RTO Series

Stainless steel pressure sensors

FEATURES

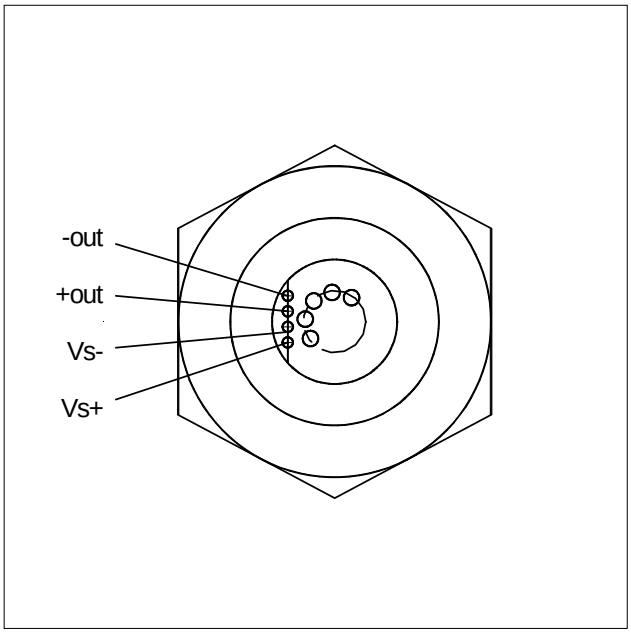
- **0...3 to 0...500 psi and -15...15 to -15...100 psi**
- **Absolute and gage pressures**
- **Calibrated and temperature compensated**
- **Rugged stainless steel isolated package**
- **Sensortechnics PRO services**

SPECIFICATIONS

Maximum ratings

Supply voltage	+15 V_{DC}
Temperature ranges:	
Compensated	0 to +82°C
Operating	-40 to +125°C
Storage	-40 to +125°C
Vibration:	10 g at 20 to 2000 Hz
Shock:	100 g for 11 msec.
Life:	1 million cycles minimum
Insulation resistance (min.):	100 MΩ at 50 V_{DC}

ELECTRICAL CONNECTION



PRESSURE SENSOR CHARACTERISTICS

Part number	Pressure range	Proof pressure[6]	Burst pressure[7]
RTOP003G...	0...3 psig	9 psig	15 psig
RTOP005G...	0...5 psig	15 psig	25 psig
RTOP010G...	0...10 psig	30 psig	45 psig
RTOP015(A,G)...	0...15 psi	45 psi	75 psig
RTOP015V...	-15...15 psig	45 psig	75 psig
RTOP030(A,G)...	0...30 psi	90 psi	150 psi
RTOP030V...	-15...30 psig	90 psig	150 psig
RTOP050(A,G)...	0...50 psi	150 psi	250 psi
RTOP100(A,G)...	0...100 psi	300 psi	300 psi
RTOP100V...	-15...100 psig	300 psig	300 psig
RTOP200(A,G)...	0...200 psi	600 psi	1000 psi
RTOP300(A,G)...	0...300 psi	900 psi	1500 psi
RTOP500(A,G)...	0...500 psi	1200 psi	2400 psi

PERFORMANCE CHARACTERISTICS

(V_S = 10 V_{DC} ± 0.01 V_{DC}, t_{amb} = 25°C)

