

FEATURES

- **0...3 to 0...500 psi and -15...15 to -15...100 psi**
- **Calibrated and temperature compensated**
- **Rugged stainless steel isolated package**
- **Small size**
- **Absolute and gage pressures**
- **Reliable semiconductor technology**

APPLICATIONS

- **Industrial controls**



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.

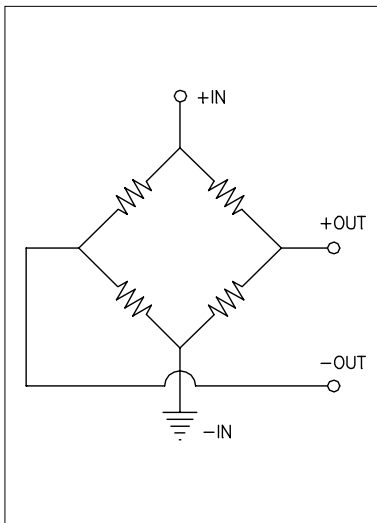
These 19 mm sensors are available for use with either a constant voltage or current source. They feature a variety of pressure connections to allow use in a wide range of OEM equipment.

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.

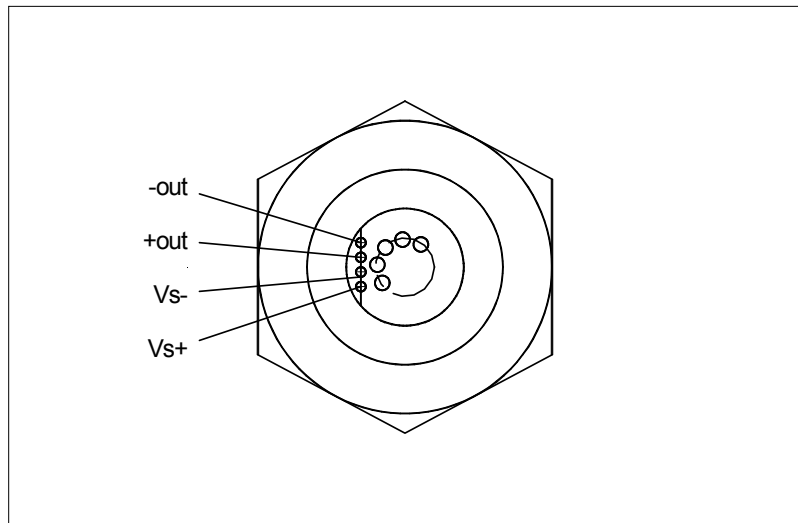


Scale:  1 cm
 1 inch

EQUIVALENT CIRCUIT



ELECTRICAL CONNECTION



PRESSURE SENSOR CHARACTERISTICS (all devices)

Environmental specifications

Temperature ranges:	
Compensated	0 to +82°C
Operating	-40 to +125°C
Storage	-40 to +125°C

Vibration: 10 g at 20 - 2000 Hz

Shock: 100 g for 11 msec

Life: 1 million cycles minimum

Insulation resistance (min.): 100 MΩ at 50 V_{DC}

Maximum ratings

Voltage version „K“: Supply voltage V_S +15 V_{DC}

Current version „L“: Supply current I_S +2.0 mA

PRESSURE RANGE SPECIFICATIONS

SenSym part number	Pressure range	Proof pressure ⁷	Burst pressure ⁸
19C003PG..	0 - 3 psig	9 psig	15 psig
19C005PG..	0 - 5 psig	15 psig	25 psig
19C010PG..	0 - 10 psig	30 psig	45 psig
19C015P(A,G)...	0 - 15 psi	45 psi	75 psig
19C015PV...	-15 to 15 psig	45 psig	75 psig
19C030P(A,G)...	0 - 30 psi	90 psi	150 psi
19C030PV...	-15 to 30 psig	90 psig	150 psig
19C050P(A,G)...	0 - 50 psi	150 psi	250 psi
19C100P(A,G)...	0 - 100 psi	300 psi	300 psi
19C100PV...	-15 to 100 psig	300 psig	300 psig
19C200P(A,G)...	0 - 200 psi	600 psi	1000 psi
19C300P(A,G)...	0 - 300 psi	900 psi	1500 psi
19C500P(A,G)...	0 - 500 psi	1200 psi	2400 psi

