

Models 546/547

High Performance Pressure Transducers

Gauge, Sealed Gauge and Absolute Pressure



Setra's Model 546 and Model 547 pressure transducers offer laboratory type pressure measurement in a rugged industrial housing complete with 5:1 range turndown, ideal for high overpressure applications, to provide full scale output from 25% to 125% of full range.

Utilizing thin film technology, Models 546 and 547 have 4 to 20 mA output, 0.1% Full Scale accuracy, high overpressure capability, choice of absolute, gauge, or sealed gauge pressure measurement, and pressure ranges from 10 psi up to 10,000 psi. The compensated temperature range is from -13°F up to +167°F.

Designed for use with corrosive media, the Models 546 and 547 are offered with 17-4 PH stainless steel or Inconel (17-4 PH and 15-7 Mo for ranges ≤ 30 psi) wetted parts to provide years of maintenance free pressure measurement in demanding industrial applications. (Order Model 547 for pressure transducer with Inconel® wetted parts.)

Depending upon the electrical connection selected, when coupled with the Model 546/547 enclosure, which is fabricated in 321 SS, 17-4 PH SS, and Glass-Filled Polyester, this unit is rated for IP40, IP65, or IP68 operation.

Thin Film Strain Gauge Pressure Sensors

Using the well proven Wheatstone Bridge principle, molecular layers are sputtered onto a 17-4 PH stainless steel diaphragm and the circuit is etched to provide excellent resistor definition and uniformity. Sputtered thin film technology allows the design of simple, highly accurate and compact strain gauges deposited onto the back of the sensing diaphragm which is in direct contact with the media. This method virtually eliminates drift, while offering enhanced sensitivity.

Applications

- Off-Highway Vehicles
- Natural Gas Equipment
- Semiconductor Processing
- Power Plants
- Heating, Ventilating & Air-Conditioning
- Refrigeration
- Robotics

Benefits

- Superior Stability Avoids Down Time
- 5:1 Range Turndown
- High Overpressure Capability
- IP40, IP65, and IP68 Rated
- $\pm 0.1\%$ FS High Accuracy
- Intrinsic Safe Option
- Sea Water Rated Option
- RFI Insensitivity
- Meets CE Conformance Standards

Model 546/547 Specifications

Performance Data

Accuracy RSS* (at constant temp)	±0.1% FS
Thermal Effects**	
Compensated Range °F (°C)	-13 to +167 (-25 to +75)
Standard Thermals	
Zero Shift %FS/100°F (100°C)	0.4 (0.8)
Span Shift %FS/100°F (100°C)	0.4 (0.8)
Improved Thermals	
Zero Shift %FS/100°F (100°C)	0.25 (0.5)
Span Shift %FS/100°F (100°C)	0.25 (0.5)
Long-Term Stability	0.1% FS/1 year
Proof Pressure	2 x FS (1.5 x FS for Inconel Parts)
Burst Pressure	>35 x FS ≤ 150 Psi (10 Bar) >15 X FS ≤ 1500 Psi (100 Bar) >8 X FS ≤ 10,000 Psi (690 Bar)

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

**Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.

Environmental Data

Temperature	
Operating* °F (°C)	
W/ 6-Pin Bayonet & DIN	-13 to +185 (-25 to +85)
W/ Cable	-4 to +122 (-20 to +50)
for Process/Media	-22 to +212 (-30 to +100)
Storage* °F (°C)	
W/ 6-Pin Bayonet & DIN	-13 to +185 (-25 to +85)
W/ Cable	-4 to +122 (-20 to +50)
for Process/Media	-22 to +212 (-30 to +100)
Vibration	35g Peak Sinusoidal, 5 to 2000 Hz
Shock	Withstands Free Fall to IEC 68-2-32 Procedure 1

*Operating temperature limits of the electronics only.

Physical Description (Cont'd)

Wetted Parts	17-4 PH Stainless Steel Inconel®, Optional (Order as Model 547) [17-4 PH and 15-7 Mo SS ≤ 1.6 Bar (30 Psi)]
Electrical Connection	10-6 Bayonet, DIN, IP68 Cable, Immersible Molded Cable
Pressure Fitting	See Ordering Information Below
Weight	10.8oz (305g)

Electrical Data (Current)

Circuit	2-Wire
Excitation	8 to 40 VDC
Output*	4 to 20 mA
Zero Adjustment	±10%
Span Adjustment	25% to 125% of Span
Maximum Loop Resistance	(Vs-8) x 50 Ohms

*Zero output factory set to within ±0.16 mA.

