

XPC10 High temperature miniature pressure sensor



- Absolute, sealed and gauge ranges 10 to 500 bar [150 to 7 500 psi]
- High temp. operation from -40 up to 220 °C [-40 to 428 °F]
- Stainless steel construction
- Amplified output available
- For static and dynamic applications
- Optional IP67 Ingress Protection

DESCRIPTION

The **XPC10** is a miniature pressure transducer specifically designed to measure static and dynamic pressures in temperatures from -40 to 220 °C [-40 °F to 428 °F] (unamplified models). Constructed of stainless steel, the rugged XPC10 is suitable for corrosive liquids and gases in a wide variety of harsh environments. For ease of installation and long term performance, this miniature pressure sensor incorporates Measurement Specialties' cutting edge SanShift™ technology that eliminates zero shifts caused by installation torque. The core technology of the **XPC10** consists of a foil strain gage wired in a Wheatstone bridge circuit to provide excellent temperature stability.

An on-board amplifier is optionally available (**A1**) for all ranges.

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

FEATURES

- Low Installation Torque Sensitivity
- M10x1 or 3/8-24UNF thread
- Linearity up to $\pm 0.25\%$ F.S.
- For Static and Dynamic Applications

APPLICATIONS

- Aerospace
- Test benches
- Oven monitoring equipment
- Cooling regulation systems

STANDARD RANGES

Full Scale (FS)		Referencial pressure			Linearity & Hysteresis combined (%FS)
bar	psi	Absolute	Gauge	Sealed	
10*	150	•	•	•	$\pm 0.5\%$
20	300	•	•	•	$\pm 0.3\%$
35	500	•	•	•	$\pm 0.3\%$
50	750	•	•	•	$\pm 0.3\%$
70	1K	•	•	•	$\pm 0.3\%$
100	1.5K			•	$\pm 0.25\%$
200	3K			•	$\pm 0.25\%$
350	5K			•	$\pm 0.25\%$
500	7.5K			•	$\pm 0.25\%$

The **psi** range models are only supplied with imperial thread design.

The **bar** range models are only supplied with metric thread design.

*Lower pressure range 5 bar [75 psi] on request as custom design.

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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
10	150	-40 to 220°C	-40 to 428°F	0 to 150°C	32 to 300°F	< ±1%FS	< ±1%
20	300						
35	500						
50	750						
70	1K						
100	1.5K						
200	3K						
350	5K						
500	7.5K						

Temperature notes

For sensor which integrated the A1 amplifier: OTR = -40°C to 120°C [-40°F to 250°F], CTR = 0 to 80°C [32°F to 170°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
10	150	1.5x FS	3x FS	5	44	10	88
20	300						
35	500						
50	750						
70	1K						
100	1.5K						
200	3K						
350	5K						
500	7.5K						

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; down to -40°C to 220°C [-40°F to 428°F] for short durations.
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 resonance	Power supply	Full Scale Output (FSO)	Offset	Input Impedance Ze	Output Impédance Zs
bar	psi						
10	150	34 kHz	10 Vdc	12 mV	< ±0.5mV	500 Ω	350 Ω
20	300	50 kHz					
35	500	70 kHz					
50	750	80kHz					
70	1K	95 kHz					
100	1.5K	110 kHz					
200	3K	155 kHz					
350	5K	220 kHz					
500	7.5K	250 kHz					

AMPLIFIED VERSION (A1)

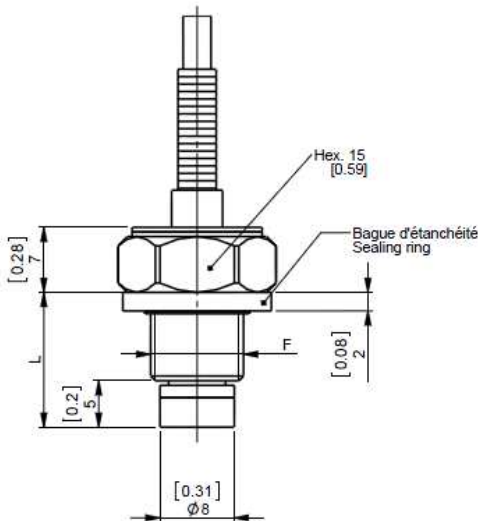
Full Span (FS)		Bandwidth	Power supply	Full Scale Output (FSO) (2)	Offset	Consumption	Output Impédance Zs (5)
bar	psi						
10	150	600 Hz	10 to 30Vdc	4 ±0.2V	0.5 ±0.2V	<50 mA	1 000 Ω
20	300						
35	500						
50	750						
70	1K						
100	1.5K						
200	3K						
350	5K						
500	7.5K						

