

XPM10

Miniature pressure sensor

SPECIFICATIONS

- ◆ Ranges 1 to 350 bars [15 psi to 5 000 psi]
- ◆ Absolute, sealed and gauge ranges
- ◆ Amplified output available
- ◆ Linearity up to $\pm 0.25\%$ F.S

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 SanShift™ technology, which virtually eliminates zero shifts caused by installation torque.

A **PT1000** temperature probe is optionally available as a custom design.

The **XPM10** may integrate different electronics for amplified outputs: **A1** 0.5-4.5V, **A2** ± 5 V, **A3** 4-20mA.

On request, Instruction documents can be provided to ease the selection and use of our sensors and provide helpful tips.

FEATURES

- ◆ Stainless steel
- ◆ M10x1 thread
- ◆ For Static and Dynamic Applications
- ◆ Low Installation Torque Sensitivity

APPLICATIONS

- ◆ Hydraulic regulation process
- ◆ Explosion test benches
- ◆ Breaking system pressure
- ◆ Laboratory and research

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STANDARD RANGES

Full Scale (FS)		Pressure Reference			Resonant Frequency	Sensitivity "FSO"	Overpressure	Burst Pressure
bar	psi	Gauge	Abso.	Sealed		(non amplified)	(rated pressure)	(rated pressure)
1	15	*	*	*	30 kHz	5 mV/V	2 x FS	5 x FS
2	30	*	*	*	30 kHz	10 mV/V	2 x FS	5 x FS
5	75	*	*	*	35 kHz	10 mV/V	2 x FS	5 x FS
10	150	*	*	*	50 kHz	10 mV/V	2 x FS	5 x FS
20	300	*	*	*	69 kHz	10 mV/V	2 x FS	5 x FS
35	500	*	*	*	79 kHz	10 mV/V	2 x FS	5 x FS
50	750	*	*	*	109 kHz	10 mV/V	2 x FS	5 x FS
100	1.5K			*	154 kHz	10 mV/V	2 x FS	5 x FS
200	3K			*	218 kHz	10 mV/V	2 x FS	5 x FS
350	5K			*	288 kHz	10 mV/V	2 x FS	3 x FS

Useful frequency is 20% of Resonant Frequency. Bandwidth 3 kHz for amplified model (A1, A2 and A3 option)

PERFORMANCE SPECIFICATIONS (all values are typical at ambient temperature 23±3°C)

Parameters	Non amplified	Amplified A1	Amplified A2	Amplified A3	Notes
Power supply	10 Vdc regulated	10 to 30 Vdc	±12 to ±18 Vdc	10 to 26 Vdc	A3 version uses a 2 wires circuit
Sensitivity "FSO"	Previous table	4 V ±0.2 V	5 V ±0.2 V	16 ±0.4 mA	
Zero Offset	<±1 mV/V	0.5 V ±0.2 V	0 V ±0.2 V	4 ±0.4 mA	
Non Linearity	±0.35%FS ±0.25%FS				FS = 1 bar or 15 psi FS ≥ 2 bar or 30 psi
Hysteresis	±0.25%FS				
Repeatability	±0.2%FS				
Operating Temperature (OTR)	-40 to 120°C (-40 to 250°F)	-40 to 80°C (-40 to 176°F)		-20°C to 80°C (-4°F to 176°F)	
Compensated Temperature (CTR)	0 to 60°C (32 to 140°F)				
Thermal Zero Shift in CTR	±3%FS/50°C ±2%FS/50°C				FS = 1 bar or 15 psi FS ≥ 2 bar or 30 psi
Thermal Sensitivity Shift in CTR	±2% of reading /50°C				
Input Impedance or consumption	500 Ω to 1500 Ω		< 30 mA		
Output Impedance	500 Ω to 800 Ω		1000 Ω		
Ingress Protection	IP50 IP67				Standard or SC P7 option
Media – Pressure Port	Fluids compatible with Stainless steel				

