
Electronic sensors for pressure control

OsiSense XM

Catalogue



Simply easy!™

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Electronic pressure sensors

OsiSense XM

| | |
|--------------|-----------------------------|
| Applications | Type of installation |
| | Type of sensor and features |

| |
|--|
| Control circuits |
| Devices without display |
| Pressure transmitters |
| Analogue output, 4...20 mA or 0...10 V |



| | |
|--|--|
| Sizes | 0...25 bar (0...362 psi) 0...300 psi (0...20.7 bar) |
| Fluids or products controlled | Air, fresh water (0...+80°C) |
| Fluid connection | G 1/4 A DIN 3852-E male (1) 1/4"-18 NPT male (1) |
| Rated supply voltage | 12/24 V $\overline{\text{---}}$ (4...20 mA), 24 V $\overline{\text{---}}$ (0...10 V), SELV, PELV (2) |
| Voltage limits | 8...33 V $\overline{\text{---}}$ (4...20 mA), 16.2...33 V $\overline{\text{---}}$ (0...10 V) |
| Current consumption | < 20 mA (4...20 mA), < 6 mA (0...10 V) |
| Electrical connection | M12, EN 175301-803-A (ex-DIN 43650A) or Packard Metri-Pack 150 connector (3) |
| Type of output | Analogue, 4...20 mA or 0...10 V |
| Materials in contact with fluid | Ceramic Al ₂ O ₃ , stainless steel type AISI 303, nitrile (NBR) |
| Output response time | < 2 ms |
| Precision including linearity, hysteresis, repeat accuracy | ± 1% of the measuring range |
| Service life | > 10 million operating cycles |
| Dimensions of case (mm) | Ø 36 x 67.5 |
| Conforming to standards | CE, ROHS, EN/IEC 61326-2-3 |
| Product certifications | UL, CSA conforming to UL 508 and CSA-22.2 no. 14, EAC, RCM |
| Ambient air temperature for operation | 0...+80°C |
| Degree of protection | IP 65 conforming to EN/IEC 60529, NEMA Type 4 conforming to UL/CSA |
| Vibration resistance | 20 gn (9...2000 Hz) conforming to EN/IEC 60068-2-6 |
| Shock resistance | 25 gn (half sine wave 11 ms) conforming to EN/IEC 60068-2-27 |
| Type reference | XMLK●●●B2C●●, XMLK●●●B2C●●TQ (4) XMLK●●●B2D●●, XMLK●●●B2D●●TQ (4) XMLK●●●P2C●●, XMLK●●●P2C●●TQ (4) XMLK●●●P2D●●, XMLK●●●P2D●●TQ (4) XMLK●●●P2P●●, XMLK●●●P2P●●TQ (4) |
| Pages | 15 and 16 |

Other versions

(1) For other fluid connections, please consult our Customer Care Centre.
 (2) Safety extra-low voltage, Protected extra-low voltage.
 (3) For other electrical connections, please consult our Customer Care Centre.
 (4) Sold in lots of 25, minimum order quantity 50.
 (5) Phoenix Contact "Quickon" integrated connection.

| |
|---|
| Control circuits |
| Devices without display |
| Pressure transmitters |
| Analogue output, 4...20 mA or 0...10 V. |



| | |
|--|--|
| Sizes | - 1...400 bar (- 14.5 psi...5800 psi) |
| Fluids or products controlled | Fresh water (0...+125°C) Air, hydraulic oils, corrosive fluids (- 15...+125°C) |
| Fluid connection | G 1/4 A DIN 3852-E male or 1/4"-18 NPT male (1) |
| Rated supply voltage | 12/24 V $\overline{\text{---}}$ (4...20 mA) 24 V $\overline{\text{---}}$ (0...10 V) |
| Voltage limits | 8...33 V $\overline{\text{---}}$ (4...20 mA) 11.4...33 V $\overline{\text{---}}$ (0...10 V) |
| Current consumption | < 20 mA |
| Electrical connection | M12 connector (1) or integrated quick connection (5) |
| Type of output | Analogue, 4...20 mA or 0...10 V |
| Materials in contact with fluid | Ceramic Al ₂ O ₃ , stainless steel type AISI 303, FPM (Viton) PPS (Leakage protection for P > 40 bar) |
| Output response time | < 2 ms |
| Precision including linearity, hysteresis, repeat accuracy | ± 0.3% of the measuring range |
| Service life | > 10 million operating cycles |
| Dimensions of case (mm) | Ø 22.8 x 58.1 (with M12 connector) Ø 22.8 x 66.1 (with quick connection) |
| Conforming to standards | CE, ROHS, EN/IEC 61326-2-3 |
| Product certifications | UL, CSA conforming to UL 508 and CSA-22.2 no. 14, EAC |
| Ambient air temperature for operation | - 15...+85°C |
| Degree of protection | IP 66, IP 67 conforming to EN/IEC 60529, NEMA Type 4 conforming to UL/CSA |
| Vibration resistance | 20 gn (9...2000 Hz) conforming to EN/IEC 60068-2-6 |
| Shock resistance | 25 gn (half sine wave 11 ms) conforming to EN/IEC 60068-2-27 |
| Type reference | XMLG●●●D21, XMLG●●●D71 XMLG●●●D21TQ (4) XMLG●●●D71TQ (4) XMLG●●●Q21TQ (4) XMLG●●●Q71TQ (4) |
| Pages | 19 and 20 |

