19C Series

Temperature compensated stainless steel Pressure Sensor cells

FEATURES

- 0 - 5 to 0 - 1000 psi
- Calibrated and Temperature Compensated
- Rugged Stainless Steel Isolated Package
- Small Size
- Absolute & Gage Pressures
- Reliable Semiconductor Technology

GENERAL DESCRIPTION

The stainless steel 19C Series devices were developed for pressure applications that involve measurement of hostile media in harsh environments. These sensors will accommodate any media that does not adversely affect 316 stainless steel.

These 19mm sensors are calibrated and temperature compensated when used with a **constant voltage source**. They feature a variety of pressure connections to allow use in a wide range of OEM equipment.

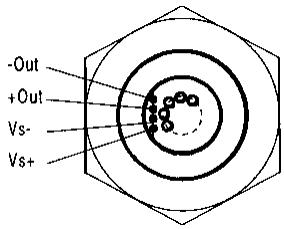
The 19C Series devices are rugged and reliable transducers for use in a wide variety of pressure sensing applications where corrosive liquids or gases are monitored.

Scale: 1cm
1 inch

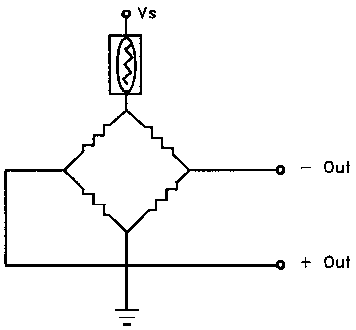
APPLICATIONS

- Industrial Automation and Flow Control
- Process Control System
- Pressure Calibrators
- Industrial Sprayers

ELECTRICAL CONNECTIONS



EQUIVALENT CIRCUIT



MAXIMUM RATINGS (all devices)

Supply Voltage V_S +15 V_{DC}

ENVIRONMENTAL SPECIFICATIONS (all devices)

Temperature Ranges:	
Compensated	0°C to 70°C
Operating	-20°C to +125°C
Storage	-40°C to +125°C
Vibration:	10g at 20-2000 Hz
Shock:	100g for 11 msec
Life:	1 Million Cycles Minimum
Insulation Resistance (Min.):	100 MΩ at 50 V_{DC}

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PRESSURE RANGE SPECIFICATIONS

SenSym PART NO.	PRESSURE RANGE	PROOF PRESSURE[7]
19C005G (1...8)	0 - 5 PSI	20 PSI
19C015 (A.G) (1...8)	0 - 15 PSI	30 PSI
19C030 (A.G) (1...8)	0 - 30 PSI	60 PSI
19C050 (A.G) (1...8)	0 - 50 PSI	100 PSI
19C100 (A.G) (1...8)	0 - 100 PSI	200 PSI
19C200 (A.G) (1...8)	0 - 200 PSI	400 PSI
19C300 (A.G) (1...8)	0 - 300 PSI	600 PSI
19C500 (A.G) (1...8)	0 - 500 PSI	850 PSI
19C1000A (1...8)	0 -1000 PSI	1500 PSI

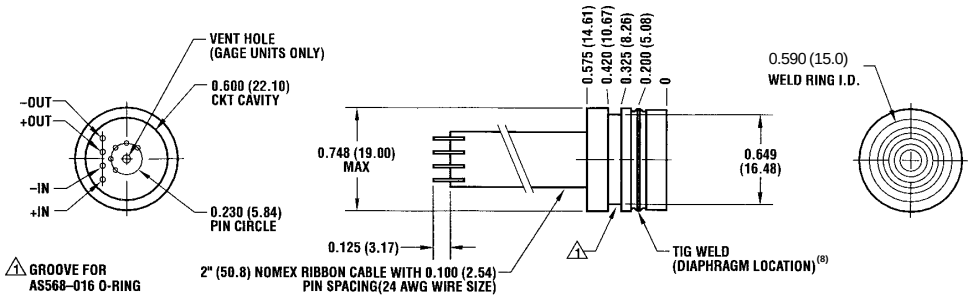
* Note: Parts are available in Absolute and Gage pressure (A=Absolute, G= Gage) and also in various Cell and Male pressure interfaces (1 through 8).