*Span output factory set to within ±0.16 mA.

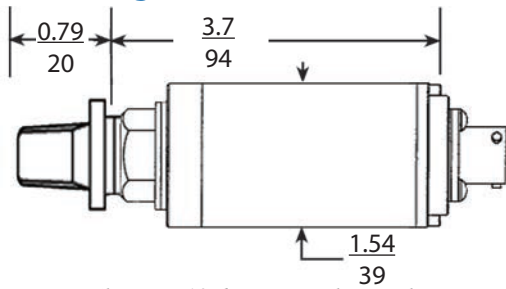
Physical Description

Case	321 Stainless Steel, 17-4 PH and Glass Filled Polyester
Ratings	IP40 w/10-6 Bayonet Connector and Gauge Unit IP65 w/10-6 Bayonet Connector and Absolute and Sealed Unit IP65 w/Large DIN 43650 Connector w/Mating Plug IP68 w/Molded Immersible Cable

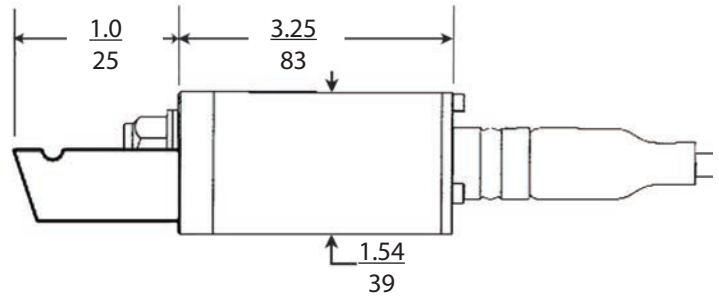
Pressure Media

Liquids or gases compatible with 17-4 PH Stainless Steel or Inconel®.

Outline Drawings



Shown w/10-6 Bayonet Electrical Connector and 1/4-18 NPT Male Pressure Fitting



Shown w/Immersible Cable and Plastic Nose Cone

ORDERING INFORMATION

Code all blocks in table.

Example: Part No 5461015PGG211B3T- For a Model 546 Pressure Transducer, 15 PSI Gauge Pressure, G 1/4" Male Pressure Fitting, 10-6 Bayonet, 0.1% Accuracy

Model	Range	Pressure	Pressure Fitting	Output	Elec. Termination	Accuracy	Options
5461 = 546 w/SS Sensor	010P = 10PSI 015P = 15 PSI 030P = 30 PSI 060P = 60 PSI 100P = 100 PSI 150P = 150 PSI 200P = 200 PSI 300P = 300 PSI 500P = 500 PSI 10CP = 1000 PSI 15CP = 1500 PSI 30CP = 3000 PSI 50CP = 5000 PSI 60CP = 6000 PSI 10KP = 10000 PSI	G = Gauge S = Sealed Gauge* A = Absolute**	G2 = G-1/4 Male G3 = G 1/4 Female J7 = 7/16-20 UNF Male SAE #4 (J1926-2) 2M = 1/4-18 NPT Male 4M = 1/2-14 NPT Male W1 = Plastic Nose Cone W2 = Stainless Steel Sink Weight Nose Cone W3 = Plastic Nose Cone w/ Restrictor	11 = 4 to 20 mA	B3 = 10-6 Bayonet Connector V1 = IP68 Cable (1 Meter [3.28 ft.]) E2 = Large DIN 43650 Connector w/Mating Plug UA = Molded Immersible Cable (up to 200 Meters [656 ft.])	T = 0.1% FS w/Standard Thermals 1 = 0.1% FS w/Improved Thermals	G = BASEEFA Intrinsic Safety-Galvanic S = Seawater Rated

*Ranges 300 PSI up to 10,000 PSI

**Ranges 15 PSI up to 10,000 PSI

Please contact factory for configurations not shown.

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