Other versions

Electronic pressure sensors

OsiSense XM

| | |
|--------------|-----------------------------|
| Applications | Type of installation |
| | Type of sensor and features |

| |
|---|
| Control circuits |
| Devices without display |
| Pressure transmitters |
| Analogue output, 4...20 mA, 0...10 V or ratiometric output, 0.5...4.5 V |



| | | | | | | | | | |
|--|---|--------------|-------------------|--------------|-------------------|--------------|-------------------|---------------|--------------------|
| Sizes | -1...0 bar, -1...5 bar (-14.5...72.5 psi), 0...6 bar (0...87 psi) -14.5...0 psi, -14.5...60 psi (-1...4.14 bar), 0...50 psi (0...3.45 bar) | | | | | | | | |
| Fluids or products controlled | Fresh water (0...+ 125 °C) Air, hydraulic oils (- 15...+ 125 °C) | | | | | | | | |
| Fluid connection | G 1/4 A DIN 3852-E male, 1/4"-18NPT male, SAE 7/16-20 UNF-2B female | | | | | | | | |
| Rated supply voltage | 12/24 V $\overline{\text{---}}$ (4...20 mA), 24 V $\overline{\text{---}}$ (0...10 V), 5 V $\overline{\text{---}}$ (0.5...4.5 V), SELV, PELV (1) | | | | | | | | |
| Voltage limits | 7...33 V $\overline{\text{---}}$ (4...20 mA), 12...33 V $\overline{\text{---}}$ (0...10 V), 4.5...5.5 V $\overline{\text{---}}$ (0.5...4.5 V) | | | | | | | | |
| Current consumption | < 23 mA (4...20 mA), < 7 mA (0...10 V and 0.5...4.5 V) | | | | | | | | |
| Electrical connection | M12 connector, EN 175301-803-A (ex DIN 43650A) connector, Packard Metri-Pack 150 connector or 2 m PVC cable | | | | | | | | |
| Type of output | Analogue, 4...20 mA, 0...10 V or 0.5...4.5 V | | | | | | | | |
| Materials in contact with fluid | Ceramic Al ₂ O ₃ , stainless steel type AISI 316L, FPM fluorocarbon | | | | | | | | |
| Output response time | < 2 ms from 10 to 90% of maximum deviation | | | | | | | | |
| Precision including linearity, hysteresis, repeat accuracy | ± 0.5% of the measuring range (except for size 0.5 bar: ±1.5% and size 0.25 bar: ± 2%) | | | | | | | | |
| Service life | > 10 million operating cycles | | | | | | | | |
| Dimensions of case (mm) | Ø 26 x 32.3 (with M12 connector) Ø 26 x 55 (with EN 175301-803-A connector) Ø 26 x 49.2 (with Packard Metri-Pack 150 connector) Ø 26 x 57 (with cable) | | | | | | | | |
| Conforming to standards | CE, ROHS, EN/IEC 61326-2-3, NSF ANSI 61 | | | | | | | | |
| Product certifications | cULus conforming to UL 61010-1 and CSA-C22.2 n° 61010-1, EAC, RCM | | | | | | | | |
| Ambient air temperature for operation | - 30...+ 85 °C | | | | | | | | |
| Degree of protection | IP 65 or IP 67 conforming to EN/IEC 60529 IP 69K conforming to EN/IEC 60529 (versions with M12 connector) | | | | | | | | |
| Vibration resistance | 20 gn (15...2000 Hz) conforming to EN/IEC 60068-2-6 | | | | | | | | |
| Shock resistance | 100 gn (half sine wave 11 ms) conforming to EN/IEC 60068-2-27 | | | | | | | | |
| Type reference | <table border="0"> <tr> <td>XMLP●●●●D●●F</td> <td>XMLP●●●●D●●FQ (2)</td> </tr> <tr> <td>XMLP●●●●C●●F</td> <td>XMLP●●●●C●●FQ (2)</td> </tr> <tr> <td>XMLP●●●●L●●F</td> <td>XMLP●●●●L●●FQ (2)</td> </tr> <tr> <td>XMLP●●●●R●●3F</td> <td>XMLP●●●●R●●3FQ (2)</td> </tr> </table> | XMLP●●●●D●●F | XMLP●●●●D●●FQ (2) | XMLP●●●●C●●F | XMLP●●●●C●●FQ (2) | XMLP●●●●L●●F | XMLP●●●●L●●FQ (2) | XMLP●●●●R●●3F | XMLP●●●●R●●3FQ (2) |
| XMLP●●●●D●●F | XMLP●●●●D●●FQ (2) | | | | | | | | |
| XMLP●●●●C●●F | XMLP●●●●C●●FQ (2) | | | | | | | | |
| XMLP●●●●L●●F | XMLP●●●●L●●FQ (2) | | | | | | | | |
| XMLP●●●●R●●3F | XMLP●●●●R●●3FQ (2) | | | | | | | | |
| Pages | 24 to 36 | | | | | | | | |

