

## 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**  $\pm 5$ 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				

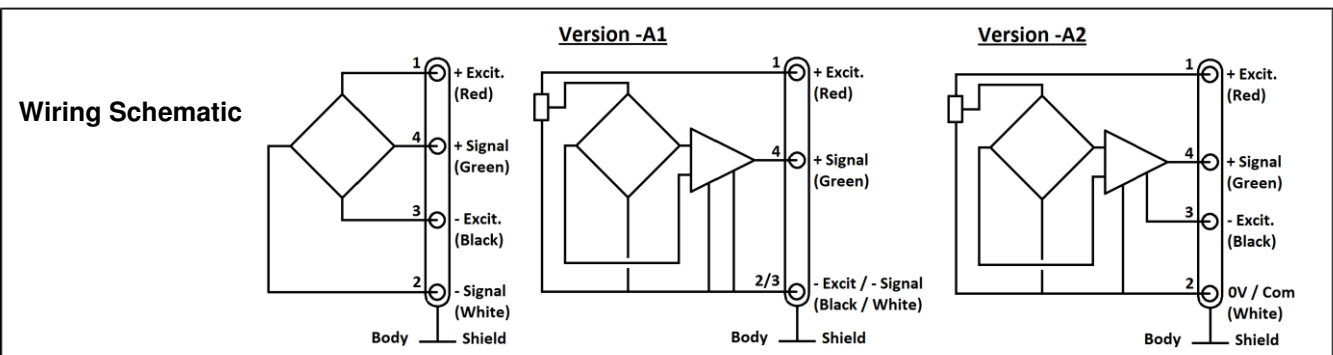
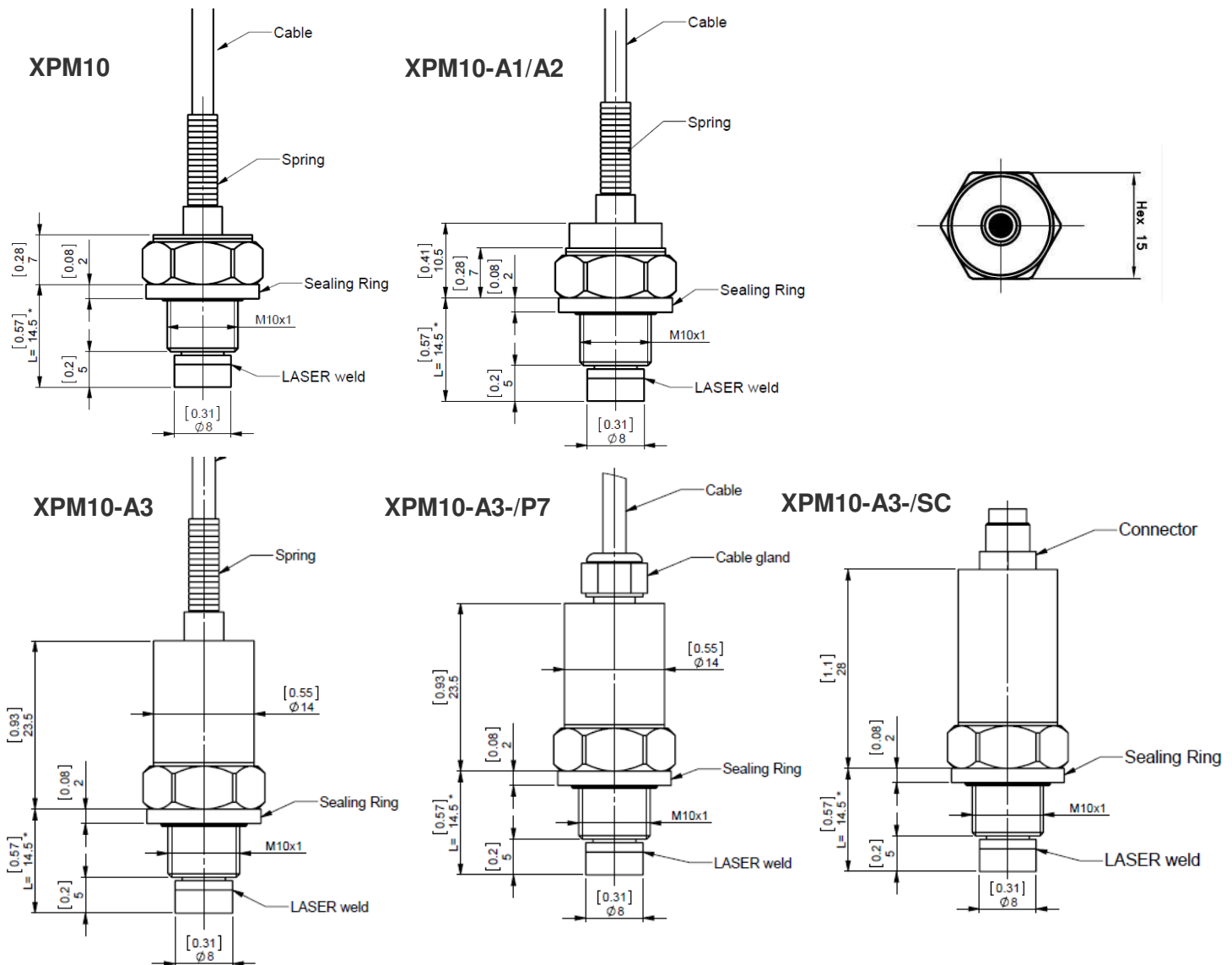
Insulation under 50Vdc ≥100MΩ

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 ≤ 5 bar or 75 psi  
10 to 15 Nm (88 to 132 lbf.in) for FS ≥ 5 bar or 75 psi
- Sealing: One FKM ring  $\varnothing$  16x2 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  $\varnothing$  3mm 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

<b>HA</b> : High Accuracy (CN L&H) $\leq \pm 0.25\%$ F.S. ( $\leq \pm 0.35\%$ F.S. for 1 bar [15psi] model)
<b>SI</b> : 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)
<b>ZI</b> : 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)
<b>ET1</b> : CTR $-20$ to $100\text{ }^\circ\text{C}$ [ $-4$ to $212\text{ }^\circ\text{F}$ ]
<b>ET3</b> : 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)
<b>ET5</b> : 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)
<b>ET7</b> : CTR $-20$ to $120\text{ }^\circ\text{C}$ [ $-4$ to $248\text{ }^\circ\text{F}$ ] OTR=CTR (available only when P7 option is requested)
<b>SC</b> : Connector output, prewired, cable length 2 m [6.6 ft]
<b>P5</b> : IP65 protection (available only for Absolute and Sealed Gauge versions)
<b>P7</b> : IP67 protection (available only for Absolute and Sealed Gauge versions)
<b>L00M</b> : special cable length, replace "00" with total length in meters (standard length 2,0 m [6,6 ft])

### ORDERING INFORMATION

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

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