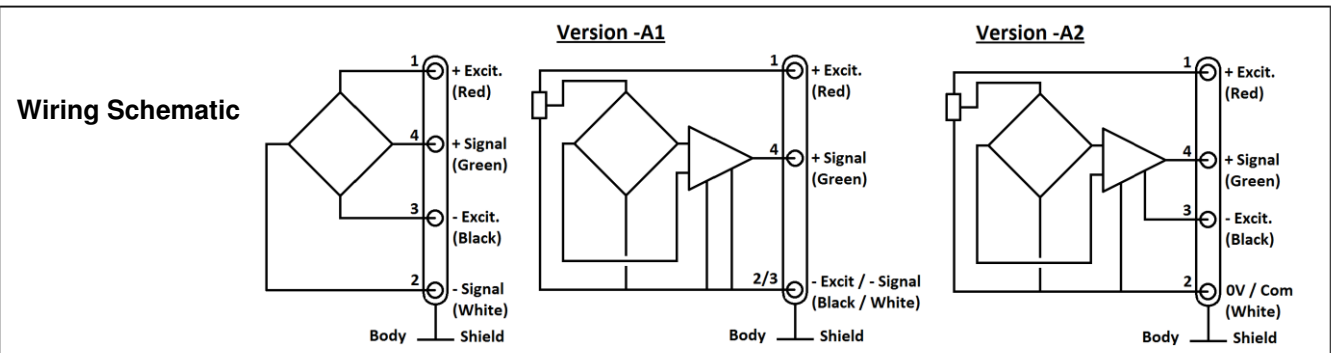
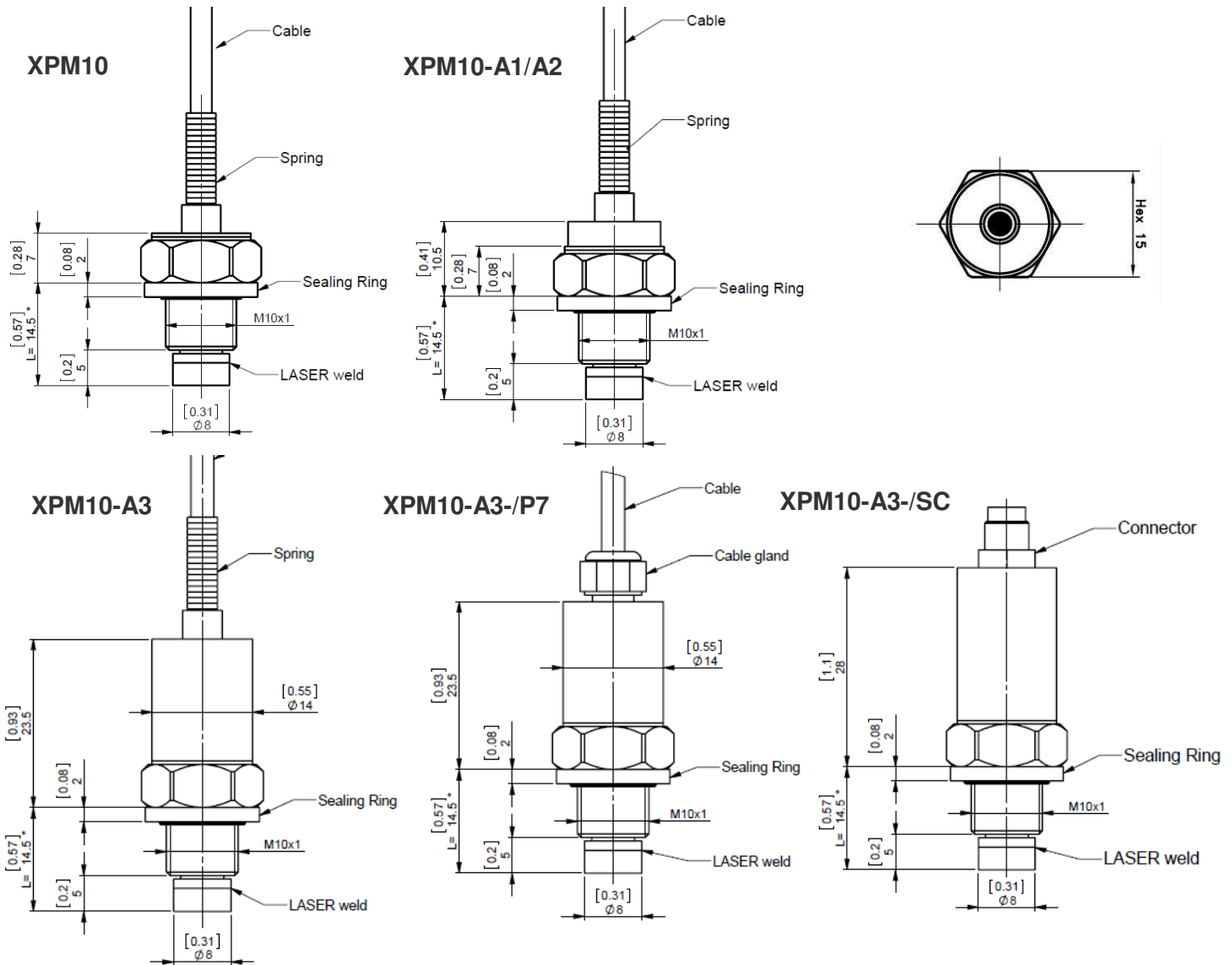
Insulation under 50Vdc ≥100MΩ