(1) Safety extra-low voltage, Protected extra-low voltage.
(2) Sold in lots of 25.

| |
|---|
| Control circuits |
| Devices without display |
| Pressure transmitters |
| Analogue output, 4...20 mA, 0...10 V or ratiometric output, 0.5...4.5 V |



| | | | | | | | |
|--|---|---------------|--------------------|--------------|-------------------|---------------|--------------------|
| Sizes | - 1...9 bar (- 14.5...130 psi), 0...600 bar (0...8700 psi), 0...6,000 psi (0 bar...414 bar) | | | | | | |
| Fluids or products controlled | Fresh water (0...+ 135 °C) Air, hydraulic oils, refrigeration fluids (- 30...+ 135 °C) | | | | | | |
| Fluid connection | G 1/4 A DIN 3852-E male, SAE 7/16-20 UNF-2A male, SAE 7/16-20 UNF-2B female or 1/4"-18 NPT male | | | | | | |
| Rated supply voltage | 12/24 V $\overline{\text{---}}$ (4...20 mA), 24 V $\overline{\text{---}}$ (0...10 V), 5 V $\overline{\text{---}}$ (0.5...4.5 V), SELV, PELV (1) | | | | | | |
| Voltage limits | 7...33 V $\overline{\text{---}}$ (4...20 mA), 12...33 V $\overline{\text{---}}$ (0...10 V), 4.5...5.5 V $\overline{\text{---}}$ (0.5...4.5 V) | | | | | | |
| Current consumption | < 23 mA (4...20 mA), < 7 mA (0...10 V), < 7 mA (0.5...4.5 V) | | | | | | |
| Electrical connection | M12, EN 175301-803-A (ex-DIN 43650A) or Packard Metri-Pack 150 connector | | | | | | |
| Type of output | Analogue, 4...20 mA, 0...10 V or 0.5...4.5 V | | | | | | |
| Materials in contact with fluid | Stainless steel type AISI 316L, FPM fluorocarbon | | | | | | |
| Output response time | < 2 ms from 10% to 90% of maximum deviation | | | | | | |
| Precision including linearity, hysteresis, repeat accuracy | ± 0.5% of the measuring range | | | | | | |
| Service life | > 10 million operating cycles | | | | | | |
| Dimensions of case (mm) | Ø 26 x 38 (with M12 connector) Ø 26 x 60.5 (with EN 175301-803-A connector) Ø 26 x 55 (with Packard Metri-Pack 150 connector) | | | | | | |
| Conforming to standards | CE, ROHS, EN/IEC 61326-2-3, NSF ANSI 61 | | | | | | |
| Product certifications | cULus conforming to UL 61010-1 and CSA-C22.2 no. 61010-1, EAC, RCM | | | | | | |
| Ambient air temperature for operation | - 30...+ 85 °C | | | | | | |
| Degree of protection | IP 65 or IP 67 conforming to EN/IEC 60529 IP 69K conforming to EN/IEC 60529 (versions with M12 connector) | | | | | | |
| Vibration resistance | 20 gn (15...2000 Hz) conforming to EN/IEC 60068-2-6 | | | | | | |
| Shock resistance | 100 gn (half sine wave 11 ms) conforming to EN/IEC 60068-2-27 | | | | | | |
| Type reference | <table border="0"> <tr> <td>XMLP●●●●B●●1F</td> <td>XMLP●●●●B●●1FQ (2)</td> </tr> <tr> <td>XMLP●●●●B●●0</td> <td>XMLP●●●●B●●0Q (2)</td> </tr> <tr> <td>XMLP●●●●P●●30</td> <td>XMLP●●●●P●●30Q (2)</td> </tr> </table> | XMLP●●●●B●●1F | XMLP●●●●B●●1FQ (2) | XMLP●●●●B●●0 | XMLP●●●●B●●0Q (2) | XMLP●●●●P●●30 | XMLP●●●●P●●30Q (2) |
| XMLP●●●●B●●1F | XMLP●●●●B●●1FQ (2) | | | | | | |
| XMLP●●●●B●●0 | XMLP●●●●B●●0Q (2) | | | | | | |
| XMLP●●●●P●●30 | XMLP●●●●P●●30Q (2) | | | | | | |
| Pages | 24 to 36 | | | | | | |

