

Model 3200

Heavy Duty OEM Industrial Pressure Transducer

The Model 3200 sputtered thin film pressure sensor is designed for OEMs who require top of the line performance, reliability, stability and maximum durability at an affordable price. The Model 3200 is ideal for the most heavy duty industrial applications by providing the maximum performance to durability ratio available. The Model 3200 offers exceptional $\pm 0.5\%$ FS accuracy in pressure ranges from 75 PSI to 32,000 PSI; features an all welded stainless steel construction for a robust design, and IP67 seal for moisture and humidity protection. The Model 3200 offers a variety of different outputs, pressure connectors and electrical connectors, to satisfy the most challenging application requirements.

Built to Last

The Model 3200 is a heavy duty pressure device with long term stability, product reliability and accuracy built in. The compact welded stainless steel design is constructed to protect the sensor in the most demanding of industrial environments. The Model 3200 provides a 3x overpressure (0 to 10k PSI) and a 2.5x overpressure (10k to 14.5 PSI) rating, ensuring that the sensor does not fail during unexpected pressure spikes. The electrical connectors are tested to an environmental protection specification of IP67, and a robust internal design ensures that the transducers can survive high levels of vibration.

Best in Class Price-to-Performance

Strain Gauge technology provides a very linear and predictable output signal over a wide temperature range, which enables Setra to provide an inherently stable and accurate sensor element in high volumes and at low cost. To ensure best in class accuracy and long term stability, each sensing element is thermally compensated to an accuracy of less than $0.005\%^\circ\text{C}$ prior to leaving the clean room for final assembly. Thermally compensating the unit ensures improved accuracy and simplified conditioning electronics, while eliminating the need for calibration over elevated temperatures as a transducer.

Unrivaled Quality

Setra understands the importance of quality in OEM applications, which is why we are always looking for ways to improve the quality rating of our products. Over the last two years, the Model 3200 failure rate is less than 0.1%, a quality rating unmatched by the competition. The worst thing that could happen to an engineer is to shut down their work because of quality issues, Setra takes this seriously which is why we have worked hard to ensure that product quality issues will never be a concern for our customers.



- **>2.5x FS Proof Pressure**
- **High Quality: <0.1% Failure Rate**
- **Long Term Stability (<0.1%FS/YR)**

Model 3200 Features:

- No Oil Fill - Prevents Thermal Instability & Leakage
- Wide Choice of Pressure Ranges: 75 PSI-32,000 PSI
- $\pm 0.5\%$ FS Accuracy
- Dual Temperature and Pressure Output
- Small Footprint - Less than 1" Diameter
- Choice of Current, Voltage or Ratiometric Outputs
- Reverse Wiring Protection
- Accuracy Specified Over Full Temperature Range
- All Welded Stainless Steel Construction
- CE & UL Approved, RoHS Compliant
- IP67 Rated
- 40x FS Burst Pressure*

*Range Dependent

Applications:

- Power Generation
- Hydraulic Systems
- Booster Pump Systems
- Irrigation Systems
- Off Highway Vehicles

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GENERAL SPECIFICATIONS

PRESSURE CAPABILITY

Pressure Range PSI (BAR)	Proof Pressure (x Full Scale)	Burst Pressure (x Full Scale)
50-300 (3.5-25)	3.00 x FS	40 x FS
500-1,500 (35-100)		20 x FS
2,000-6,000 (160-400)		10 x FS
7,500-9,000 (600)		
10,000 (700)	2.50 x FS	>60,000 PSI (4,000 Bar)
15,000 (1,000)		
25,000 (1,600)		

The data in this table is "times rate ranges" (xRR)

Application pressure should be restricted to the rated-range of the transducer. The maximum overpressure is the pressure limit at which the transducer will not show significant offset shift. The minimum burst pressure is the test-rating for fluid containment.