CE certification according to EN 61010-1, EN 50081-1, EN 50082-1.

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DIMENSIONS & WIRING SCHEMATIC (METRIC & IMPERIAL)



- Recommended Tightening Torque: 4 to 10 Nm (44 to 88 lbf.in) for FS \leq 5 bar or 75 psi
10 to 15 Nm (88 to 132 lbf.in) for FS \geq 5 bar or 75 psi
- Sealing: One FKM ring $\Phi 16 \times 2$ is supplied with sensor. Operating temperature is -30°C to 200°C [-20°F to 390°F] static
- Electrical connection: Standard = 2m of shielded cable $\Phi 3\text{mm}$ with 4 wires AWG30, Silicon jacket
SC option = Integral connector ref. OMNETICS CMR-02D-04P supplied with mating plug CMR-02-B-04S wired with 2m of cable (FMC-COM-4B-L2M)

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OPTIONS

HA : High Accuracy (CN L&H) $\leq \pm 0.25\%$ F.S. ($\leq \pm 0.35\%$ F.S. for 1 bar [15psi] model)
SI : Sensitivity shift in CTR $\leq 1\%$ of reading / $50\text{ }^\circ\text{C}$ [$100\text{ }^\circ\text{F}$] (except 1 and 2 bar [15, 30 psi] models)
ZI : Zero shift in CTR $\leq 1.5\%$ F.S. / $50\text{ }^\circ\text{C}$ [$100\text{ }^\circ\text{F}$] (except 1 and 2 bar [15, 30 psi] models)
ET1 : CTR -20 to $100\text{ }^\circ\text{C}$ [-4 to $212\text{ }^\circ\text{F}$]
ET3 : CTR -40 to $150\text{ }^\circ\text{C}$ [-40 to $302\text{ }^\circ\text{F}$] OTR=CTR (not available with A1, A2, A3 and P7 options)
ET5 : CTR -40 to $80\text{ }^\circ\text{C}$ [-40 to $176\text{ }^\circ\text{F}$] OTR=CTR (not available with A1, A2, A3 and P7 options)
ET7 : CTR -20 to $120\text{ }^\circ\text{C}$ [-4 to $248\text{ }^\circ\text{F}$] 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 (standard length 2,0 m [6,6 ft])

ORDERING INFORMATION

XPM10	-	A1	-	20B	G	-	/L5M
Model	-	Output signal	-	Pressure Range	Pressure reference	-	Options
XPM10		(none) : bridge (mV) A1 : 0,5 to 4,5V A2 : 0 to 5V A3 : 4 to 20 mA		1B 2B 5B 10B 20B 35B 50B 100B 200B 350B	A : absolute G : gauge S : sealed		/HA /SI /ZI /ET1 /ET3 /ET5 /ET7 /SC /P5 /P7 /L00M

The sensor ordering codes uses only bar as units because **XPM10** uses metric threads. Psi value correspondence is noted as information.