PERFORMANCE CHARACTERISTICS[1]

Characteristics		Min.	Typ.	Max.	Unit
Zero Pressure Offset		-1	0	+1	mV
Full-scale Span[2]	19C005G... all other	59 99	60 100	61 101	mV
Combined Linearity and Hysteresis[3]		---	±0.1	±0.5	%FSS
Temp. Effect on Span[4]		---	±0.2	±1.0	%FSS
Temp. Effect on Offset[4]	19C005G... all other	--- ---	±0.2 ±0.2	±2.0 ±1.0	%FSS
Thermal Hysteresis (0 to 50°C)		---	±0.2	---	%FSS
Long Term Stability of Offset and Span[5]		---	±0.1	---	%FSS
Response Time (10% to 90%)[6]		---	0.1	---	ms
Input Impedance		---	4.5	---	kΩ
Output Impedance		---	4.5	---	kΩ
Repeatability		---	±0.05	---	%FSS
Common Mode Output		1.0	2.5	4.0	V

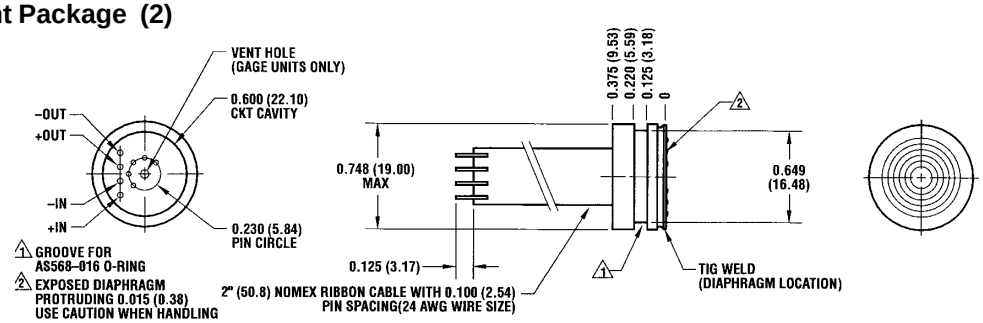
PHYSICAL DIMENSIONS

Cell with Body O-Ring Package (1)



Mass: 20g

Flush Mount Package (2)



Mass: 18g

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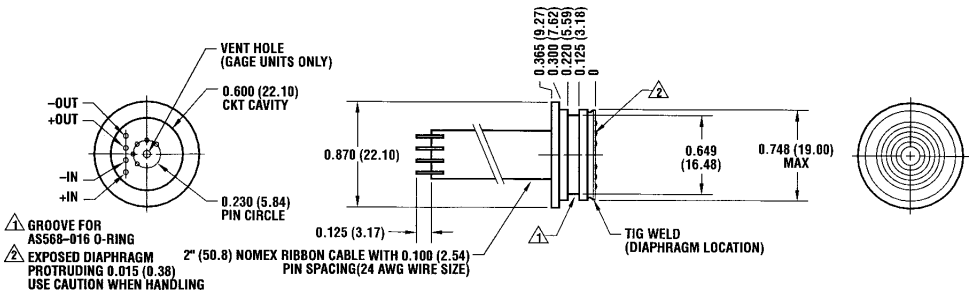
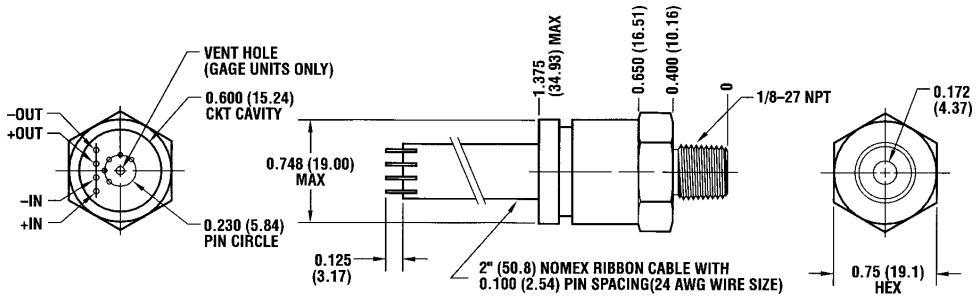
PHYSICAL DIMENSIONS (cont.)

Flush Mount Package w/ Flange (3)



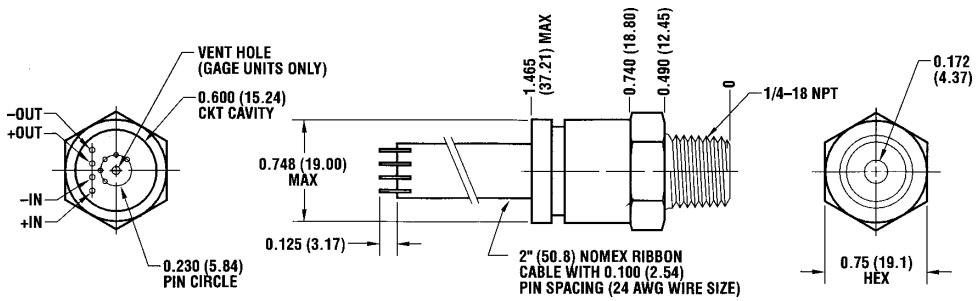
Mass: 18g **Dimensions in inches (mm)**

1/8 NPT Male Port Package (4)



Mass: 47g

¼" NPT Male Port Package (5)