PERFORMANCE CHARACTERISTICS¹

Characteristics	Min.	Typ.	Max.	Units	
Zero pressure offset	-2	0	2	mV	
Full scale span ²	48	50	52		
	98	100	102		
Non-linearity ³	---	±0.1	±0.25	%FSO	
Pressure hysteresis ³	---	±0.015	±0.030		
Thermal effects ⁴	Offset	±0.5	±1.0		
	Span	±0.5	±1.0		
Thermal effects (19C003..., 19C005... only) ⁴	Offset	---	±2.0		
	Span	---	±2.0		
Thermal hysteresis (0 to 82°C)	---	±0.1	±0.3		
Repeatability	---	±0.010	±0.030		
Long term stability of offset and span ⁵	---	±0.1	±0.3		
Response time (10 to 90 %)	---	0.1	---	ms	
Input impedance	Current version "L"	2.0	4.5	kΩ	
	Voltage version "K"	8.0	25		50
Output impedance	3.0	4.5	6.0		
Common mode voltage ⁹	Voltage version "K" only	0.5	1.3	2.0	V

Specification notes:

- Reference conditions (unless otherwise noted): supply voltage, $V_s = 10 V_{DC} \pm 0.01 V_{DC}$ („K“-devices) or $I_s = 1.5 \text{ mA} \pm 0.015 \text{ mA}$ („L“-devices); $t_{amb} = 25^\circ\text{C}$.
- 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.
- Linearity is based on **Best fit Straight Line** 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.
- Maximum error band of the offset voltage or span over the compensated temperature range, relative to the 25°C reading.
- Long term stability over a six month period.
- Response time for a step change from the zero pressure to the full scale pressure .
- The maximum pressure that can be applied without changing the transducer's performance or accuracy.
- The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer case.
- Common mode voltage as measured from output to ground.

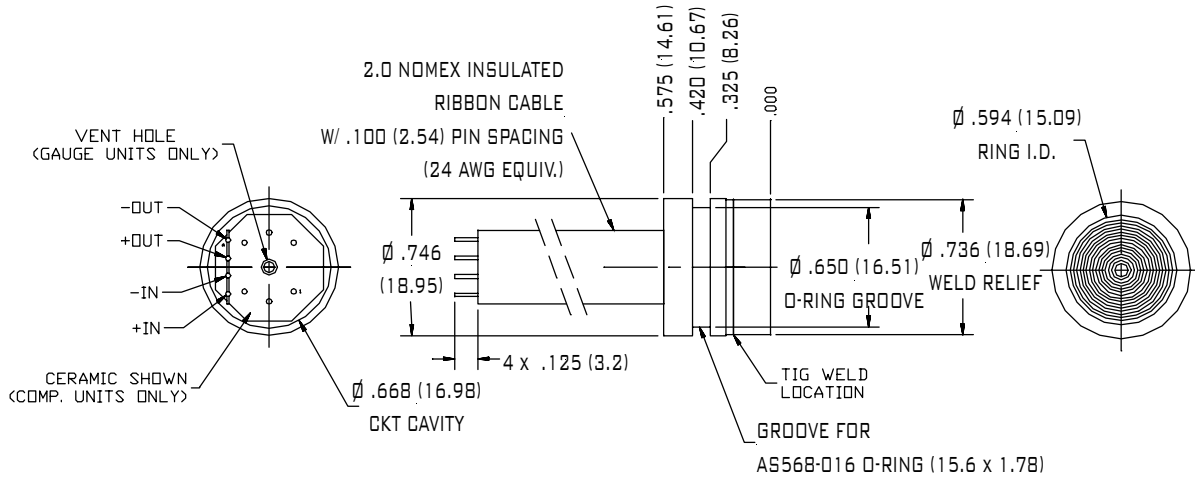
19C...K/L Series



Temp. compensated and calibrated stainless steel pressure sensor

PHYSICAL DIMENSIONS

Cell package (1)



