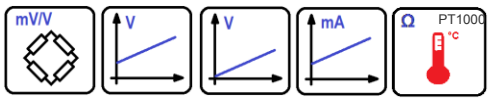



# XPM10

## M10x1 Low Mass Miniature pressure sensor

## FEATURES

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

## APPLICATIONS

- Hydraulic regulation process
- Explosion test benches
- Brake Systems
- Laboratory and research

## SPECIFICATIONS

- Ranges 1 to 350 bar [15 psi to 5,000 psi]
- Absolute, sealed and gauge ranges
- Amplified output available
- Linearity up to ±0.25% F.S
- Very low mass, approximately 20 grams without cable (dependent on options)

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 a specific feature, which minimizes 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 ±5V, A3 4-20mA.

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

## STANDARD RANGES

| Full Scale (FS) | | Pressure Reference | | | Resonant Frequency | Sensitivity "FSO" | Overpressure | Burst Pressure |
|---|---|---|---|---|---|---|---|---|
| bar | psi | Gauge | Absolute | Sealed | | (non amplified) | (rated pressure) | (rated pressure) |
| 1 | 15 | • | • | • | 32 kHz | 50 mV | 2 x FS | 5 x FS |
| 2 | 30 | • | • | • | 32 kHz | 100 mV | 2 x FS | 5 x FS |
| 5 | 75 | • | • | • | 35 kHz | 100 mV | 2 x FS | 5 x FS |
| 10 | 150 | • | • | • | 50 kHz | 100 mV | 2 x FS | 5 x FS |
| 20 | 300 | • | • | • | 69 kHz | 100 mV | 2 x FS | 5 x FS |
| 35 | 500 | • | • | • | 79 kHz | 100 mV | 2 x FS | 5 x FS |
| 50 | 750 | • | • | • | 109 kHz | 100 mV | 2 x FS | 5 x FS |
| 100 | 1.5K | | | • | 154 kHz | 100 mV | 2 x FS | 5 x FS |
| 200 | 3K | | | • | 218 kHz | 100 mV | 2 x FS | 5 x FS |
| 350 | 5K | | | • | 288 kHz | 100 mV | 2 x FS | 3 x FS |

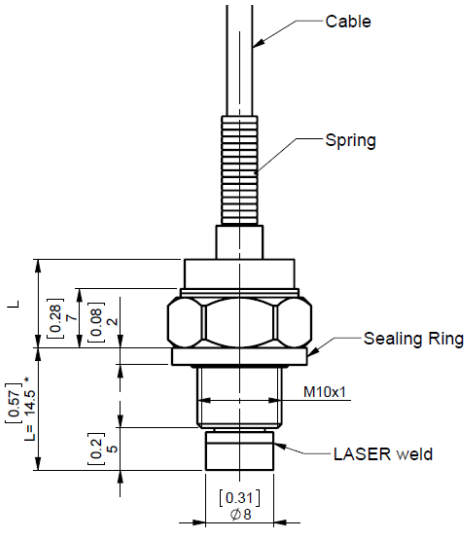
**Notes**: 1. The suggested frequency of use is 20% of the resonant frequency
2. The bandwidth for versions with A1, A2 and A3 electronics is 3kHz.
3. Sensor characterized with a 10 VDC supply voltage as standard
4: The sensitivity "FSO" has a tolerance of -30% to +50%.

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

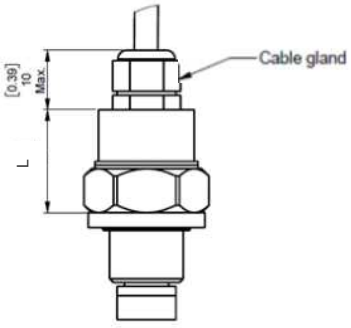
| Parameters | Non amplified | Amplified A1 | Amplified A2 | Amplified A3 | Notes |
|---|---|---|---|---|---|
| Power supply | 10 Vdc regulated | 10 to 30 Vdc | ±12 to ±18 Vdc | 10 to 26 Vdc | A3 version uses a 2 wires circuit |
| Sensitivity "FSO" | Previous table | 4 V ±0.2 V | 5 V ±0.25 V | 16 ±0.4 mA | |
| Zero Offset | <±10 mV | 0.5 V ±0.2 V | 0 V ±0.25 V | 4 ±0.4 mA | |
| Non Linearity | ±0.5%FS<br>±0.25%FS | | | | FS ≤ 2 bar or 30 psi<br>FS ≥ 5 bar or 75 psi |
| Hysteresis | ±0.25%FS | | | | |
| Repeatability | ±0.2%FS | | | | |
| Operating Temperature (OTR) | -40 to 150°C<br>(-40 to 302°F) | -40 to 120°C<br>(-40 to 250°F) | | -20°C to 80°C<br>(-4°F to 176°F) | |
| Compensated Temperature (CTR) | 0 to 60°C<br>(32 to 140°F) | | | | |
| Thermal Zero Shift in CTR | ±3%FS/50°C<br>±2%FS/50°C | | | | FS = 1 bar or 15 psi<br>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<br>IP67 (consult factory for IP68) | | | | Standard or SC<br>P7 or P7-SC |
| 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.

