

XPCM10 High temperature miniature pressure sensor



- Absolute, sealed and gauge ranges
10 to 350 bars [150 to 5 000 psi]
- High Temperature up to 220 °C [428 ° F]
- Stainless steel housing
- High level output in option
- For static and dynamic applications
- High stability

DESCRIPTION

The **XPCM10** is a miniature transducer designed to measure static and dynamic pressures in high temperatures up to 220 ° C [428 ° F] (unamplified models). It is made of stainless steel and available in standard ranges from 0-10 to 0-350 bar [150 up to 5000 psi].

The **XPCM10** incorporates Measurement Specialties' cutting edge SanShift™ technology, which virtually eliminates zero shifts caused by installation torque.

Fitted with metallic strain gauges in a Wheatstone bridge circuit, the **XPCM10** provides excellent temperature stability. It is available in standard ranges from 150 psi up to 5000 psi. An on-board **A1** or **A2** amplifier for high level output is optionally available for all ranges.

With many years of experience as a designer and manufacturer of sensors, Measurement Specialties, Inc. has the expertise to customize and/or design sensors for specific uses and testing environments. To meet your needs we also offer complete turnkey systems. Our conditioning electronics can power the sensor, amplify the electronic signal, and display the data digitally. A turnkey measurement system arrives with matched components, formatted, calibrated and ready for your immediate use.

FEATURES

- Temperature from -75 to 220 ° C [-103 to 428 ° F]
- Low Installation Torque Sensitivity
- M10x1 thread
- Linearity up to ±0.2% F.S.
- For Static and Dynamic Applications

APPLICATIONS

- Aerospace
- Explosion test benches
- Oven monitoring equipment
- Cooling regulation systems
- Laboratory and research

STANDARD RANGES

Range in bar	0-10	0-20	0-35	0-50	0-100	0-200	0-350
Range in psi	0-150	0-300	0-500	0-750	0-1500	0-3000	0-5000

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CHARACTERISTICS

All values are typical at temperature 20±1°C

Parameters		
Operating Temperature Range (OTR)	Without A1/A2 option	-75 to 220 °C [-103 to 428 ° F]
	With A1/A2 option	-55 to 120 °C [-67 to 248 ° F]
Compensated Temperature Range (CTR)	Without A1/A2 option	0 to 150 °C [32 to 302 ° F]
	With A1/A2 option	0 to 100 °C [32 to 212 ° F]
Zero Shift in CTR		<1% F.S. /50 °C [/100 ° F]
Sensitivity Shift in CTR		<1% of reading /50 °C [/100 ° F]
Range (F.S.)		See standard ranges table
Tightening Torque		
Nominal (zero and sensitivity shift <1%)		10 N.m [88 Lbf.in]
Maximal		15 N.m [132 Lbf.in]
Over-Range		
Without Damage		1.5x F.S.
Without Destruction		3x F.S.

Accuracy

Range in bar [in psi]	10 [150]	20 [300]	35 [450]	50 [750]	100 [1 500]	200 [3 000]	350 [4 500]
Linearity (% F.S.)	±0.5	±0.5	±0.3	±0.3	±0.2	±0.2	±0.2
Hysteresis (% F.S.)	±0.3	±0.3	±0.2	±0.2	±0.2	±0.2	±0.2
Repeatability (% F.S.)	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1
Option HA (CN L&H in % F.S.)	±0.5	±0.5	±0.3	±0.3	±0.2	±0.2	±0.2

Electrical Characteristics

Model	XPCM10	XPCM10-A1	XPCM10-A2
Supply Voltage	10 Vdc	10 to 30 Vdc	±15 Vdc (±12 to ±18 Vdc)
F.S. Output ⁶	10 mV typical	4 V ±5% F.S.	5 V ±5% F.S.
Zero Offset ⁶	<±5% F.S.	0.5 V ±5% F.S.	0 V ±5% F.S.
Input Impedance/Consumption	350 Ω	<25 mA	<25 mA
Output Impedance	350 Ω	1 kΩ ⁷	1 kΩ ⁷
Insulation under 50Vdc	≥100 MΩ	≥100 MΩ	≥100 MΩ

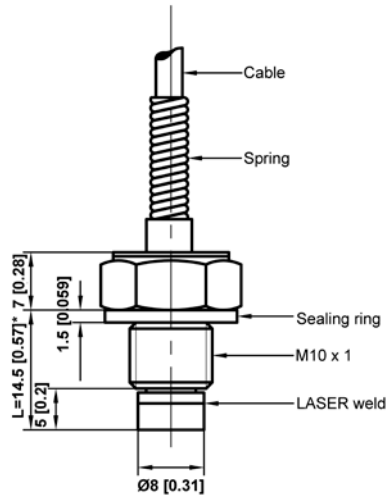
Notes

1. Electrical Termination: Shielded Ø3 mm cable with 4 wires (AWG30), standard length 2.0 m [6.6 ft] with strain relief spring
2. Material: Body and flush diaphragm in stainless steel; laser welded
3. Protection Index: IP50
4. Resonance Frequency: 25-150kHz depending on range
5. Self-centered, sealing ring supplied with the sensor.
6. Standard output signal, custom outputs available on request
7. Output impedance standard, available <100Ω on request.
8. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

