

SM-5501 Constant Current SM-5502 Constant Voltage

OEM Pressure Transducer

Fully Temperature Compensated and Calibrated

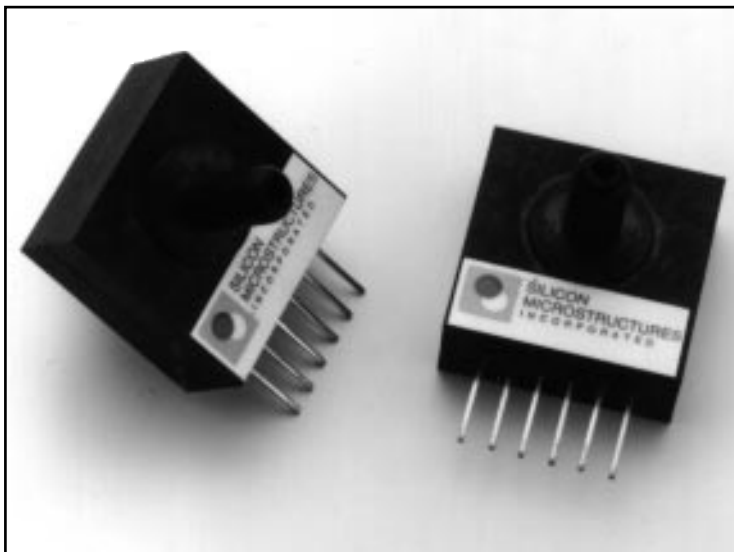
Description

Pressure sensor models SM-5501 and SM-5502 are fully temperature-compensated and calibrated. Each sensor is housed in a rugged plastic enclosure.

Each series covers a wide range of full-scale pressures. Differential, gage and absolute measurement configurations are available for a wide variety of applications.

Factory calibration provides either a gain-set resistor (Model SM-5501) or a fixed 50 mV full-scale output (Model SM-5502). By eliminating the need for customer gain adjustments, these parts are truly interchangeable and offer remarkable assembly-cost savings for a wide variety of OEM industrial, medical and consumer products.

Rugged pins, sealed into the package to prevent breakage, allow simple placement in PC boards using standard 0.1 inch center-to-center pin spacing. Full high-temperature plastic enclosure prevents substrate drift and eases handling.



Features

- Fully temperature-compensated
- Thoroughly calibrated and interchangeable
- Both constant voltage or constant current drive configuration available
- Fully-enclosed, rugged plastic housing
- 5, 15, 30, 60, and 100 psi ranges available
- Differential, gage or absolute measurement
- Calibrated to better than 1%
- Low cost
- Easy installation

Applications

- Barometric pressure
- Medical instrumentation
- Environmental control
- Altimeters
- Automotive diagnostics
- Avionics
- Appliances

Characteristics

Test Conditions: Model SM-5501 w/excitation= 1.500 mA @ 25°C, Model SM-5502 w/excitation=10.00 Vdc @ 25°C, unless otherwise specified

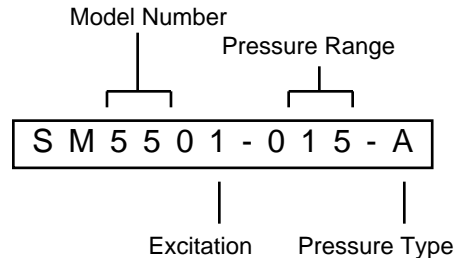
Parameter	Minimum	Typical	Maximum	Units
Excitation				
Current (SM-5501)	0.00	1.50	3.00	mA
Voltage (SM-5502)	0.00	10.00	20.00	Volts
Output				
Span (SM-5501) ¹	50.0	100.0	170.0	mV
Span (SM-5502)	49.5	50.0	50.5	mV
Offset	-1.00	±0.20	1.00	mV
Temperature Performance				
TC Span ²	-1.20	±0.20	1.20	%FS/100 °C ³
TC Offset ²	-1.20	±0.20	1.20	%FS/100 °C
Temp Hysteresis	-0.15	±0.05	0.15	%FS
Accuracy				
Linearity ⁴	-0.15	±0.05	0.15	%FS
Repeatability	-0.15	±0.05	0.15	%FS
Pressure Hysteresis	-0.15	±0.05	0.15	%FS
Impedance (SM-5501)				
Z Input	2.20	3.00	3.80	k
Z Output	2.90	3.30	3.80	k
Impedance (SM-5502)				
Z Input	4.50	8.00	15.00	k
Z Output	2.00	2.50	3.80	k
Temperature Range				
Calibration	0	-	70	°C
Operating	-40	-	85	°C
Storage	-55	-	125	°C
Dynamic Characteristics				
Proof Pressure	3 times full-scale output or 225 PSI, whichever is less			
Burst Pressure				

Notes

- 1) Gain-set resistor for constant current (SM-5501): see application note 5500-1.
- 2) Measured over a temperature range of 0 to 70 °C. RMS error, see application note 5500-1.
- 3) FS denotes full scale output.
- 4) Best fit straight line.

Ordering Information

Excitation:	Pressure range
1: Current	005: 5 PSI
2: Voltage	015: 15 PSI
	030: 30 PSI
Pressure type	060: 60 PSI
A: Absolute	100:100 PSI
D: Differential	
G: Gage	



Special configurations are available. Contact Silicon Microstructures for more information.

Figure 1: Device Pinouts

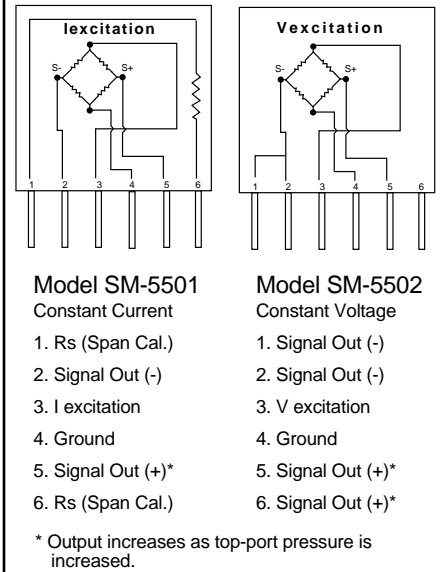
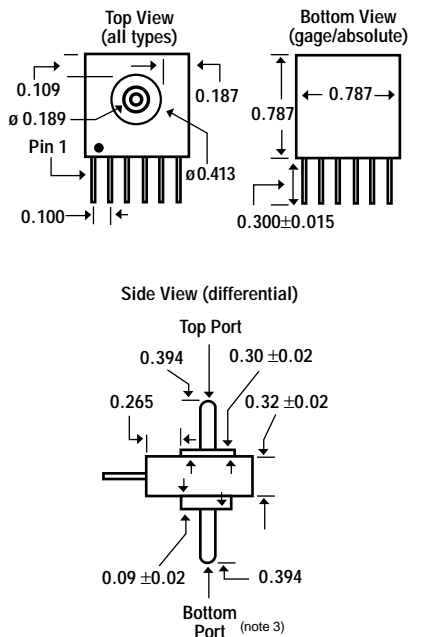


Figure 2: Installation Drawing



NOTES:

1. All dimensions are shown in inches.
2. Tolerance on all dimensions ±0.005" unless otherwise specified.
3. Side view for gage/absolute parts is same as the differential without the bottom port.



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Additional Products

- Accelerometers
- Surface Mount Pressure Sensors
- Custom Designed Products
- Low Range Pressure Transducers