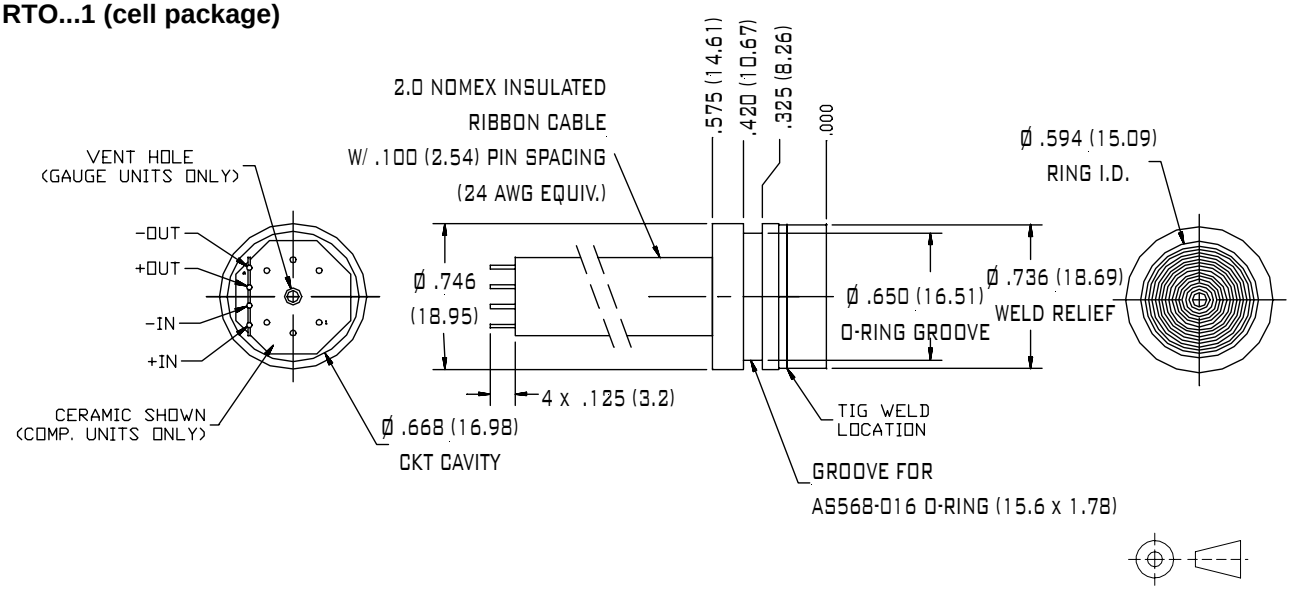
Characteristics			Min.	Typ.	Max.	Units
Zero pressure offset	all devices up to 10 psi		-1.5	0	+1.5	mV
	all RTO...A... devices[9]		-2.0	0	-2.0	
	all others		-1.0	0	-1.0	
Full scale span[1]	3 psi and 5 psi devices		48	50	52	
	all others		98	100	102	
Non-linearity[2]				±0.1	±0.25	%FSO
Pressure hysteresis[2]				±0.015	±0.030	
Thermal effects[3] (0 to 82°C)	3 psi and 5 psi devices	Offset			±2.0	
		Span			±2.0	
	all others	Offset		±0.5	±1.0	
		Span		±0.5	±1.0	
Thermal hysteresis (0 to 82°C)				±0.1	±0.3	
Repeatability				±0.010	±0.030	
Long term stability of offset and span[4]				±0.1	±0.3	
Response time (10 to 90 %)				0.1		ms
Input impedance			8.0	25	50	kΩ
Output impedance			3.0	4.5	6.0	
Common mode voltage[8]			0.5	1.3	2.0	V

Specification notes:

1. Span is the algebraic difference between the output voltage at full scale pressure and the output at zero pressure. Full scale span is ratiometric to the supply voltage.
2. Linearity is based on **B**est fit **S**traight **L**ine from the zero to the full scale pressure. Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
3. Maximum error band of the offset voltage or span over the compensated temperature range, relative to the 25°C reading.
4. Long term stability over a six month period.
5. Response time for a step change from the zero pressure to the full scale pressure .
6. The maximum pressure that can be applied without changing the transducer´s performance or accuracy.
7. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer case.
8. Common mode voltage as measured from output to ground.
9. Absolute devices with improved zero pressure offset values are available on request. Please contact your nearest Sensortechnics sales office for further information.

PHYSICAL DIMENSIONS

RTO...1 (cell package)



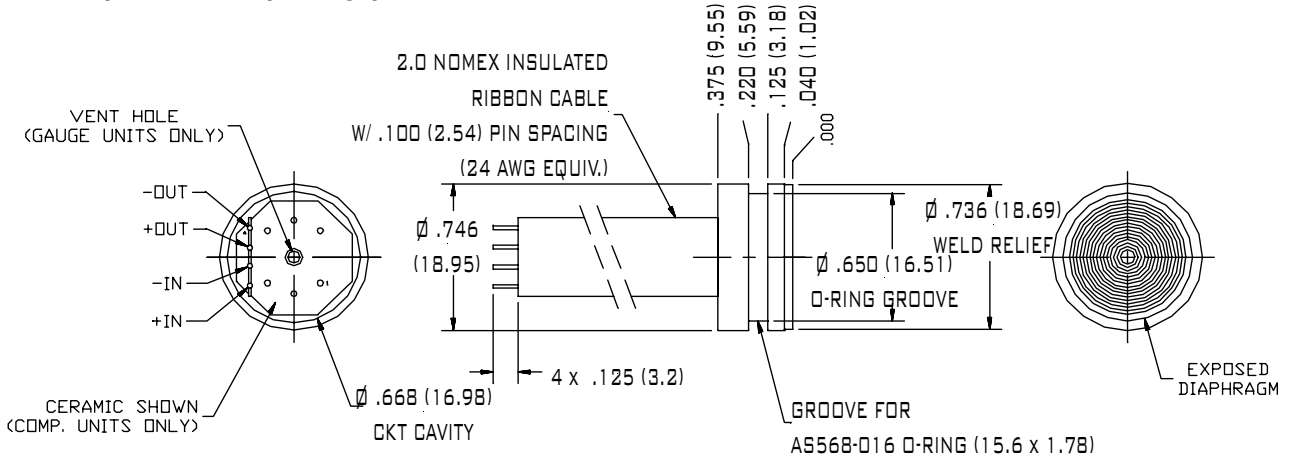
third angle projection
dimensions in inches (mm)

