

ST15XX Series

Aerospace Pressure Transducers and Transmitters

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Description

ST15XX Series pressure transducers and 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. ST15XX Series pressure transducers combine 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 overpressure protection for ranges up to 1000 psi. ST15XX Series 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 Overpressure Protection
- All Stainless Steel Construction
- Shock and Vibration Resistant
- 19 Point Calibration Record Traceable to NIST



Optional Features

- Customer Specified Electrical Connections
- Special Calibrations
- Additional Shock and Vibration Protection

LORD DATA SHEET

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: 0.025% 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

0-5, 0-10, 0-15, 25, 30, 50, 75, 100, 200, 500, 750, 1000 psia / psis

Consult factory for additional ranges.

Proof Pressure

5 to 200 psi range: 500 psi

500 to 1000 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

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

Acceleration Response

Less than $\pm 0.15\%$ FS/G at 5 psi

Enclosure

Body of stainless steel

Weight

Approximately 5.0 oz.

ELECTRICAL CHARACTERISTICS

ANALOG OUTPUTS

Excitation

4-20mA Current Loop: 9-36 Vdc

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

25-35 Vdc (standard)

14-32 Vdc (185 $^{\circ}$ F Max Ambient)
(No charge option)

8-18 Vdc (185 $^{\circ}$ F Max Ambient)
(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

Non-Isolated Voltage plus Digital: 8-30 Vdc

COMMON

Insulation Resistance

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

Electrical Termination

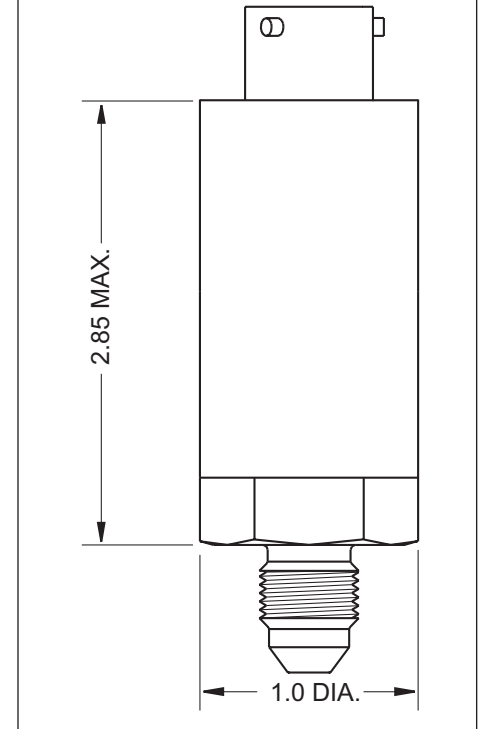
MIL-C-26482 Class No. 3113H-10-6P

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	1	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 (Process Temperature @ sensor)

-40 $^{\circ}$ F to +185 $^{\circ}$ F (Ambient Temperature)

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

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

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