

# Series GT10XX

Aerospace Pressure Transducers



## Description

The Series GT10XX pressure transducer is a reliable and rugged pressure sensor with high level analog and/or digital outputs. Customers can select 4-20 mA current outputs, numerous voltage outputs, as well as digital outputs including RS232, RS485, and CANbus. These pressure transducers are ideal for applications involving dynamic and static pressures measurements requiring high frequency response such as rocket engine testing and jet engine testing. The major mechanical design feature is a fully cleanable pressure cavity with replaceable stainless steel diaphragms. The Series GT10XX is designed with a unique sensing element which is isolated from the diaphragm thus providing improved thermal stability during the initial phases of testing. Other design features include long term stability, low sensitivity to both mechanical shock and vibration and thermal shock, excellent response to transient pressures, infinite resolution and built in over pressure protection. Each GT10XX pressure transducer is shipped with a 19 point calibration record traceable to NIST as standard.

## Standard Features

- High Level Output (Analog & Digital)
- Fully Cleanable Pressure Cavity
- Replaceable Stainless Steel Diaphragms
- Thermal Stability
- 316 SS Wetted Material Thru 2000 PSI
- Built In Over Pressure Protection
- High-Level Outputs – Analog and Digital
- Low Sensitivity to Shock and Vibration
- Pressure Ranges to 20,000 psig
- All Stainless Steel Construction
- 19 Point Calibration Record Traceable to NIST

## Optional Features

- Improved Thermal Coefficients
- Customer Specified Pressure Ports
- Customer Specified Electrical Connections
- Extended Temperature Compensation Ranges
- Alternate Materials for Media Compatibility
- Special Calibrations

**Your Application-Solution Source<sup>SM</sup>**

**GT10XX**

# Series GT10XX 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:  $\pm 0.10\%$  FSO.

### Resolution

Analog: Infinite.  
Digital: .025% FSO.

### Thermal Zero Shift

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

### Thermal Sensor Shift

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

### Zero Balance

$\pm 1\%$  FSO at 70 $^{\circ}$ F.

### Span

$\pm 1\%$  FSO at 70 $^{\circ}$ F.

### Natural Frequency

200 Hz at 1 PSI to  
150 kHz at 20,000 PSI.

### Acceleration Response

Less than  $\pm 0.30\%$  FS/G at 1 PSI to  
 $\pm 0.0015\%$  FS/G at 20,000 PSI.

## Mechanical Characteristics

### Standard Ranges

0 - 1, 2, 5, 10, 15, 20, 25 PSIA  
30, 50, 75, 100, 200, 300, 500, 750, 1000,  
1500, 2000, 3000, 3500, 4000, 5000,  
7500, 10000, 15000, 20000 PSIA or PSIG  
sealed.

### Proof Pressure

1 - 10 PSI ranges: 300 PSI.  
15 - 100 PSI ranges: 500 PSI.  
200 - 2K PSI ranges: 3.0 X range.  
3K PSI range & up: 1.5 X range.

### Operating Media

Fluids and gases compatible with 316  
stainless steel for ranges thru 2000 PSI  
and 17-4 PH stainless steel for ranges  
3000 PSI thru 20000 PSI.

### Pressure Fitting

(For ranges up to & including 10,000 psi)  
7/16"-20 per AS5202E4 / MS33649-4  
(Female).

(For ranges 15K psi and 20K psi)

AE F250-C, 9/16"-18 UNF (Female).

Note: Pressure cap is removable.

### 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, CANbus.  
8-30 Vdc.

#### 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

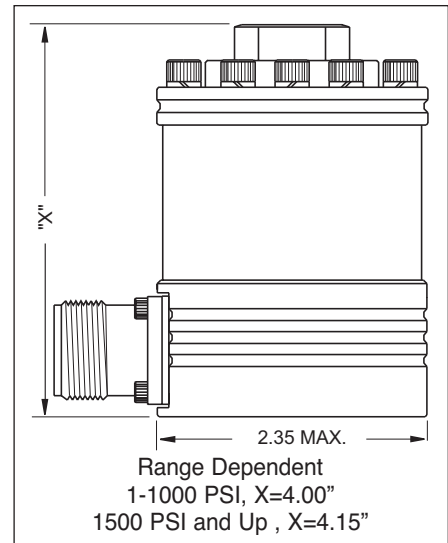
MS3102-14S-2P stainless steel connector  
or equivalent.

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.

## Dimensions (inches)



## MODEL IDENTIFICATION

G	T	1	0	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

-30 $^{\circ}$ F to +170 $^{\circ}$ F.  
(-65 $^{\circ}$ F to +250 $^{\circ}$ F).

### Operating Temperature Range

-65 $^{\circ}$ F to +250 $^{\circ}$ F.  
(Note: Maximum Operating Temperature  
for digital output is +185 $^{\circ}$ F)



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](mailto:info@stellartech.com)

ISO 9001:2000

