

| 129CP SERIES

SMART WATER PRESSURE SENSOR

Utilizing Sensata’s industry leading ceramic capacitive technology, the 129CP pressure sensor is housed in a small and innovative package ideal for use in tight spaces. The sensor is robust and reliable to withstand harsh conditions such as water hammer over the life of the sensor and the water pressure sensor uses state of the art electronics to accommodate digital I²C output, low power consumption, fast response time, and end-of-conversion interrupt.

For ease of integration, the flex tail is connected to the PCB and the sensor pressure port is just compressed to an orifice where the water pressure is to be read. The 129CP is ideal for water and other mid pressure applications where low power consumption is essential like use in smart water meters.



Features

- 0-16 bar (0-232 psi) sealed gauge
- 0-230 psi sealed gauge
- Digital I²C output
- Very low power consumption (<6 μ A) at 1Hz measurement
- Small size (18 mm x 23.5 mm x 12.5 mm)
- Easy design integration
- Robust and reliable design
- Compatible with drinking water safe application

Applications

- Residential water meters
- Water networks

● SPECIFICATIONS

Electrical

Supply Voltage	1.7-3.6 VDC
Digital Output	I ² C
Resolution	14 bit min
Supply Current: Update Mode	750 to 1100 μ A
Supply Current: Sleep Mode	0.07 to 1 μ A
Wake-Up Response Time	0.5 ms max
Reverse Voltage	-0.3 VDC
ESD	IEC 61000-4-2
Radiated Immunity	IEC 61000-4-3
Electrical Connection	Flex cable (see dimensions section below)
ESD	Conforms to IEC 61000-4-2 Level 3, 4kV contact / 8kV air

Physical

Pressure Range	0 - 16 bar (0-232 psi)
Pressure Reference	Sealed Gauge
Proof Pressure	2X FS ⁽¹⁾ Pressure
Burst Pressure	5X FS ⁽¹⁾ Pressure
Accuracy (Best Fit Straight Line)⁽²⁾	+/-1%FS ⁽¹⁾ , 25°C
Accuracy (Total Error Band)⁽³⁾	+/-2% FS ⁽¹⁾ , 4 to 40°C
Fluid Compatibility*	Potable Water
Wetted Materials	Sense Element: 96%Alumina (Al2O3) Pressure Port: 304L Stainless Steel Inner Seal: EPDM Outer Seal: EPDM

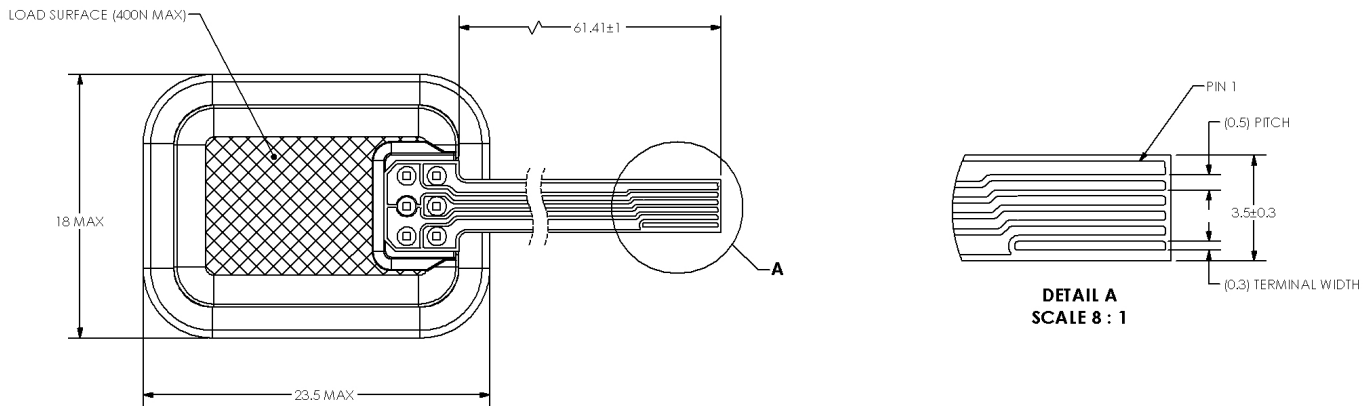
*Other fluid compatibility available upon request

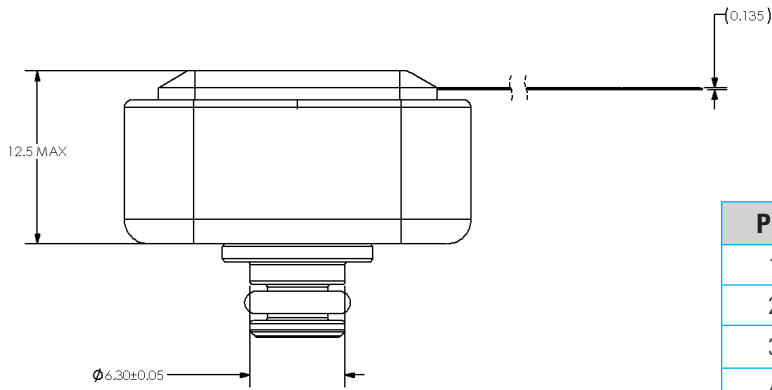
Performance

Random Vibration	DIN IEC 60068-2-27: 5G (2-2kHz)
Mechanical Shock	DIN IEC 60068-2-6: 40G1/2 HL SINE
Operating Temperature	2°C to 85°C
Storage Temperature	-25°C to 85°C
Waterhammer	100K cycles 0 to 25 bar (0 to 360 psi)
Operational Pressure Cycling	1M

DIMENSIONS

Dimensions in mm





Pin	Designation	Description
1	EOC	End-of-conversion and Output Interrupt
2	GND	Ground
3	SDA	Bi-directional data for I ² C
4	SCL	Clock input for I ² C interface
5	VDD	Power supply
6	n.c.	No connection

GENERAL NOTES

- (1) Full Scale Pressure = Pmax - Pmin
- (2) Best fit straight line accuracy includes errors from non-linearity, non-repeatability, and hysteresis
- (3) Total error band accuracy includes errors from non-linearity, non-repeatability, hysteresis, zero offset, full span offset, and thermal effects

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