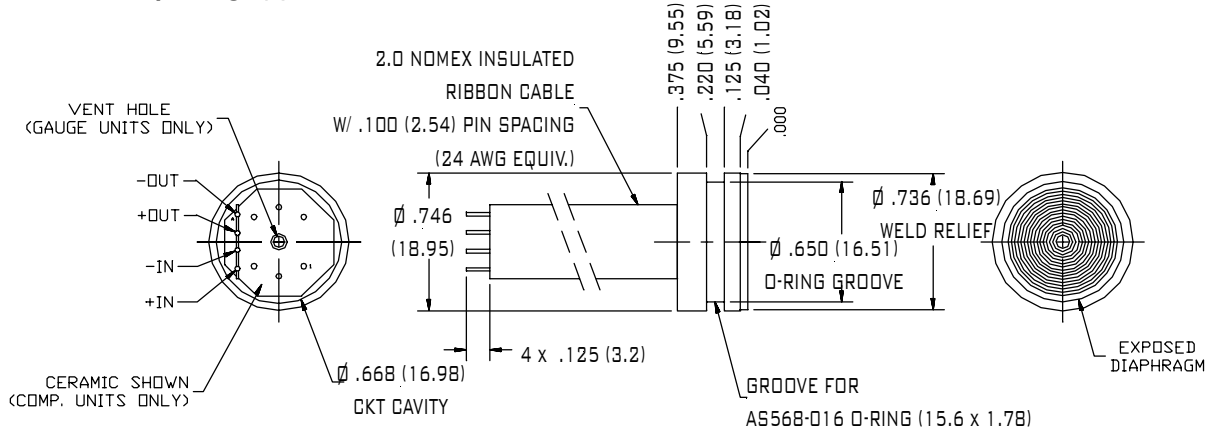
mass: 20 g

Do not touch the diaphragm!

dimensions in inches (mm)

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).

Flush mount package (2)



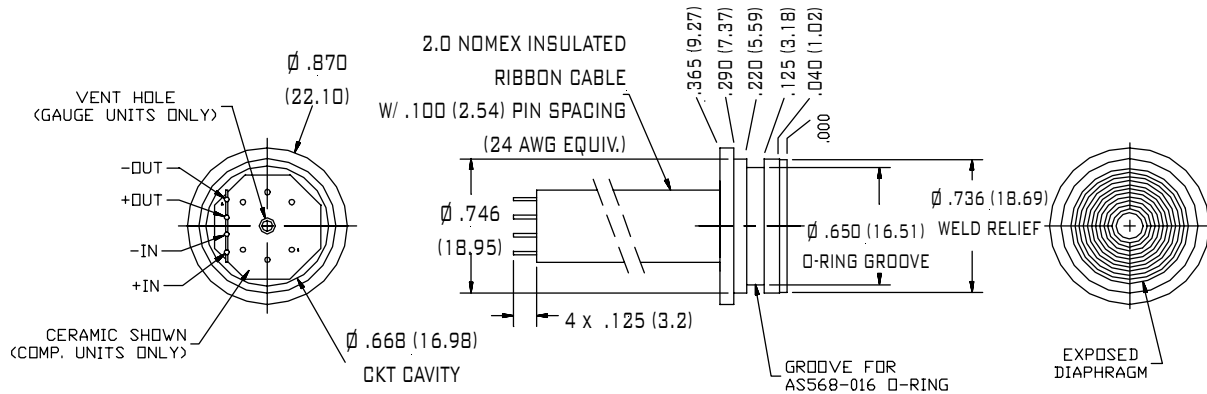
mass: 18 g

Do not touch the diaphragm!

dimensions in inches (mm)

PHYSICAL DIMENSIONS (cont.)

Flush mount with flange package (3)

