



RCO Series

Precision compensated pressure sensors

FEATURES

- 0...50 mbar to 0...10 bar,
0...1 to 0...150 psi,
differential, gage or absolute
- Temperature compensated
- Calibrated zero and span
- High impedance for low power applications
- Sensortech PRO services



MEDIA COMPATIBILITY

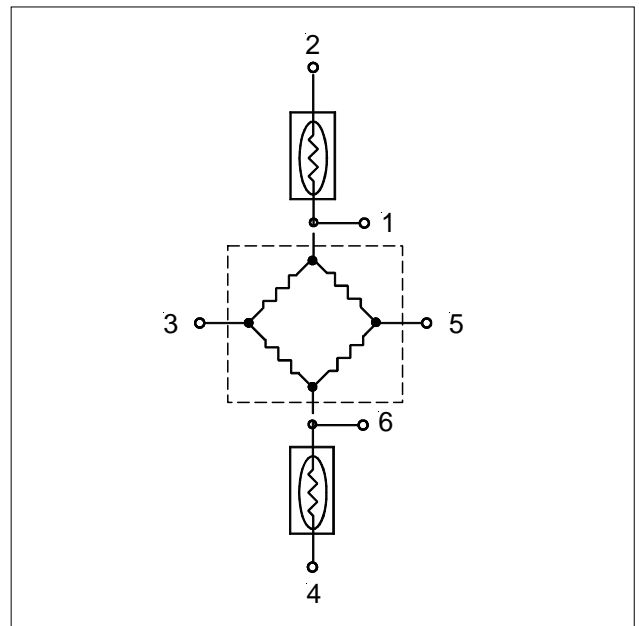
To be used with non-corrosive, non-ionic working fluids such as clean dry air, dry gases and the like.

SPECIFICATIONS

Maximum ratings

Supply voltage V_s	+20 V _{DC}
Lead temperature (soldering 4 sec.)	250 °C
Temperature ranges	
Compensated	0 to 70 °C
Operating	-40 to 85 °C
Storage	-55 to 125 °C
Humidity limits (non-condensing)	0 to 100% RH
Common mode pressure	50 psig

EQUIVALENT CIRCUIT





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PRESSURE RANGES SPECIFICATIONS¹

RCO...P (Prime Grade) devices

Part number	Operating pressure	Proof pressure ²	Full-scale span ³		
			Min.	Typ.	Max.
RCOM050...P	0...50 mbar	1.4 bar	12.92 mV	13.05 mV	13.18 mV
RCOM100...P	0...100 mbar	1.4 bar	25.84 mV	26.10 mV	26.37 mV
RCOM250...P	0...250 mbar	1.4 bar	43.1 mV	43.5 mV	43.9 mV
RCOB001...P	0...1 bar	2.1 bar	86.2 mV	87.0 mV	87.9 mV
RCOB002...P	0...2 bar	4.2 bar	86.2 mV	87.0 mV	87.9 mV
RCOB005...P	0...5 bar	10 bar	71.8 mV	72.5 mV	73.2 mV
RCOB010...P	0...10 bar	10 bar	86.0 mV	87.0 mV	88.0 mV
RCOP001...P	0...1 psi	20 psi	17.82 mV	18.0 mV	18.18 mV
RCOP005...P	0...5 psi	20 psi	59.40 mV	60.0 mV	60.60 mV
RCOP015...P	0...15 psi	30 psi	89.10 mV	90.0 mV	90.90 mV
RCOP030...P	0...30 psi	60 psi	89.10 mV	90.0 mV	90.90 mV
RCOP100...P	0...100 psi	150 psi	99.00 mV	100.0 mV	101.0 mV
RCOP150...P	0...150 psi	150 psi	89.00 mV	90.0 mV	91.0 mV