(1) Safety extra-low voltage, Protected extra-low voltage.
(2) Sold in lots of 25.

Electronic pressure sensors

OsiSense XM for mobile equipment

| | |
|--------------|-----------------------------|
| Applications | Type of installation |
| | Type of sensor and features |

| |
|---|
| Control circuits |
| Devices without display |
| Pressure transmitters |
| Analogue output, 4...20 mA, 0...10 V or ratiometric output, 0.5...4.5 V |



| | | |
|--|--|-----------------------------------|
| Sizes | 0...60 bar (0...870 psi), 0...100 bar (0...1450 psi), 0...250 bar (0...3625 psi) 0...400 bar (0...5800 psi), 0...600 bar (0...8700 psi) | |
| Fluids or products controlled | Hydraulic oils, air, fresh water, gas (-40...+125 °C) | |
| Fluid connection | G 1/4 A DIN 3852-E male | |
| Rated supply voltage | 12/24 V $\ddot{=}$ (4...20 mA), 24 V $\ddot{=}$ (0...10 V), 5 V $\ddot{=}$ (0.5...4.5 V), SELV, PELV (1) | |
| Voltage limits | 9...36 V $\ddot{=}$ (4...20 mA), 12...36 V $\ddot{=}$ (0...10 V), 4.5...5.5 V $\ddot{=}$ (0.5...4.5 V) | |
| Current consumption | < 23 mA (4...20 mA), < 7 mA (0...10 V and 0.5...4.5 V) | |
| Electrical connection | M12 connector (4-pin) | Deutsch DT04-3P connector (3-pin) |
| Type of output | Analogue, 4...20 mA, 0...10 V or 0.5...4.5 V | |
| Materials in contact with fluid | Stainless steel type AISI 316L | |
| Output response time | < 2 ms from 10 to 90% of maximum deviation | |
| Precision including linearity, hysteresis, repeat accuracy | ± 0.5% of the measuring range | |
| Service life | > 10 million operating cycles | |
| Dimensions of case (mm) | Diameter x height | Ø 24 x 38.1 Ø 24 x 62.1 |
| Conforming to standards | CE, ROHS, EN/IEC 61326-2-3, ECE 10R-5, ISO 13766, ISO 14982, EN 13309 | |
| Product certifications | cULus conforming to UL 61010-1 E2 conforming to UNECE 10R-5 (pending) | |
| Ambient air temperature for operation | -40...+100 °C | |
| Degree of protection | IP 65, IP 67 and IP 69K conforming to EN/IEC 60529 | |
| Vibration resistance | 12 gn sine wave (20 to 520 Hz) and 18 gn random (10 to 2000 Hz) conforming to ISO 16750-3 Test 4 | |
| Shock resistance | 50 gn (11 ms half sine wave) conforming to IEC 60068-2-27 | |
| Type reference | XMEP●●0BD●1F XMEP●●0BD●1FQ (2) | XMEP●●0BT●1F XMEP●●0BT●1FQ (2) |
| Pages | 40 and 41 | |

