

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
- Linearity up to $\pm 0.25\%$ F.S
- For static and dynamic applications
- Optional IP67 Ingress Protection



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 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** $\pm 5V$, **A3** 4-20mA.

Do not hesitate to discuss with your local MEAS contact for any details or information.

FEATURES

- Flush Diaphragm
- M10x1 thread
- For Static and Dynamic Applications
- Low Installation Torque Sensitivity

APPLICATIONS

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

STANDARD RANGES

Full Scale (FS)		Referencial pressure			Linearity (%FS)	Hysteresis (%FS)	Repeatability (%FS)
bar	psi	Absolute	Gauge	Sealed			
1	15	•	•	•	$\pm 0.35\%$	$\pm 0.25\%$	$\pm 0.2\%$
2	30	•	•	•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$
5	75	•	•	•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$
10	150	•	•	•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$
20	300	•	•	•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$
35	500	•	•	•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$
50	750	•	•	•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$
100	1.5K			•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$
200	3K			•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$
350	5K			•	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.2\%$

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

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TEMPERATURE CHARACTERISTICS

Full Scale (FS)		Operating Temperature Range (OTR)		Compensated Temperature Range (CTR)		ZeroShift in CTR	Sensitivity Shift in CTR
bar	psi	Celsius	Fahrenheit	Celsius	Fahrenheit	/50°C	/50°C
1	15	-40 to 120°C	-40 to 250°F	0 to 60°C	32 to 140°F	< ±3%FS	< ±2%
2	30					< ±2%FS	
5	75					< ±2%FS	
10	150					< ±2%FS	
20	300					< ±2%FS	
35	500					< ±2%FS	
50	750					< ±2%FS	
100	1.5K					< ±2%FS	
200	3K					< ±2%FS	
350	5K					< ±2%FS	

Temperature notes

For sensor which integrated the A1/A2 amplifier: OTR = -40°C to 120°C [-40°F to 250°F], CTR = 0 to 60° C [32°F to 140°F]
 For sensor which integrated the A3 amplifier: OTR = -20°C to 80°C [-4°F to 176°F], CTR = 0 to 60°C [32 °F to 140°F]

MECHANICAL CHARACTERISTICS

Full Scale (FS)		Pressure limit		Tightening Torque		Max. tightening Torque	
bar	psi	Without damage	Without destruction	N.m	lbf.in	N.m	lbf.in
1	15	2x FS	5x FS	5	44	10	88
2	30			5	44	10	88
5	75			5	44	10	88
10	150			10	88	15	132
20	300			10	88	15	132
35	500			10	88	15	132
50	750			10	88	15	132
100	1.5K			10	88	15	132
200	3K			10	88	15	132
350	5K			10	88	15	132

Notes

1. Material: Body and flush diaphragm in stainless steel; laser welded. A titanium construction is on request.
2. One Self-centred "FKM" sealing ring Ø 16x2 is supplied with the sensor. Operating temperature is -30°C to 200°C [-20°F to 390°F] static.
3. Specific threads lengths on request.
4. Protection Index: IP50
5. Electrical Termination: Shielded Ø3 mm cable with 4 wires (AWG30)

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ELECTRICAL SPECIFICATIONS

NON-AMPLIFIED VERSION

Full Scale (FS)		Frequency response	Power supply	Full Scale Output (FSO)	Offset	Input Impedance Ze	Output Impédance Zs
bar	Psi						
1	15	30 kHz	10 Vdc	50 mV	< ±10mV	500 to 1500 Ω	500 to 800 Ω
2	30	30 kHz		100 mV			
5	75	35 kHz		100 mV			
10	150	50 kHz		100 mV			
20	300	69 kHz		100 mV			
35	500	79 kHz		100 mV			
50	750	109 kHz		100 mV			
100	1.5K	154 kHz		100 mV			
200	3K	218 kHz		100 mV			
350	5K	288 kHz		100 mV			

AMPLIFIED VERSION (A1)