Performance Data		Physical Description	
Accuracy ¹	±0.5% FS	Pressure Port	See Ordering Instructions
Thermal Effects ²		Enclosure	IP67 (IP65 for Electrical Code A)
Compensated Range °F(°C)	-40 to +221 (-40 to +125)	Elec. Connections	See Ordering Instructions
Zero/Span Shift %FS/100°F (%FS/100°C)	0.94 (2.0) for <1000 PSI (60 BAR)	Wetted Parts	17-4PH SS (Diaphragm), 304 SS Fittings
Zero/Span Tolerance	1% FS for <1000 PSI (60 BAR)	Vibration	40G Peak to Peak Sinusoidal to 2000Hz (Random Vibration: 20 to 1000Hz @ approx. 40G Peak per MIL-STD-810E)
Response Time	1ms	Shock	Withstand free fall to IEC 68-2-32 procedure 1
Long Term Stability	±0.2% FS for <1000 PSI (60 BAR)	Weight	35 Grams
Proof/Burst Pressure	See Table	Electrical Data (Voltage)⁶	
Fatigue Life	Designed for more than 100M cycles	Circuit	3-Wire (Exc, Out, Com)
Temp. Output Range °F(°C) ^{3,4,5}	-40 to +221 (-40 to +125)	Output	1 to 6 VDC, 1 to 5 VDC, 0.5 to 4.5 VDC, 0 to 5 VDC, 0 to 10 VDC ⁷
Operating/Storage Temp °F(°C) ^{3,4,5}	-40 to +221 (-40 to +125)	Excitation	2 Volts above FS to max 30 Volts @ 4.5 mA (6.5mA Dual Output Version)
Electrical Data (Ratiometric)		Source & Sinks	2mA
Output	0.5 to 4.5 VDC @ 4mA (6.5 mA on Dual Output Version)	Electrical Data (Current)	
Excitation	5VDC ± 10%	Circuit	2-Wire
Options		Output	4 to 20mA
Full miswire protection between all signal and power lines (any combination)		Excitation	8 to 30 VDC (24 VDC max. above 110° applications)
Full short-circuit protection for Vout1 to 0V or Vout1 connected to supply, indefinitely. Ratiometric output not available		Max. Loop Resistance	(Supply Voltage-8) x50 ohms
Supply Voltage must be 4V above the maximum Vout1 output. This also accounts for worse-case customer output leads.			

¹RSS of Non-Linearity, Hysteresis, and Non-Repeatability.

²Note: Hydrogen not recommended for use with 17-4 PH Stainless Steel.

³Temperature outputs are for voltage output pressure sensors only and limited to connections that have 4 pins (Electrical Codes -D, -E, -8).

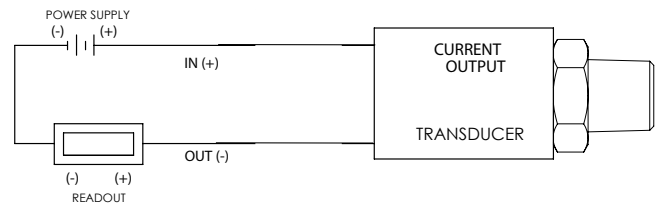
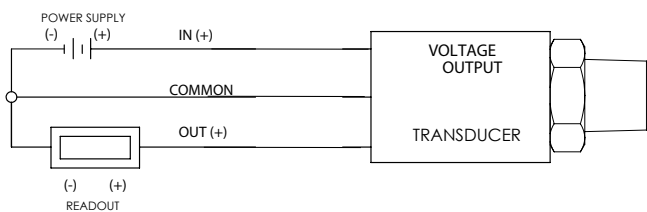
⁴Requires additional 2 mA of power.

⁵For use with pull-down resistors, contact factory before ordering.

⁶Reverse Wiring Protected.

⁷Not available for pressure ranges lower than 100 PSI (7 BAR)

WIRING



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ELECTRICAL FITTINGS

	Din 9.4 mm		M12 x 1P		Amp Superseal 1.5		Deutsch DT4-4P		Packard Metri Pack		3-Pin Deutsch		
	Code B		Code E		Code 6		Code 8		Code 9		Code C		
Pin #	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	
1	V _{out 1} (pressure)	No Connect	V _{supply}	V _{supply}	V _{out 1} (pressure)	No Connect	Ground	Return	V _{out 1} (pressure)	No Connect	C	V _{supply}	V _{supply}
2	V _{supply}	V _{supply}	V _{out 1} (pressure)	No Connect	Ground	Return	V _{supply}	V _{supply}	Ground	Return	A	Ground	Return
3	V _{out 2} (temp)	No Connect	Ground	Return	V _{supply}	V _{supply}	V _{out 2} (temp)	No Connect	V _{supply}	V _{supply}	B	V _{out 1} (pressure)	No Connect
4	Ground	Return	V _{out 2} (temp)	No Connect	—	—	V _{out 1} (pressure)	No Connect	—	—	—	—	—

PRESSURE FITTINGS

SAE Dimensions in Inches					
Fitting Code	0L = M12 x 1.5	01 = G 1/4 Ext.	1G = 1/4-SAE Female 7/16 UNF w/Schraeder	1J = 7/16-20Ext.(SAE#4, J1926-2)w/O-Ring	1P = SAE6 (9/16-18UNF 2A)
Torque	28-30 NM	30-35 NM	18-20 NM	18-20 NM	18-20 NM
Fitting Code	2T = M12 x 1.5	04 = 7/16-20 Ext. (SAE #4, J514 w/37°Flare)	4C = 1/4NPTF Dryseal EXT.	4D = 1/8NPTF Dryseal EXT.	05 = G 1/4 Ext. Face Seal
Torque	30-35 NM	15-16 NM	2-3 TFFT*	2-3 TFFT*	Dimensions: in. (mm)
Fitting Code	02 = 1/4-18 PT Ext.	0E = Female 1/4-18NPT	08 = 1/8-27 NPT Ext.	OK = M14 x 1.5 Straight	
Torque	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	