Do not touch the diaphragm!

mass: 20 g

Note:	Non-concentricity effects at the diaphragm weld area may cause run out of up to ±0.006“ between the upper and lower portions of the sensor body (it is recommended to use a counter bore in the mating bore used with this device to allow for this non-concentricity).

RTO...2 (flush mount package)



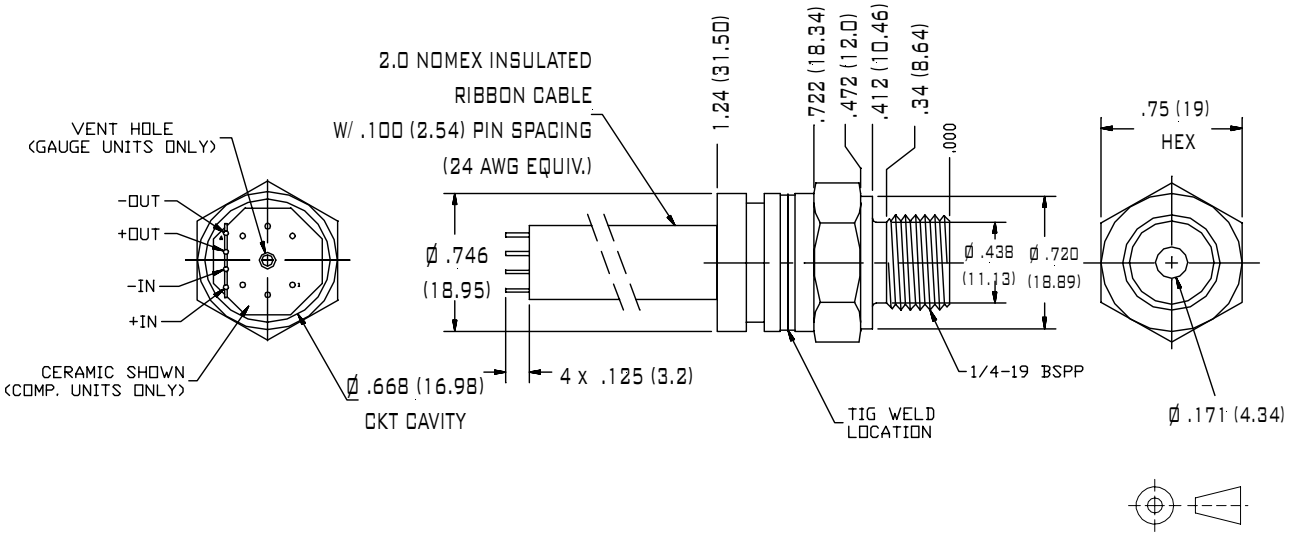
third angle projection
dimensions in inches (mm)

Do not touch the diaphragm!

mass: 18 g

PHYSICAL DIMENSIONS (cont.)

RTO...7 (1/4 BSP package)



third angle projection

mass: 52 g

dimensions in inches (mm)

ORDERING INFORMATION

	Series	Pressure range		Pressure mode		Housing style	
Options	**RTO**	**P003**	0...3 psi	**A***	Absolute	**1**	Cell
		P005	0...5 psi	**G**	Gage	**2**	Flush mount
		P010	0...10 psi	**V****	Vacuum/gage	**7**	1/4 BSP
		P015	0...15 psi				
		P015(V)	-15...+15 psi				
		P030	0...30 psi				
		P030(V)	-15...+30 psi				
		P050	0...50 psi				
		P100	0...100 psi				
		P100(V)	-15...+100 psi				
		P200	0...200 psi				
		P300	0...300 psi				
		P500	0...500 psi				
				* from 15 psi upwards only ** for 15, 30 and 100 psi only			
Example:	**RTO**	**P015**		**A**		**2**	

Note: Current supply versions are available on request.
Please contact your nearest Sensortechnics sales office for further information.

Sensortechnics PRO services:

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- Fastest possible technical response for design and QA engineers

... plus other services on request

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