

# Series ST15XX

Aerospace Pressure Transducers and Pressure Transmitters



## Description

The Series ST15XX pressure transducers and pressure transmitters are designed to meet the rigorous requirements of the aerospace industry. These pressure sensors incorporate 316 stainless steel wetted parts to meet the hydrogen compatibility requirements needed for many aerospace sensor applications. The ST15XX pressure transducer combines compact size, rugged construction, unique isolation diaphragm design and high level outputs to give highly accurate dynamic and static pressure measurements. Customers can select 4-20 mA current outputs, numerous voltage outputs, as well as digital outputs including RS232, RS485, and CANbus. Additional design features include a wide compensated temperature range, all welded stainless steel construction, long term stability, low sensitivity to shock and vibration, and built-in over-pressure protection for ranges up to 2000 psi. Series ST15XX pressure transducers are available in absolute, gage, and sealed pressure references. Each unit is shipped with a 19 point calibration record traceable to NIST as standard.

## Standard Features

- 316 SS Wetted Material (Hydrogen compatible)
- Lightweight/Compact size (1 in. O.D.)
- Amplified Output (Analog or Digital)
- Low Thermal Error
- Wide Compensated Temperature Range
- Built-in Over Pressure Protection
- All Stainless Steel Construction
- Shock and Vibration Resistant
- 19 Point Calibration Record Traceable to NIST

## Optional Features

- Customer Specified Electrical Connections
- Special Calibrations

**ST15XX**

# Series ST15XX Specifications

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

## Performance

### Static Accuracy

Linearity:  $\pm 0.20\%$  FSO.  
Hysteresis:  $\pm 0.20\%$  FSO.  
Repeatability:  $\pm 0.10\%$  FSO.

For improved accuracies, consult factory

### Resolution

Analog: Infinite.  
Digital:  $.025\%$  FSO.

### Thermal Zero Shift

$< \pm 0.005\%$  FSO/ $^{\circ}$ F.

### Thermal Span Shift

$< \pm 0.005\%$  FSO/ $^{\circ}$ F.

### Zero Balance

$\pm 1.0\%$  FSO at  $70^{\circ}$ F.

### Span

$\pm 1.0\%$  FSO at  $70^{\circ}$ F.

## Mechanical Characteristics

### Standard Ranges

0-5, 0-10, 0-15, 25, 30, 50, 75, 100, 200,  
500, 750, 1000, 1500, 2000 PSIA / PSIS.

### Proof Pressure

5 to 200 PSI range: 500 PSI  
500 to 2000 PSI range: 1.5 X range.

### Burst Pressure

3.0 X range or 1500 PSI  
whichever is greater.

### Operating Media

Fluids and gases compatible with 316  
stainless steel.

### Enclosure

Body of stainless steel.

### Pressure Fitting

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

7/16"-20 per AS5202E4 / MS33649-4  
(Female) - (No charge option).

For additional pressure fittings please  
consult factory.

### Natural Frequency of Sensing Diaphragm

1.0 kHz at 5 psi.  
to 10 kHz at 2000 psi.

### Acceleration Response

Less than  $\pm 0.15\%$  FS/G at 5 psi to  
 $\pm 0.0015\%$  FS/G at 2000 psi.

### Weight

Approximately 5.0 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

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

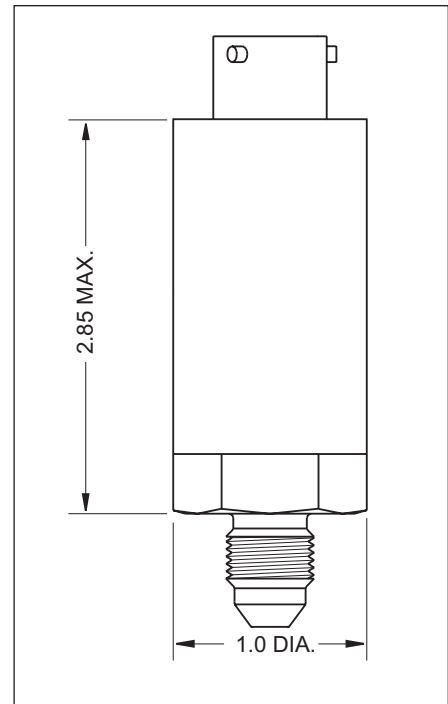
MIL-C-26482 Class  
No. 3143H-10-6P.

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

<b>S</b>	<b>T</b>	<b>1</b>	<b>5</b>	<b>X</b>	<b>X</b>
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			

## Environmental Characteristics

### Compensated Temperature Range

$-65^{\circ}$ F to  $+250^{\circ}$ F.

### Operating Temperature Range

$-65^{\circ}$ F to  $+250^{\circ}$ F.

(Note: Maximum Temperature for digital output is  $+185^{\circ}$ F)



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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.

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