Full Span (FS)		Bandwidth	Power supply	Full Scale Output (1) (FSO)	Offset	Consumption	Output Impédance Zs (2)
bar	Psi						
All ranges		3 kHz	10 to 30 Vdc	4 ±0.2V	0.5 ±0.2V	< 30 mA	1 000 Ω

AMPLIFIED VERSION (A2)

Full Span (FS)		Bandwidth	Power supply	Full Scale Output (1) (FSO)	Offset	Consumption	Output Impédance Zs (2)
bar	Psi						
All ranges		3 kHz	±15 Vdc (±3 Vdc)	5 ±0.2V	0 ±0.2V	< 30 mA	1 000 Ω

AMPLIFIED VERSION (A3)

Full Span (FS)		Bandwidth	Power supply	Full Scale Output (3) (FSO)	Offset	Consumption	Output Impédance Zs (2)
bar	Psi						
All ranges		-	10 to 26 Vdc	16 ±0.4mA	4 ±0.4mA	< 30 mA	1 000 Ω

Notes

All values are typical at temperature 20±1°C.

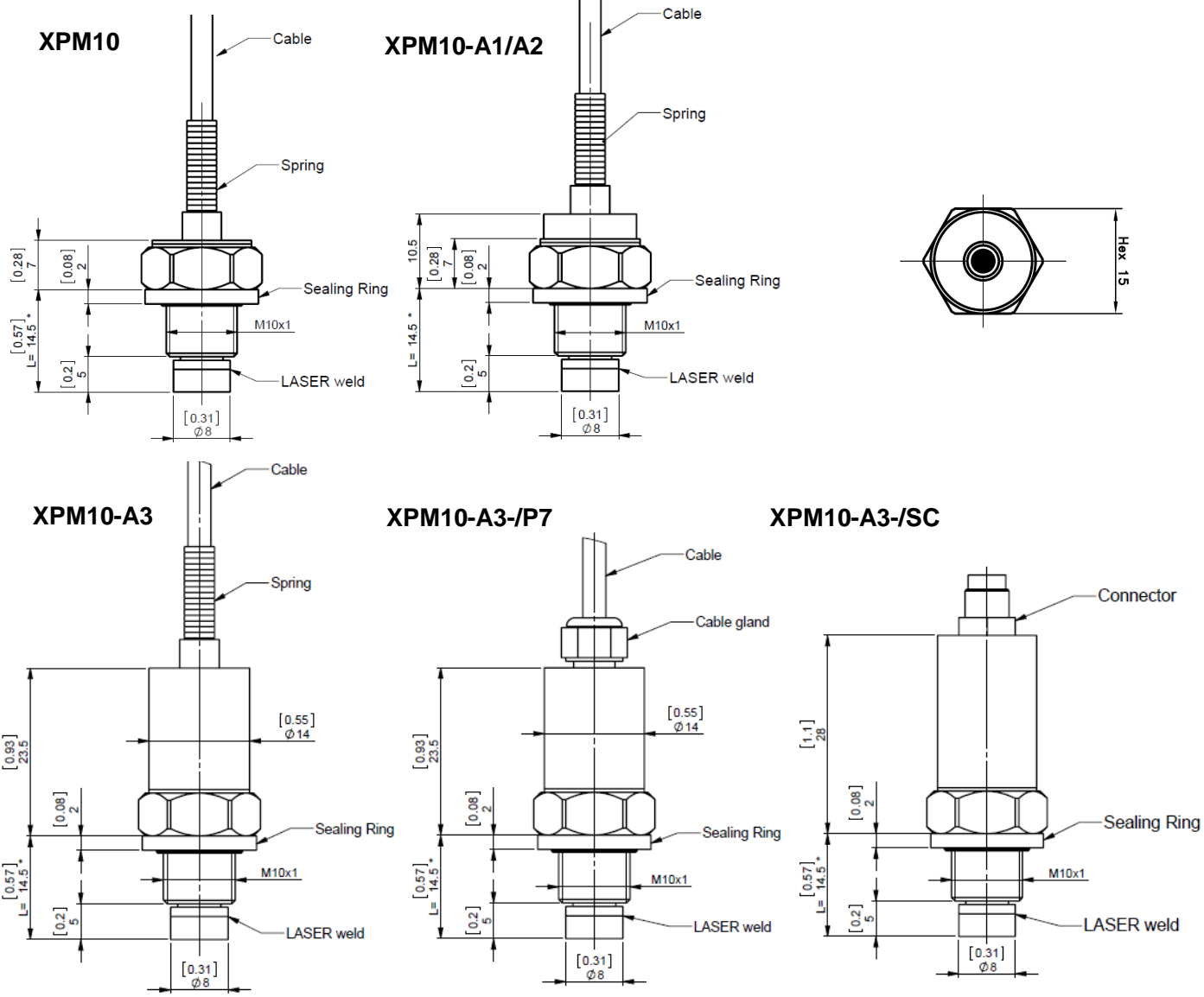
Insulation under 50Vdc ≥100MΩ

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

1. Signal outputs 0.5 to 9.5Vdc for A1 and ±10Vdc for A2 on request as custom product.
2. Output impedance standard 1kΩ, available <100Ω on request.
3. A3 amplifier option uses a 2 wires circuit.

