

ST35XX Series

Aerospace Pressure Transducers and Transmitters

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Description

ST35XX Series pressure transducers and 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 3000 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. ST35XX Series 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
- 5000 psi Secondary Containment

Optional Features

- Customer Specified Electrical Connections
- Special Calibrations
- Additional Shock and Vibration Protection
- 9500 psi Secondary Containment (on Most Ranges)

LORD DATA SHEET

PERFORMANCE

Static Accuracy

Linearity: $\pm 0.20\%$ FSO

Hysteresis: $\pm 0.20\%$ FSO

Repeatability: $\pm 0.10\%$ FSO

Resolution

Analog: Infinite

Digital: 0.025% 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

Natural Frequency

2 kHz at 50 psi to 347 kHz at 40000 psi

Acceleration Response

Less than $\pm 0.15\%$ FSO/G at 50 psi to

$\pm 0.0015\%$ FSO/G at 40000 psi

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)

Pressure Fitting

7/16"-20 per AS4395E4 / MS33656-4
(Male) – (standard)

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

For ranges 15000 psi thru 40000 psi

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

For additional pressure fittings, please consult factory.

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

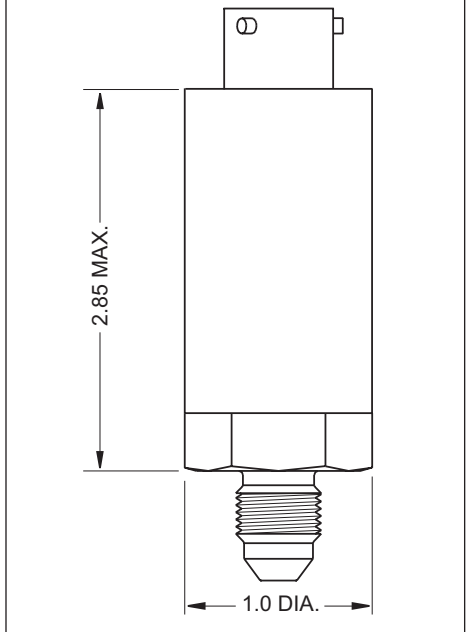
MIL-C-26482 Class No. 3113H-10-6P

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	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 (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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LORD Corporation

World Headquarters

111 Lord Drive

Cary, NC 27511-7923

USA

Customer Support Center (in United States & Canada)

+1 877 ASK LORD (275 5673)

www.lord.com

For a listing of our worldwide locations, visit LORD.com.

LORD Sensing Stellar Technology

237 Commerce Drive

Amherst, NY 14228 • USA

Tel: 716.250.1900 • Fax: 716.250.1909

www.stellartech.com

Email: stellar_sales@lord.com

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