XPM10 Miniature pressure sensor

- **Absolute, sealed and gauge ranges 1 to 350 bars [15 psi to 5 000 psi]**
- **Stainless steel**
- **High level output in option**
- **4-20 mA 2 wires output on request**
- **For static and dynamic applications**
- **Linearity up to ±0.25% F.S.**

DESCRIPTION

The **XPM10** is a miniature transducer designed to measure static and dynamic pressure under a wide variety of conditions, including hostile environments. It is made of stainless steel or titanium and is available in standard ranges from 0-1 to 350 bars [15 up to 5000 psi].

The **XPM10** incorporates Measurement Specialties' cutting edge SanShiftTM technology, which virtually eliminates zero shifts caused by installation torque.

The **XPM10**'s sensing element is a fully temperature compensated Wheatstone bridge made with high stability micro-machined silicon strain gauges which optimize performance, especially at low ranges and frequencies. An on-board **A1** or **A2** amplifier for high level output is optionally available for all ranges, a 2 wires output 4-20 mA can be build on request. Integrated electrical connector output is also available with SC option.

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

- Flush Diaphragm
- Low Installation Torque Sensitivity
- M10x1 thread
- High Level Tension Output Available
- For Static and Dynamic Applications

APPLICATIONS

- Hydraulic regulation process
- Explosion test benches
- Onboard equipment monitoring
- Breaking system pressure
- Laboratory and research

STANDARD RANGES

Range in bar	0-1	0-2	0-5	0-10	0-20	0-35	0-50	0-100	0-200	0-350
Range in psi	0-15	0-30	0-75	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±1ºC

Parameters	
Operating Temperature Range (OTR)	-40 to 120 º C [-40 to 248 ° F]
Compensated Temperature Range (CTR)	0 to 60 º C [32 to 140 ° F]
Zero Shift in CTR	<2% F.S. /50 º C [/100 ° F] - <3% for 1bar [15psi] model
Sensitivity Shift in CTR	<2% of reading /50 º C [/100 ° F]
Range (F.S.)	See standard ranges table
Tightening Torque	
Nominal (Zero and sensitivity shift <1%)	5 N.m [44 lbf.in] for ≤5 bar [75 psi] models, 10 N.m [88 lbf.in] for other ranges
Maximal	10 N.m [88 lbf.in] for ≤5 bar [75 psi] models, 15 N.m [132 lbf.in] for other ranges
Over-Range	
Without Damage	2x F.S.
Without Destruction	5x F.S.
Accuracy	
Linearity	±0.25% F.S. for ≥ 1bar [15psi] model ±0.35% F.S. for 1bar [15psi] model
Hysteresis	±0.25% F.S.
Repeatability	±0.2%F.S.

Electrical Characteristics

Model	**XPM10**	**XPM10-A1**	**XPM10-A2**
Supply Voltage [7]	10 Vdc	10 to 30 Vdc	±15 Vdc (±12 to ±18 Vdc)
F.S. Output (1 bar models) [6] F.S. Output (≥2bar model)[6]	50 mV 100 mV	4 V ±5% F.S. 4 V ±5% F.S.	5 V ±5% F.S. 5 V ±5% F.S.
Zero Offset	<±10 mV	0.5 V ±5% F.S.	0 V ±5% F.S.
Input Impedance/Consumption	500 to 1500 Ω	<25 mA	<25 mA
Output Impedance	500 to 800 Ω	1 kΩ[8]	1 kΩ[8]
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 or titanium; laser welded
3. Protection Index: IP50
4. Resonance Frequency: 20-200kHz depending on range
5. One Self-centred "FKM" sealing ring Ø 16x2 is supplied with the sensor
6. Standard output signal, custom outputs available on request
7. Standard supply voltage, other supply available on request
8. Output impedance standard, available <100Ω on request.
9. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

