

# Series ST35XX

Aerospace Pressure Transducers and Pressure Transmitters



## Description

The Series ST35XX pressure transducers and pressure transmitters are designed to meet the rigorous requirements of the aerospace industry. These pressure sensors combine compact size, rugged construction, high level outputs, and a special high pressure sensing diaphragm to give highly accurate dynamic and static pressure measurements from 3,000 psi to 40,000 psi. 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, and low sensitivity to shock and vibration. Series ST35XX aerospace 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

- Lightweight/Compact size (1 in. O.D.)
- Amplified Output (Analog or Digital)
- Pressure Ranges to 40,000 psi
- Low Thermal Error
- Wide Compensated Temperature Range
- All Stainless Steel Construction
- Shock and Vibration Resistant
- 19 Point Calibration Record Traceable to NIST

## Optional Features

- Customer Specified Electrical Connections
- Special Calibrations

**ST35XX**

# Series ST35XX 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.

### Resolution

Analog: Infinite.  
Digital: .025% FSO.

### Thermal Zero Shift

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

### Thermal Span Shift

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

### Zero Balance

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

### Span

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

## Mechanical Characteristics

### Standard Ranges

50, 75, 100, 200, 500, 750,  
1000, 1500, 2000, 3000, 5000,  
7500, 10000, 15000, 20000, 25000,  
30000, 40000 PSIA / PSIG / PSIS.

### Proof Pressure

1.5 X range.

### Burst Pressure

2.0 X range.

### Operating Media

Fluids and gases compatible with 17-4  
stainless steel.

(Inconel and other materials optional.)

### 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 ranges 15,000 psi thru 40,000 psi)

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

For additional pressure fittings please  
consult factory.

### Natural Frequency

#### of Sensing Diaphragm

2 kHz at 50 psi  
to 347 kHz at 40,000 psi.

### Acceleration Response

Less than  $\pm 0.15\%$  FS/G at 50 psi to  
 $\pm 0.0015\%$  FS/G at 40,000 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

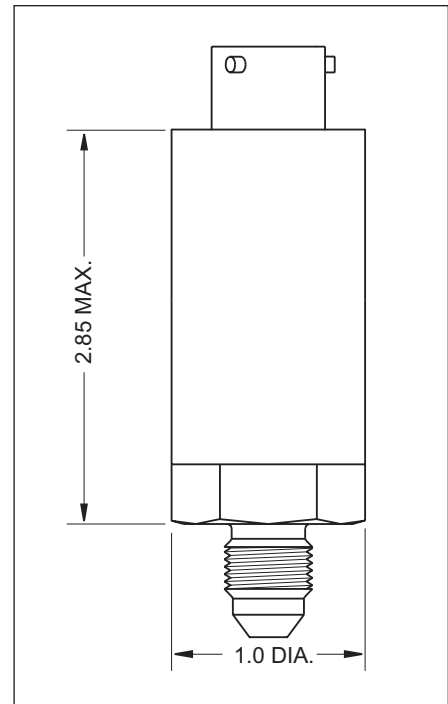
MIL-C-26482 Class  
No. 3143H-10-6P.

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

S	T	3	5	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			

## 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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