

# Series DT14XX

Differential Pressure Transducers and Transmitters



## Description

The Series DT14XX pressure transducers and pressure transmitters are reliable, rugged, wet-wet differential pressure sensors with a high line pressure capability. The Series DT14XX differential pressure transducers are ideal for measuring static differential pressures. The primary design feature is a high differential overload pressure capability. In addition, the DT14XX differential pressure transmitters are designed with internal signal conditioning. Customers can select 4-20 mA current outputs, numerous voltage outputs, as well as digital outputs including RS232, RS485, and CANbus. Other key design features include removable pressure ports for inspection and cleaning, long term stability, bidirectional and unidirectional outputs, low sensitivity to shock and vibration, and built in over pressure protection. Each DT14XX is constructed of stainless steel. Each unit is shipped with a 19 point calibration record traceable to NIST as standard.

## Standard Features

- Low Differential Pressure Range
- High Line Pressure Overload Protection
- Removable/Cleanable Pressure Ports
- Unidirectional and Bidirectional Operation
- Amplified Output (Analog and Digital)
- Zero and Span Pots
- All Stainless Steel Construction
- 19 Point Calibration Record Traceable to NIST

## Optional Features

- Higher Base Line Pressures To 5,000 PSI (Some ranges to 8,500 psi)
- Submersible Versions
- Customer Specified Electrical Termination
- Customer Specified Pressure Ports
- Alternative Materials
- Special Calibrations

**DT14XX**

# Series DT14XX Specifications

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

## Performance

### Static Accuracy

Linearity:  $\pm 0.25\%$  FSO.  
Hysteresis:  $\pm 0.25\%$  FSO.  
Repeatability:  $\pm 0.20\%$  FSO.

### Thermal Zero Shift

$< \pm 0.010\%$  FSO/ $^{\circ}$ F.

### Thermal Span Shift

$< \pm 0.020\%$  FSO/ $^{\circ}$ F.

### Insulation Resistance

$> 100$  megohms at 50 Vdc at 70 $^{\circ}$ F.

### Zero Balance

$\pm 1\%$  FSO at 70 $^{\circ}$ F. Zero Adjustment:  $\pm 5\%$  FSO.

### Span

$\pm 1\%$  FSO at 70 $^{\circ}$ F. Span Adjustment:  $\pm 5\%$  FSO.

### Resolution

Analog: Infinite. Digital: .025% FSO.

### Frequency Response

Consult Factory.

## Mechanical Characteristics

### Standard Ranges

0-1, 2, 5, 10, 15, 20, 25, 30, 50, 75, 100, 150, 200, 250, 300, 400, 500 PSID  
Bidirectional or Unidirectional.

### Differential Overload Pressure

1000 PSI may be applied to either port without causing a zero shift greater than 1% FSO.

### Line Pressure

1000 PSI (5000 PSI optional). Zero shift with line pressure is less than 1% FSO per 1000 PSI of line pressure. (2% FSO for 1 & 2 PSID).

### Operating Media

Liquids and gases compatible with 316 stainless steel, and BUNA-N (std.). Fill fluid is Krytox oil. Optional Hastelloy wetted parts and optional O-ring material available.

### Pressure Fitting

7/16"-20 per AS5202E4 / MS33649-4 (Female) - (Standard).

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

7/16"-20 per AS4395E4 / MS33656-4 (Male) - (Optional).

1/4" NPT Male (Optional).

For additional pressure fittings please consult factory.

### Enclosure

Body and pressure cavity of stainless steel, environmentally sealed.

### Weight

Approximately 4.5 lbs.

## 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

3-wire Current plus Digital:  
12-32 Vdc.  
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 $^{\circ}$ 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.

## Environmental Characteristics

### Compensated Temperature Range

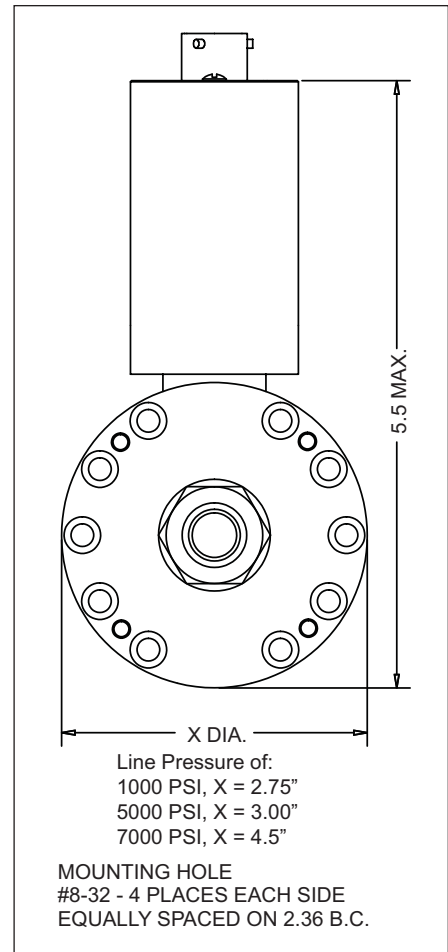
-10 $^{\circ}$ F to +160 $^{\circ}$ F.

Options available.

### Operating Temperature Range

-40 $^{\circ}$ F to +185 $^{\circ}$ F.

## Dimensions (inches)



## MODEL IDENTIFICATION

D	T	1	4	X	X
SERIES					
		ANALOG OUTPUT		DIGITAL OUTPUT	
		0 = Isolated Voltage		0 = None	
		1 = None		1 = RS-485	
		2 = Non-Isolated Voltage		2 = RS-232	
		5 = 4-20 mA 2-wire Loop (not available with Digital Output)		4 = CANbus	
		6 = 4-20 mA 3-wire			

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: 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.

Find More Information at:  
[stellartech.com](http://stellartech.com)

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

237 Commerce Drive • Amherst, NY 14228 • USA

Tel: 716.250.1900 • Fax: 716.250.1909

Email: info@stellartech.com

Copyright © 2004 Stellar Technology Incorporated • All Rights Reserved  
Datasheet P/N: 227282D

ISO 9001:2000  
**STI**  
STELLAR TECHNOLOGY  
INCORPORATED