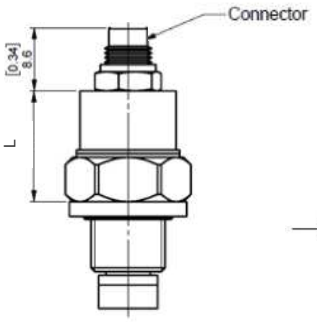
## DIMENSIONS (metric & [imperial])

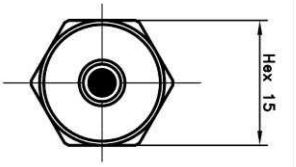



**XPM10-***




**XPM10-*-/P7**




**XPM10-*-/SC**

| Version: | Non-Amplified | | | Amplified A1/A2 | | | Amplified A3 | | |
|---|---|---|---|---|---|---|---|---|---|
| Option: | standard | P7 | SC | standard | P7 | SC | standard | P7 | SC |
| L (mm) | *7* | *11.5* | *11.5* | *10.5* | *14* | *15* | *23.5* | *23.5* | *28* |

Weight: The standard configuration without cable and sealing ring is < 20g

## WIRING SCHEMATICS

| Functions (non-amplified) | Wire / Pin |
|---|---|
| +SUPPLY | **Red** / 1 |
| +OUTPUT | **Green** / 4 |
| -OUTPUT | White / 2 |
| -SUPPLY | **Black** / 3 |
| Shield | Body |

| 0-5V Functions (A2) | Wire / Pin |
|---|---|
| +SUPPLY | **Red** / 1 |
| +OUTPUT | **Green** / 4 |
| -0V / COM | White / 2 |
| -SUPPLY | **Black** / 3 |
| Shield | Body |

| 0.5-4.5V Functions (A1) | Wire / Pin |
|---|---|
| +SUPPLY | **Red** / 1 |
| +OUTPUT | **Green** / 4 |
| -OUTPUT | White / 2 (common with - supply) |
| -SUPPLY | **Black** / 3 (common with - output) |
| Shield | Body |

| 4-20mA Functions (A3) | Wire / Pin |
|---|---|
| +SUPPLY / +OUTPUT | **Red** / 1 |
| -SUPPLY / -OUTPUT | Black / 3 |
| Shield | Body |

## ADDITIONAL INFORMATIONS

1. 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
2. Sealing: One FKM sealing ring Ø 16x2 is supplied with sensor. (Operating static temperature -30°C to 200°C)
3. Electrical connection: Standard = 2m of shielded sable ø3mm 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)

## OPTIONS

| | |
|---|---|
| *Temp. Compensation* *(other compensation range are available on request)* | **Z04**: CTR -40 to 90 °C [-40 to 194 °F] (not available with A3 and P7 options) |
| | **Z35**: CTR 20 to 120 °C [68 to 248 °F] (not available with A3 options) |
| | **Z36**: CTR 20 to 150 °C [68 to 302 °F] (not available with A1, A2 and A3 options) |
| *Waterproofing* | **P7**: IP67 protection for cable gland output or SC option (available only for Absolute and Sealed Gauge versions) |
| *Removable cable* | **SC**: Connector output with prewired mating connector, cable length 2 m [6.6 ft] |
| *Cable Length* | **L00M**: special cable length = L5M / L10M / L15M / L20M, total length in meters (standard length 2,0 m [6,6 ft]) |

Note: ETxx options are now replaced by Zxx options.

## ORDERING INFORMATION

| **XPM10** | **-** | **A1** | **-** | **20B** | **G** | **-** | **/Z35/P7/L5M** |
|---|---|---|---|---|---|---|---|
| Model | - | Output signal | - | Pressure Range | Pressure reference | - | Options |
| **XPM10** | | (blank): non-amplified<br>**A1**: 0,5 to 4,5V<br>**A2**: 0 to 5V<br>**A3**: 4 to 20 mA | | **1B**<br>**2B**<br>**5B**<br>**10B**<br>**20B**<br>**35B**<br>**50B**<br>**100B**<br>**200B**<br>**350B** | **A**: Absolute<br>**G**: Gauge<br>**S**: Sealed | | **/Z04**<br>**/Z35**<br>**/Z36**<br>**/P7**<br>**/SC**<br>**/L00M** |

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