

Microstructure Pressure Sensors

0 psi to 5 psi through 0 psi to 300 psi

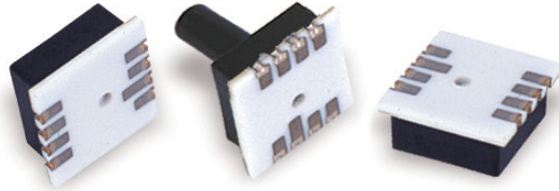
SCC SMT Series

FEATURES

- Low Cost
- Small Size
- Internal Temperature Compensation
- Absolute or Gauge Pressures
- High-Impedance Bridge
- Low Power Consumption

TYPICAL APPLICATIONS

- Pneumatic Controls
- Automotive Diagnostics
- Medical Equipment/Instrumentation
- Dental Equipment
- Environmental Controls
- Barometric Pressure Measurement
- Altimeters
- Pneumatic Controls
- Battery Powered Equipment



The SCC series sensors offer an extremely low cost sensor element with a temperature stable output when driven with a constant current source. These integrated circuit sensors were designed for extremely cost sensitive applications where precise accuracy over a wide temperature range is not required.

The SCC series SMT offers a standard surface mount package and is offered with an optional ported lid to fit in a variety of application. This series of sensors are designed for measuring absolute and gage pressure ranges from 0 psi to 5 psi through 0 psi to 300 psi. The absolute devices have an internal vacuum reference and an output voltage proportional to absolute pressure. Differential devices allow application of pressure to either side of the sensing diaphragm and can be used for gauge or differential measurements.

The SCC series SMT sensors offer a 4-pin closed bridge configuration for electrical connection with additional pads provided for mechanical support. Pulsed power is recommended to achieve maximum accuracy and conserve battery power in portable applications.

⚠ WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

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PRESSURE SENSOR SPECIFICATIONS ⁽¹⁾

Characteristic	Maximum Ratings
Supply Current, I_s	1.5 mA
Compensated Temperature	0 °C to 50 °C [32 °F to 122 °F]
Operating Temperature	-40 °C to 125 °C [-40 °F to 257 °F]
Storage Temperature	-55 °C to 125 °C [-67 °F to 257 °F]
Humidity	0 % to 100 % RH
Lead Temperature (Soldering 2 s to 4 s)	250 °C [482 °F]

STANDARD PRESSURE RANGES ⁽¹⁾

Part Number	Operating Pressure	Maximum ⁽²⁾ Pressure	Operating Pressure	Sensitivity ⁽³⁾		Units
				Nominal	Std Dev.	
SCC05GSMT(P)	0 psi to 5 psi	20 psi	0 psi to 5 psi	7.50	±0.68	mV/mA/psi
SCC15(A,G)SMT(P)	0 psi to 15 psi	30 psi	0 psi to 15 psi	4.30	±0.37	mV/mA/psi
SCC30(A,G)SMT(P)	0 psi to 30 psi	60 psi	0 psi to 30 psi	2.90	±0.57	mV/mA/psi
SCC100(A,G)SMT(P)	0 psi to 100 psi	150 psi	0 psi to 100 psi	1.30	±0.20	mV/mA/psi
SCC300ASMT(P)	0 psi to 300 psi	450 psi	0 psi to 300 psi	0.30	±0.03	mV/mA/psi

PERFORMANCE SPECIFICATIONS ⁽¹⁾

Characteristics	Min	Typ	Max	Units
Zero Pressure Offset (@ $T_A = 25\text{ °C}$)	-30.0	-10.0	20.0	mV
Linearity, Hysteresis, Repeatability ⁽⁴⁾	-1.0	0.2	1.0	% FSS
Temperature Effect on Span ⁽⁵⁾	-1.5	0.25	1.5	% FSS
Temperature Effect on Offset ⁽⁵⁾	-2.0	.5	2.0	% FSS
Long-Term Stability of Offset and Span ⁽⁶⁾	–	0.1	–	% FSS
Response Time (10 % to 90 %) ⁽⁷⁾	–	0.1	–	ms
Input Resistance (@ $T_A = 25\text{ °C}$)	4.00	5.00	6.50	k Ω
Output Impedance	4.00	5.00	6.50	k Ω

SPECIFICATION NOTES

- Note 1: Reference Conditions: Supply Current, $I_s = 1.0\text{ mA}$, $T_A = 25\text{ °C}$ to 70 °C [32 °F to 158 °F], Common-mode Line Pressure = 0 psig, Pressure Applied to P1 unless otherwise noted.
- Note 2: If the maximum pressure is exceeded, even momentarily, the package may leak or burst, or the pressure sensing die may fracture.
- Note 3: Sensitivity is the ratio of the output signal voltage change to the corresponding input pressure change. The sensitivity is characterized by design and periodic production testing. This parameter is not 100 % tested in production.
- Note 4: Linearity is based on best straight line fit. Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
- Note 5: Maximum error band of the offset voltage and the error of the band of the span over the compensated temperature range, relative to the 25 °C reading. Typical temperature coefficients for span and resistance are -2200 ppm/°C and 2200 ppm/°C respectively. Temperature effects on offset and span are guaranteed by design. These parameters are not 100 % tested in production.
- Note 6: Long term stability over a one year period.
- Note 7: Response time for 0 psi to full scale span pressure step change.