RCO...H (High Grade) devices

Part number	Operating pressure	Proof pressure ²	Full-scale span ³		
			Min.	Typ.	Max.
RCOM050...H	0...50 mbar	1.4 bar	12.3 mV	13.05 mV	13.8 mV
RCOM100...H	0...100 mbar	1.4 bar	24.6 mV	26.1 mV	27.6 mV
RCOM250...H	0...250 mbar	1.4 bar	41.7 mV	43.5 mV	45.3 mV
RCOB001...H	0...1 bar	2.1 bar	82.2 mV	87.0 mV	91.9 mV
RCOB002...H	0...2 bar	4.2 bar	82.2 mV	87.0 mV	91.9 mV
RCOB005...H	0...5 bar	10 bar	68.9 mV	72.5 mV	76.1 mV
RCOB010...H	0...10 bar	10 bar	82.2 mV	87.0 mV	91.9 mV
RCOP001...H	0...1 psi	20 psi	17 mV	18 mV	19 mV
RCOP005...H	0...5 psi	20 psi	57.5 mV	60 mV	62.5 mV
RCOP015...H	0...15 psi	30 psi	85 mV	90 mV	95 mV
RCOP030...H	0...30 psi	60 psi	85 mV	90 mV	95 mV
RCOP100...H	0...100 psi	150 psi	95 mV	100 mV	105 mV
RCOP150...H	0...150 psi	150 psi	85 mV	90 mV	95 mV



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PERFORMANCE CHARACTERISTICS¹

RCO...P (Prime Grade) devices

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	all RCO...DP devices	-0.25	0	+0.25	mV
	all RCO...AP devices ¹²	-0.50	0	+0.50	
Combined linearity and hysteresis ⁴			±0.1	±0.5	%FSO
Temperature effects (0 to 70°C) ⁵	Offset		±0.1	±0.5	mV
	Span		±0.2	±1.0	%FSO
Repeatability ⁶			±0.2	±0.5	
Input impedance ⁷			4.0		kΩ
Output impedance ⁸			4.0		
Common mode voltage ⁹		5.8	6.0	6.2	V _{DC}
Response time ¹⁰			100		µsec
Long term stability of offset and span ¹¹			±0.1		mV

RCO...H (High Grade) devices

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	all RCO...DH devices	-0.50	0	+0.50	mV
	all RCO...AH devices ¹²	-1.00	0	+1.00	
Combined linearity and hysteresis ⁴			±0.2	±1.0	%FSO
Temperature effects (0 to 70°C) ⁵	Offset		±0.2	±1.0	mV
	Span		±0.4	±2.0	%FSO
Repeatability ⁶			±0.2	±0.5	
Input impedance ⁷			4.0		kΩ
Output impedance ⁸			4.0		
Common mode voltage ⁹		5.7	6.0	6.3	V _{DC}
Response time ¹⁰			100		µsec
Long term stability of offset and span ¹¹			±0.1		mV

Specification notes:

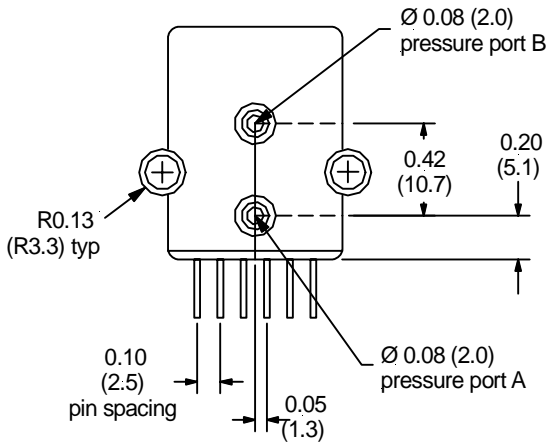
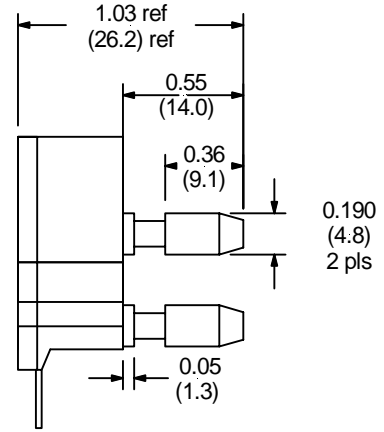
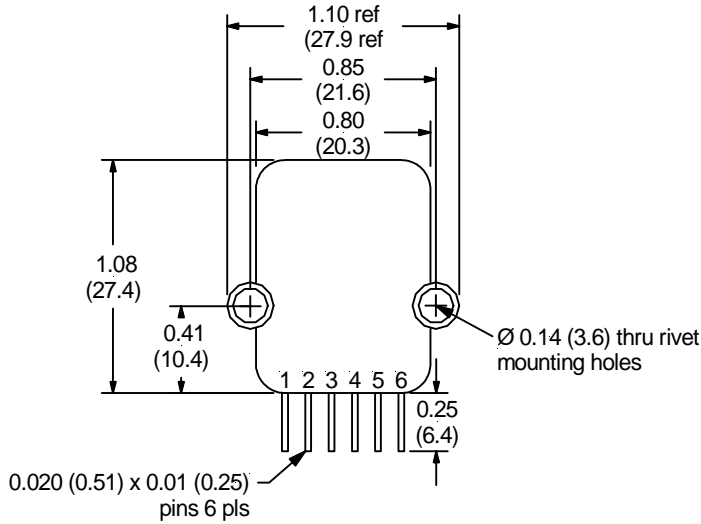
1. Reference conditions: V_S = 12 V, T_A = 25°C, common-mode line pressure = 0 barg, pressure applied to Port B. For absolute devices only, pressure is applied to Port A and the output polarity is reversed.
2. Maximum pressure above which causes permanent sensor failure.
3. Span is the algebraic difference between the output voltage at full-scale pressure and the output at zero pressure. Span is ratiometric to the supply voltage.
4. Hysteresis - the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
5. Maximum error band of the offset voltage and the error band of the span, relative to the 25°C reading.
6. Maximum difference in output at any pressure within the operating pressure range and temperature within 0°C to +70°C after:
 - a) 1,000 temperature cycles, 0°C to +70°C
 - b) 1.5 million pressure cycles, 0 psi to full-scale span
7. Input impedance is the impedance between pins 2 and 4.
8. Output impedance is the impedance between pins 3 and 5.
9. This is the common-mode voltage of the output arms (pins 3 and 5) for V_S = 12 V_{DC}.
10. Response time for a 0 bar to full-scale span pressure step change, 10 % to 90 % rise time.
11. Long term stability over a one year period.
12. Absolute devices with improved zero pressure offset values are available on request. Please contact your nearest Sensorteknics sales office for further information.



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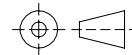
PHYSICAL DIMENSIONS



mass: 5 g

Port B:
High pressure Port for gage and differential devices

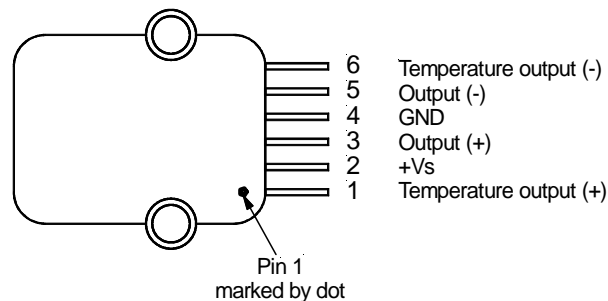
Port A:
High pressure Port for absolute devices



third angle projection

dimensions in inches (mm)

ELECTRICAL CONNECTION



Note: The polarity indicated is for pressure applied to port B. For absolute devices pressure is applied to port A and the output polarity is reversed.



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ORDERING INFORMATION - AVAILABLE LISTINGS

Note:

- Preferred listings are highlighted in grey
- RCO...P = Prime Grade, RCO...H = High Grade

Pressure range	Pressure mode	
	Absolute	Differential/Gage
50 mbar		RCOM050D(P,H)
100 mbar		RCOM100D(P,H)
250 mbar		RCOM250D(P,H)
1 bar	RCOB001A(P,H)	RCOB001DP
2 bar	RCOB002A(P,H)	RCOB002D(P,H)
5 bar	RCOB005A(P,H)	RCOB005D(P,H)
10 bar	-	RCOB010D(P,H)
1 psi		RCOP001D(P,H)
5 psi		RCOP005D(P,H)
15 psi	RCOP015A(P,H)	RCOP015DP
30 psi	RCOP030A(P,H)	RCOP030D(P,H)
100 psi	RCOP100A(P,H)	RCOP100D(P,H)
150 psi	RCOP150A2P	RCOP150D(P,H)

Sensortech PRO services:

- Extended guarantee period of 2 years
- Improved performance characteristics
- Custom product modifications and adaptations even for small quantities
- Advanced logistics models for supply inventory and short delivery times
- Technical support through application engineers on the phone or at your site
- Fastest possible technical response for design and QA engineers
- ... plus other services on request

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