Other versions (1) Safety extra-low voltage, Protected extra-low voltage.
(2) Sold in lots of 25.

| |
|---|
| Control circuits |
| Devices without display |
| Pressure transmitters |
| Analogue output, 4...20 mA, 0...10 V or ratiometric output, 0.5...4.5 V |



| | | |
|--|--|--|
| Sizes | 0...60 bar (0...870 psi), 0...100 bar (0...1450 psi), 0...250 bar (0...3625 psi) 0...400 bar (0...5800 psi), 0...600 bar (0...8700 psi) | 0...1000 psi (0...69 bar), 0...3000 psi (0...207 bar), 0...5000 psi (0...345 bar), 0...7500 psi (0...517 bar) |
| Fluids or products controlled | Hydraulic oils, air, fresh water, gas (-40...+125 °C) | |
| Fluid connection | G 1/4 A DIN 3852-E male | 1/4"-18NPT male |
| Rated supply voltage | 12/24 V $\ddot{=}$ (4...20 mA), 24 V $\ddot{=}$ (0...10 V), 5 V $\ddot{=}$ (0.5...4.5 V), SELV, PELV (1) | |
| Voltage limits | 9...36 V $\ddot{=}$ (4...20 mA), 12...36 V $\ddot{=}$ (0...10 V), 4.5...5.5 V $\ddot{=}$ (0.5...4.5 V) | |
| Current consumption | < 23 mA (4...20 mA), < 7 mA (0...10 V and 0.5...4.5 V) | |
| Electrical connection | AMP Superseal 1.5 connector (3-pin) | AMP Junior Power Timer connector (3-pin) |
| Type of output | Analogue, 4...20 mA, 0...10 V or 0.5...4.5 V | |
| Materials in contact with fluid | Stainless steel type AISI 316L | |
| Output response time | < 2 ms from 10 to 90% of maximum deviation | |
| Precision including linearity, hysteresis, repeat accuracy | ± 0.5% of the measuring range | |
| Service life | > 10 million operating cycles | |
| Dimensions of case (mm) | Ø 24 x 60.5 | Ø 24 x 54 Ø 24 x 60 |
| Conforming to standards | CE, ROHS, EN/IEC 61326-2-3, ECE 10R-5, ISO 13766, ISO 14982, EN 13309 | |
| Product certifications | cULus conforming to UL 61010-1 E2 conforming to UNECE 10R-5 (pending) | |
| Ambient air temperature for operation | -40...+100 °C | |
| Degree of protection | IP 65 and IP 67 conforming to EN/IEC 60529 | IP 65, IP 67 and IP 69K conforming to EN/IEC 60529 |
| Vibration resistance | 12 gn sine wave (20 to 520 Hz) and 18 gn random (10 to 2000 Hz) conforming to ISO 16750-3 Test 4 | |
| Shock resistance | 50 gn (11 ms half sine wave) conforming to IEC 60068-2-27 | |
| Type reference | XMEP●●0BV●1F XMEP●●0BV●1FQ (2) | XMEP●●0BJ●1F XMEP●●0BJ●1FQ (2) |
| Pages | 40 and 41 | 42 |

Other versions (1) Safety extra-low voltage, Protected extra-low voltage.
(2) Sold in lots of 25.

Electronic pressure sensors

OsiSense XM

| | |
|--------------|-----------------------------|
| Applications | Type of installation |
| | Type reference and features |

| |
|--|
| Control circuits |
| Switches with 4-digit display |
| - With an analogue output, 4...20 mA and a switching output, PNP or NPN type |
| - With two PNP or NPN switching outputs |