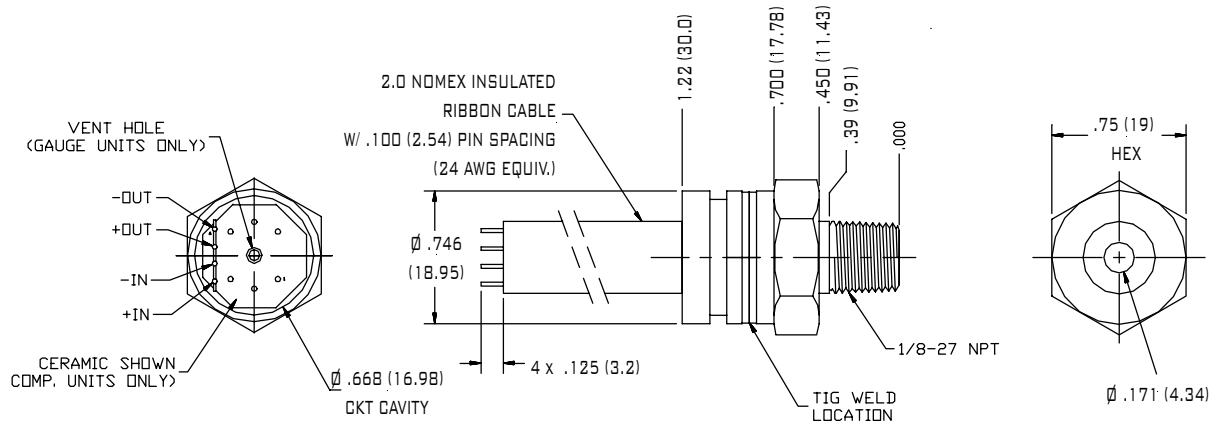


mass: 19 g

Do not touch the diaphragm!

dimensions in inches (mm)

Male 1/8-27 NPT package (4)



mass: 47 g

dimensions in inches (mm)

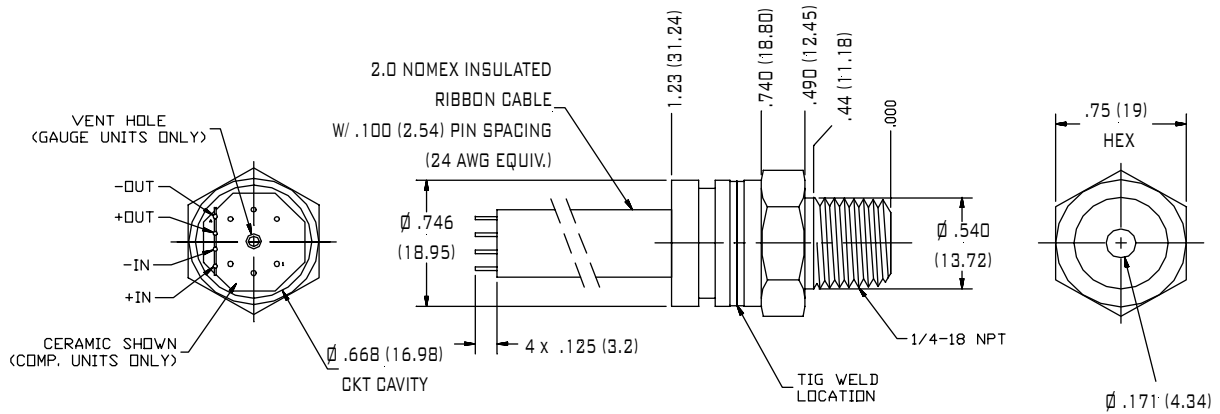
19C...K/L Series



Temp. compensated and calibrated stainless steel pressure sensor

PHYSICAL DIMENSIONS (cont.)

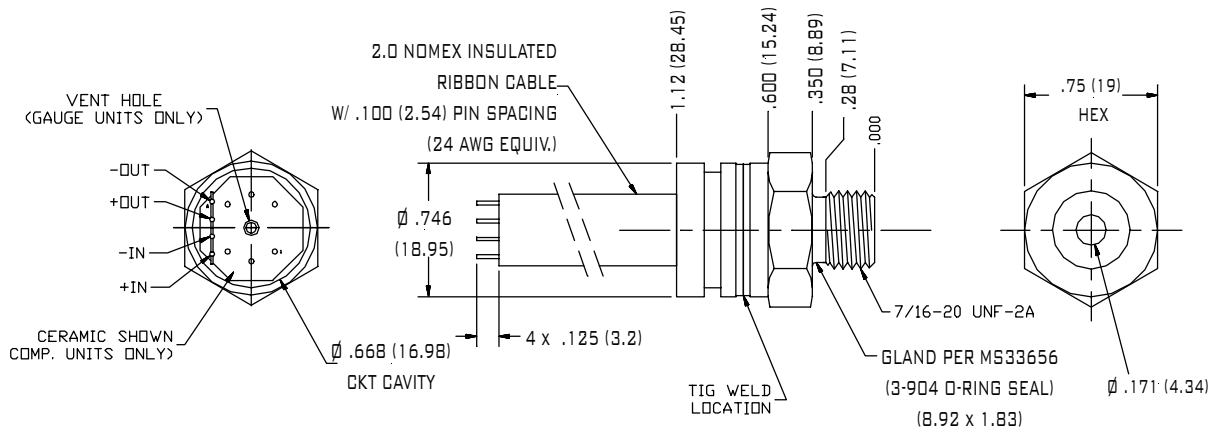
Male 1/4-18" NPT package (5)



mass: 47 g

dimensions in inches (mm)