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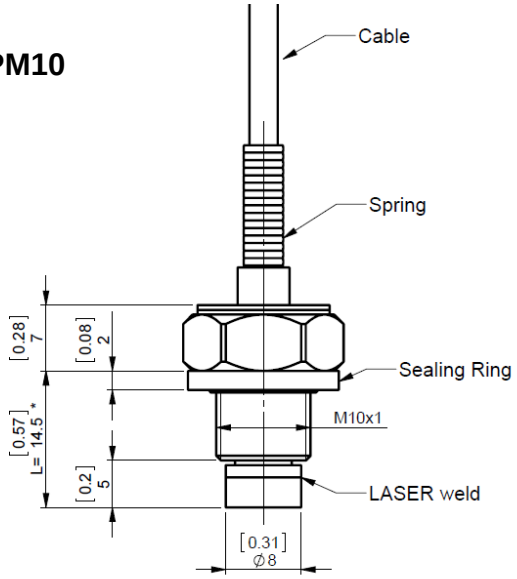
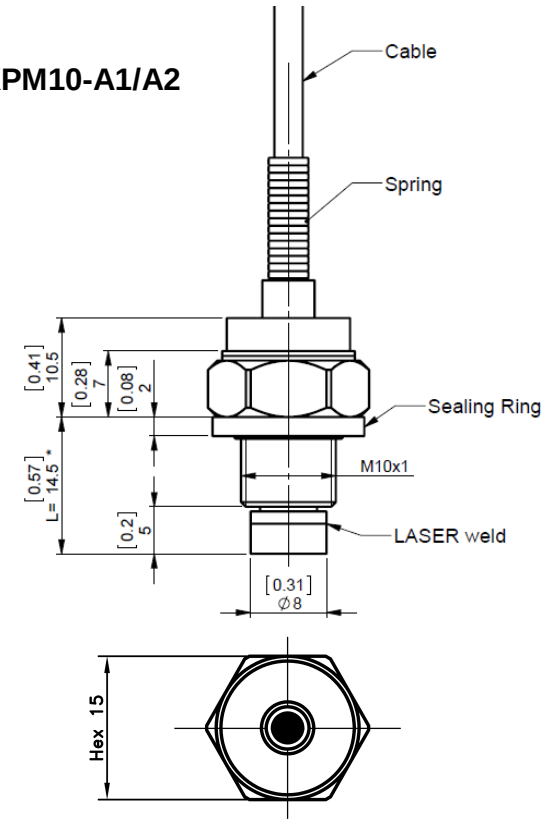
DIMENSION & WIRING SCHEMATIC (IN METER AND IMPERIAL)

XPM10

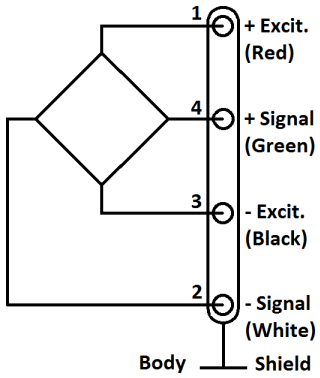


XPM10-A1/A2

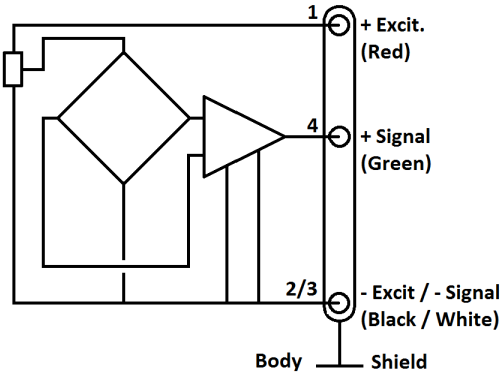


Custom length **L** = 12 to 50 mm [0.47” to 1.97”] on request.

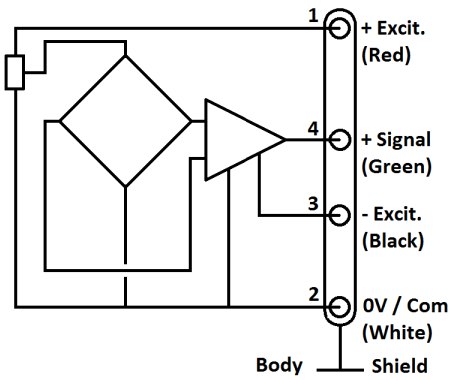
Wiring Schematic



Version -A1



Version -A2



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OPTIONS

A : Absolute
G : Gauge
S : Sealed Gauge
A1 : Amplified Tension output with unipolar power supply
A2 : Amplified Tension output with bipolar power supply
HA : High Accuracy (CN L&H) ≤±0.25% F.S. (≤±0.35% F.S. for 1 bar [15psi] model)
SI : Sensitivity shift in CTR ≤1% of reading / 50 ° C [/100 ° F] (except 1 and 2 bar [15, 30 psi] models)
ZI : Zero shift in CTR ≤1.5% F.S. / 50 ° C [/100 ° F] (except 1 and 2 bar [15, 30 psi] models)
ET1 : CTR -20 to 100 ° C [-4 to 212 ° F]
ET3 : CTR -40 to 150 ° C [-40 to 302 ° F] OTR=CTR (not available with A1, A2 and P7 options)
ET7 : CTR -20 to 120 ° C [-4 to 248 ° F] OTR=CTR (available only when P7 option is requested)
SC : Connector output, prewired, cable length 2 m [6.6 ft]
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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