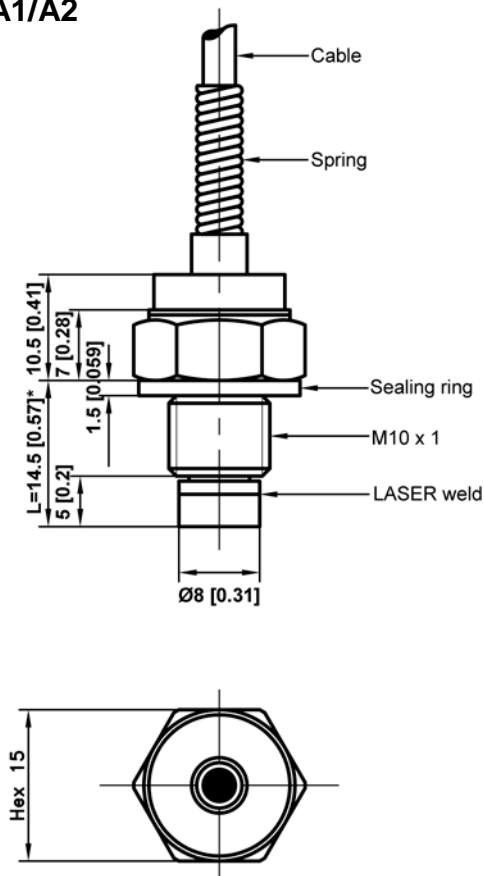
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DIMENSION & WIRING SCHEMATIC (IN METER AND IMPERIAL)

XPCM10

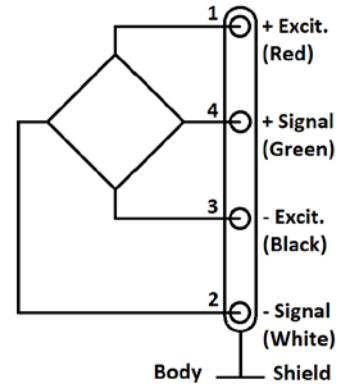


XPCM10-A1/A2

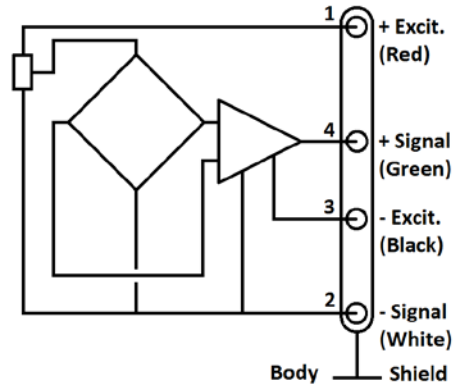


Custom length L = 12 to 50 mm [0.47" to 1.97"] on request.

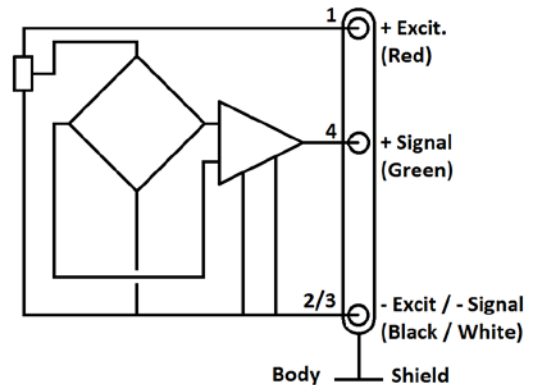
Wiring Schematic



Version -A1



Version -A2

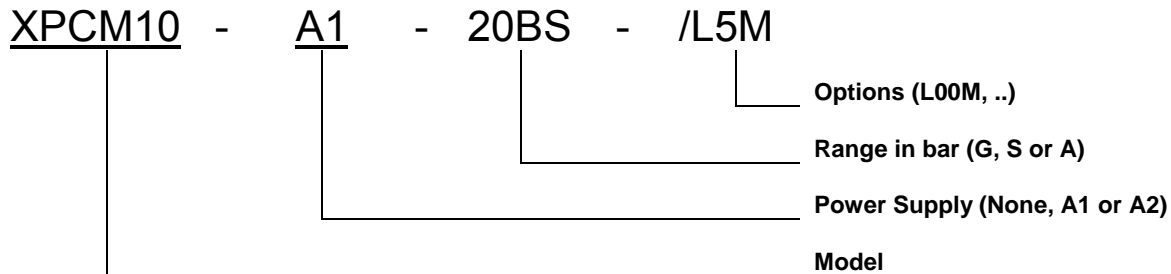


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OPTIONS

A : Absolute
G : Gauge
S : Sealed Gauge
A1 : Amplified Tension output with unipolar power supply (check availability with CTR)
A2 : Amplified Tension output with bipolar power supply (check availability with CTR)
HA : High Accuracy (see table below)
SI : Sensitivity shift in CTR $\leq 1\%$ of reading / 100 ° C [/200 ° F]
ZI : Zero shift in CTR $\leq 1.5\%$ F.S. / 100 ° C [/200 ° F]
ET"X" : Custom CTR between -70 to 200 ° C [-94 to 392 ° F] (check availability with A1 and A2 options)
ET7 : CTR -20 to 120 ° C [-4 to 248 ° F] OTR=CTR (available only with P7 option)
P5 : IP65 protection (available only for Absolute and Sealed Gauge versions)
P7 : IP67 protection (available only for Absolute and Sealed Gauge versions)
L00M : special cable length, replace "00" with total length in meters

ORDERING INFORMATION



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