Male 7/16 UNF package (6)

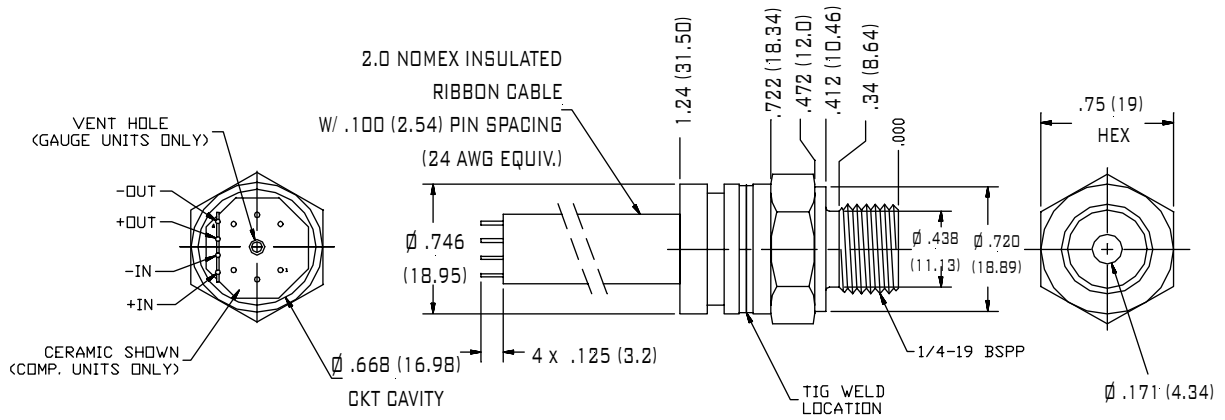


mass: 47 g

dimensions in inches (mm)

PHYSICAL DIMENSIONS (cont.)

Male 1/4 BSP package (7)



mass: 52 g

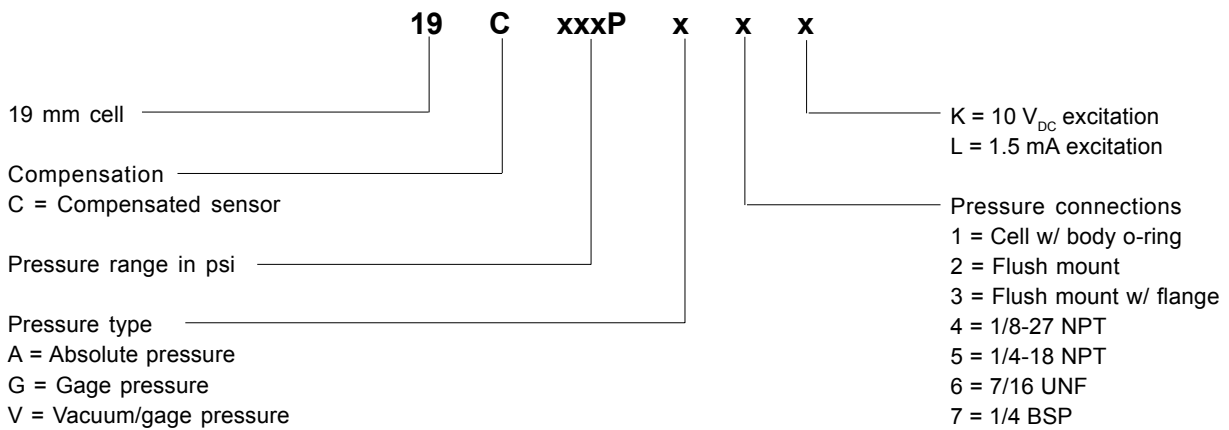
dimensions in inches (mm)

19C...K/L Series



Temp. compensated and calibrated stainless steel pressure sensor

ORDERING INFORMATION - Part number description



For example: part no. **19C100PA4K** = 19 mm cell, compensated, 100 psi, absolute, 1/8NPT port, with 10 V_{DC} excitation

SenSym and Sensortechinics reserve the right to make changes to any products herein. SenSym and Sensortechinics do not assume any liability arising out of the application or use of any product or circuit described herein, neither do they convey any license under their patent rights nor the rights of others.