Mass: 47g **Dimensions in inches (mm)**

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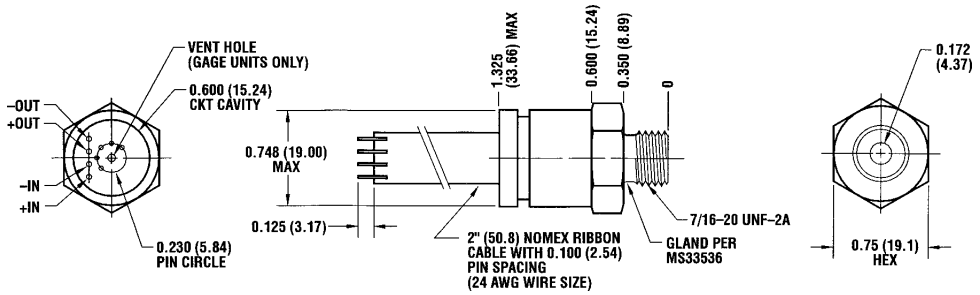
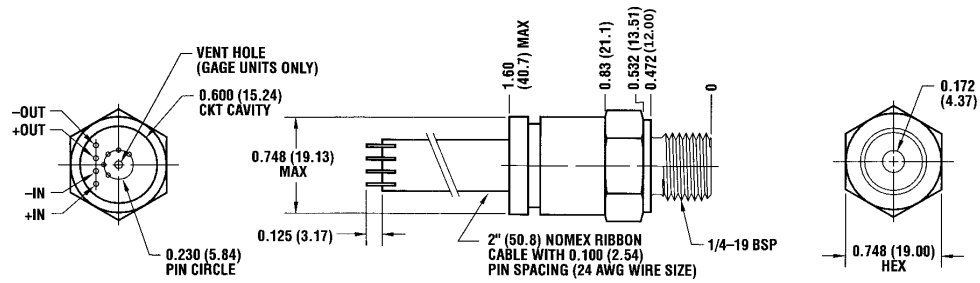
PHYSICAL DIMENSIONS (cont.)

7/16 UNF Fitting (6)



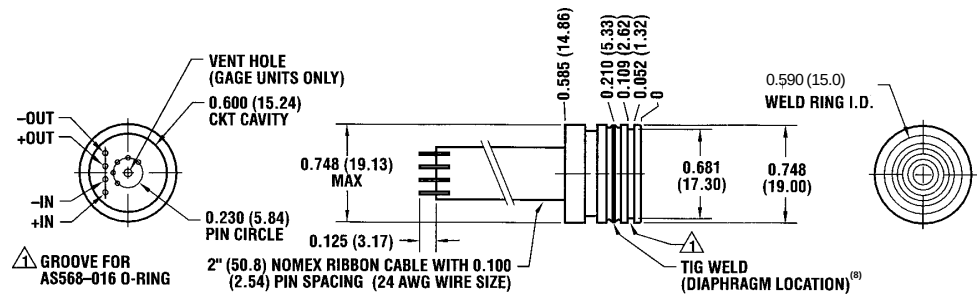
Mass: 47g

1/4 BSP Male Port Package (7)



Mass: 52g

Euro O-Ring Package (8)



Mass: 20 g

Dimensions in inches (mm)

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SPECIFICATION NOTES:

1: Reference conditions (unless otherwise noted): Supply Voltage, V_S = 10 Vdc; t_{amb} = 25°C
2: 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
3: Linearity is based on **B**est fit **S**traight **L**ine. Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
4. Maximum error band of the offset voltage or span over the compensated temperature range of 0-70°C, relative to the 25°C reading.
5: Long term stability over a one year period.
6: Response time for 0 psi to full scale span pressure step change
7: If maximum pressure is exceeded, even momentarily, the package may leak or burst, or the pressure sensing die may fracture.
8: Non-concentricity effects at the diaphragm weld area may cause run out of up ±0.006" (0.15) between the upper and lower portion of the sensor body.(It is recommended that a counter bore be used to allow for the effects of this non-concentricity.)

ORDERING INFORMATION - PART # DESCRIPTION

19 C XXX A,G 1,2...8

19m cell

Compensated Sensor

Pressure Range in PSI

005 = 5 psi (gage only)
015 = 15 psi
030 = 30 psi
050 = 50 psi
100 = 100 psi
200 = 200 psi
500 = 500 psi
1000 = 1000 psi (absolute only)

Pressure Type

A = Absolute
G = Gage

1 = Cell w/ Body O-Ring
2 = Flush Mount
3 = Flush Mount w/ Flange
4 = 1/8 27 NPT
5 = 1/4 18 NPT
6 = 7/16 UNF
7 = 1/4 BSP
8 = Euro O-Ring

For example: Part **#19C100A4** = 19 mm Cell, Compensated, 100 psi, Absolute, 1/8NPT Port

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