Notes

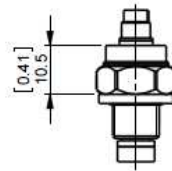
1. All values are typical at temperature 20±1°C.
2. Output signal : 0.5 to 4.5Vdc for A1 option.
3. Standard output signal, custom outputs available on request.
4. Insulation under 50Vdc ≥100MΩ
5. Output impedance standard 1kΩ, available <100Ω on request.
6. CE certification according to EN 61010-1, EN 50081-1, EN 50082-1.

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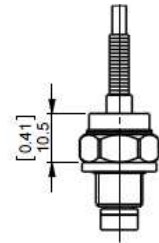
DIMENSIONS & WIRING SCHEMATIC



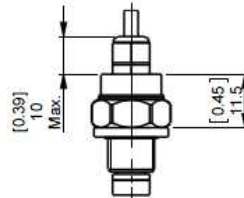
XPC10



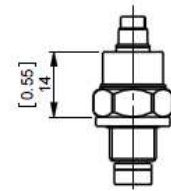
XPC10*-SC



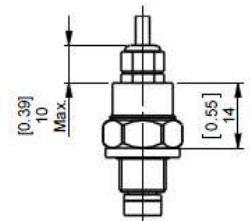
XPC10*-A1



XPC10*-P7



XPC10*-A1-SC



XPC10*-A1-P7

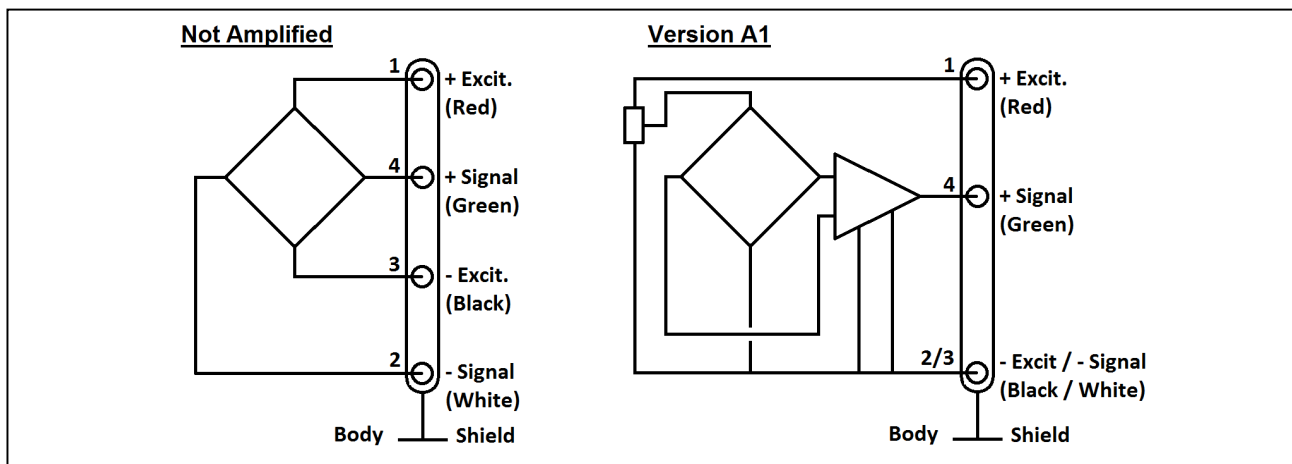
Dimensions Metric & Imperial

	XPC10-M	XPC10-X
F (thread)	M10x1	3/8-24UNF
L (mm)	14.5	13.1
L (in)	[0.57]	[0.52]

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

ZI : Zero shift in CTR <0.75% F.S. / 50 °C [/100 °F]
Z02 : CTR -40 to 60 °C [-40 to 140 ° F]
Z35 : CTR 20 to 120 °C [70 to 250 ° F]
Z38 : CTR +20°C à +200°C [70 to 390°F] (not compatible with A1 and P7 option)
SC : Connector output, mating plug supplied with 2 m cable [6.6 ft]
P7 : IP67 protection / -20°C to +150°C [0°F to 300°F] (not compatible with gauge model)
L00M : special cable length, replace "00" with total length in meters (standard length 2,0 m [6,6 ft])

ORDERING INFORMATION

XPC10 - M - A1 - 20 B G - /L5M