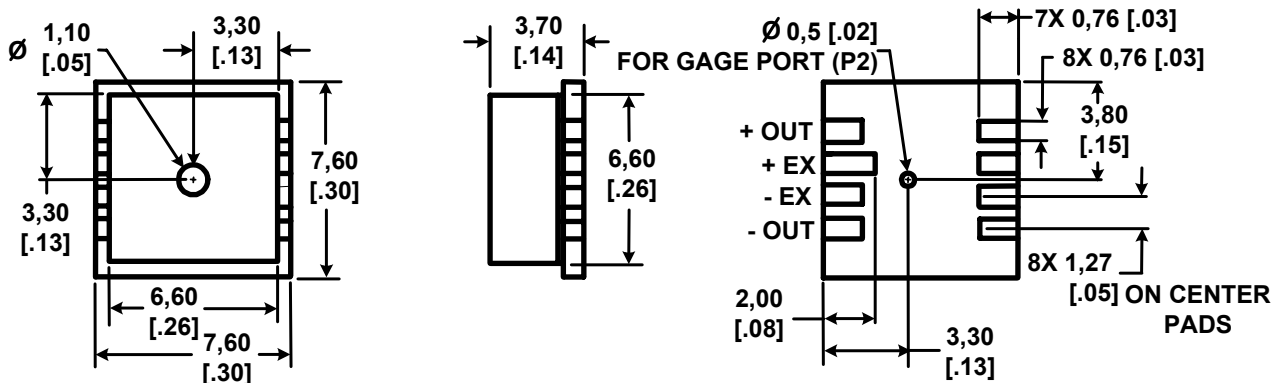
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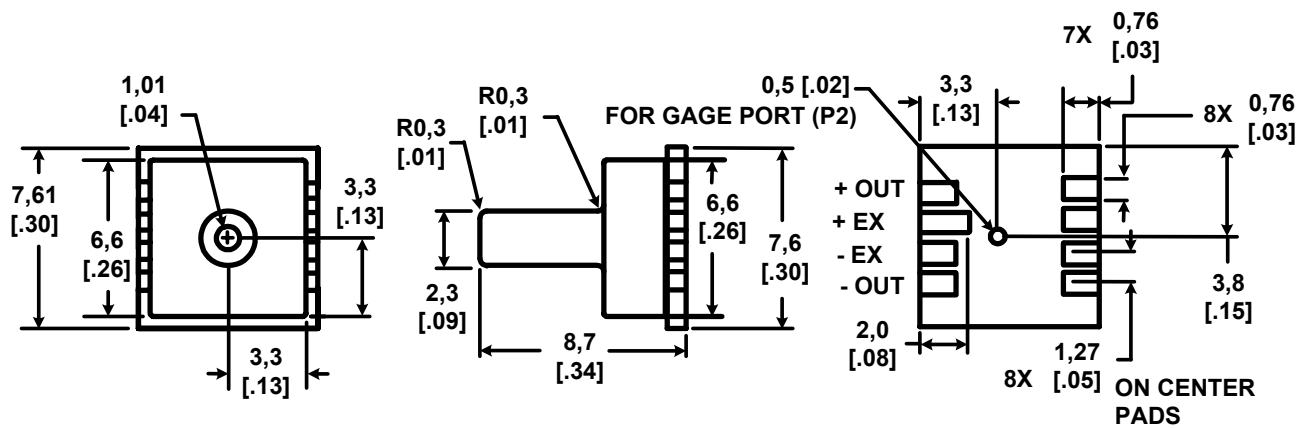
SCC SMT Series

DIMENSIONAL DRAWINGS – For Reference Only mm [in]

LOW PROFILE SMT



PORTED "P" SMT



ORDERING INFORMATION

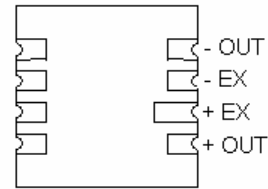
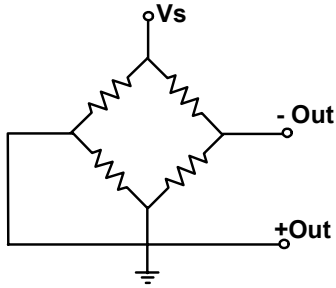
Pressure Range	Standard SMT Package		Ported SMT Package	
	Absolute	Gage	Absolute	Gage
0 psi to 5 psi	–	SCC05GSMT	–	SCC05GSMT ^P
0 psi to 15 psi	SCC15ASMT	SCC15GSMT	SCC15ASMT ^P	SCC15GSMT ^P
0 psi to 30 psi	SCC30ASMT	SCC30GSMT	SCC30ASMT ^P	SCC30GSMT ^P
0 psi to 100 psi	SCC100ASMT	SCC100GSMT	–	–
0 psi to 300 psi	SCC300ASMT	SCC300GSMT	–	–

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EQUIVALENT CIRCUITS



WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. **The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

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While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For application assistance, current specifications, or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

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