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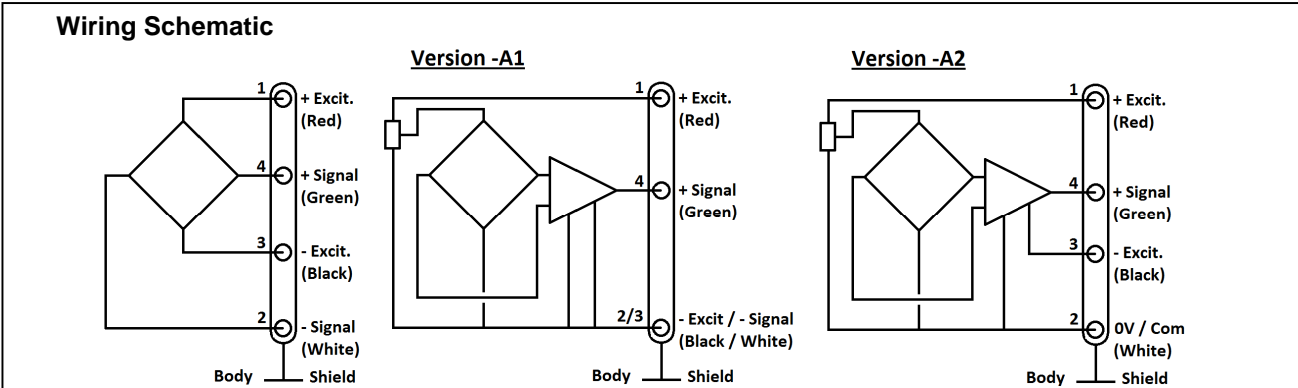
DIMENSIONS & WIRING SCHEMATIC (metric & imperial)



Integral connector (SC option):

Base ref. **CMR-02D-04P**

Supplied Accessories: mating plug **CMR-02-B-04S** with 2m cable ref. **FMC-COM-4B-L2M**



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OPTIONS

A1 : Amplified Tension output with unipolar power supply
A2 : Amplified Tension output with bipolar power supply
A3 : Amplified Current output with 2 wires (OTR: -40 to 80°C)
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 °C [100 °F] (except 1 and 2 bar [15, 30 psi] models)
ZI : Zero shift in CTR $\leq 1.5\%$ 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, A3 and P7 options)
ET5 : CTR -40 to 80 °C [-40 to 176 °F] OTR=CTR (not available with A1, A2, A3 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 (standard length 2,0 m [6,6 ft])

ORDERING INFORMATION

XPM10 - A1 - 20 B G - /L5M

