges 15,000 psi)

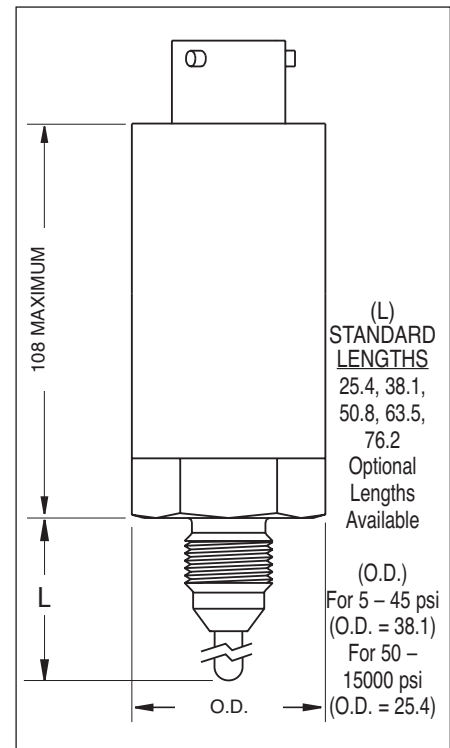
AE F250-C, 9/16"-18 UNF, or equivalent  
(Standard).

For additional pressure fittings please  
consult factory.

### Enclosure

Body and pressure cavity of stainless steel, hermetically sealed.

## Dimensions (mm)



CE  
0539

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: RDP 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 RDP'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 RDP. This warranty is in lieu of all other warranties expressed or implied.

Due to the nature of technology, changes are inevitable. For latest technical specifications, see our website.

RDP Electronics Ltd. • Grove Street, Heath Town • Wolverhampton WV10 0PY

Tel: 01902 457512 • Fax: 01902 452000

E-mail: sales@rdpe.com • Website: www.rdpe.com

Copyright © 2010 RDP Electronics Ltd. • All Rights Reserved  
Datasheet P/N: 236796B

**RDP**  
GROUP