| | | | |
|--|---|--|---|
| Sizes | - | | |
| Fluids or products controlled | - | | |
| Fluid connection | - | | |
| Display | 7 segment/4-digit display. Pressure units in bar, psi or pascal. 41 display ranges can be selected, from -14.5 to 6000 | | |
| Rated supply voltage | 24 V $\overline{\text{---}}$, SELV, PELV (1) | | |
| Voltage limits | 17...33 V $\overline{\text{---}}$ | | |
| Current consumption | \leq 50 mA | | |
| Electrical connection | M12, 4-pin connector | | |
| Type of output | <table border="0"> <tr> <td>■ Analogue, 4...20 mA + one switching output, PNP or NPN, 200 mA</td> <td>■ 2 switching outputs, PNP or NPN, 200 mA</td> </tr> </table> | ■ Analogue, 4...20 mA + one switching output, PNP or NPN, 200 mA | ■ 2 switching outputs, PNP or NPN, 200 mA |
| ■ Analogue, 4...20 mA + one switching output, PNP or NPN, 200 mA | ■ 2 switching outputs, PNP or NPN, 200 mA | | |
| Materials in contact with fluid | - | | |
| Output response time | \leq 3 ms | | |
| Precision including linearity, hysteresis, repeat accuracy | \pm 1% of the measuring range | | |
| Service life | > 10 million operating cycles | | |
| Dimensions of case (mm) | Width x height x depth 41 x 77 x 42 | | |
| Conforming to standards | CE, ROHS, EN/IEC 61000-6-2, EN/IEC 61000-6-4 | | |
| Product certifications | cULus conforming to UL 508 and CSA-C22.2 no. 14, EAC, RCM | | |
| Ambient air temperature for operation | -25...+70°C | | |
| Degree of protection | IP 65 or IP 67 conforming to EN/IEC 60529, IP 69K conforming to DIN 40050 | | |
| Vibration resistance | 5 gn (10...2000 Hz) conforming to EN/IEC 60068-2-6 | | |
| Shock resistance | 25 gn conforming to EN/IEC 60068-2-27 | | |
| Type reference | ZMLPA1•2S● ZMLPA2•0SH | | |
| Pages | 45 | | |

(1) Safety extra-low voltage, Protected extra-low voltage.
(2) For other fluid connections, please consult our Customer Care Centre.

| |
|---|
| Control circuits |
| Pressure transmitters with 4-digit display |
| - With one analogue output, 4...20 mA or 0...10 V and one input for diagnosis |
| Pressure and vacuum switches with 4-digit display |
| - With one analogue output, 4...20 mA or 0...10 V and one switching output, PNP or NPN type |
| - With two switching outputs, PNP or NPN type |
| - With one analogue output, 4...20 mA, and two switching outputs, PNP or NPN type |



| | | | | | | | |
|--|---|-----------------------------------|--|--|---|--|---|
| Sizes | - 1...600 bar (-14.5 psi...8700 psi) | | | | | | |
| Fluids or products controlled | Fresh water (0...+80°C), Air, hydraulic oils, refrigeration fluids (-20...+80°C) | | | | | | |
| Fluid connection | G 1/4 A DIN3852-Y female, 1/4"-18 NPT female or SAE 7/16-20 UNF female (2) | | | | | | |
| Display | 7-segment/4-digit display. Pressure units in bar, psi or pascal. Signalling LED for the pressure unit and output state. | | | | | | |
| Rated supply voltage | 24 V $\overline{\text{---}}$, SELV, PELV (1) | | | | | | |
| Voltage limits | 17...33 V $\overline{\text{---}}$ | | | | | | |
| Current consumption | \leq 50 mA | | | | | | |
| Electrical connection | M12, 4-pin connector | | | | | | |
| Type of output | <table border="0"> <tr> <td>■ Analogue, 4...20 mA or 0...10 V</td> <td>■ Analogue, 4...20 mA or 0...10 V + one switching output, PNP or NPN, 250 mA</td> </tr> <tr> <td></td> <td>■ Two switching outputs, PNP or NPN, 250 mA</td> </tr> <tr> <td></td> <td>■ Analogue, 4...20 mA + two switching outputs, PNP or NPN, 250 mA</td> </tr> </table> | ■ Analogue, 4...20 mA or 0...10 V | ■ Analogue, 4...20 mA or 0...10 V + one switching output, PNP or NPN, 250 mA | | ■ Two switching outputs, PNP or NPN, 250 mA | | ■ Analogue, 4...20 mA + two switching outputs, PNP or NPN, 250 mA |
| ■ Analogue, 4...20 mA or 0...10 V | ■ Analogue, 4...20 mA or 0...10 V + one switching output, PNP or NPN, 250 mA | | | | | | |
| | ■ Two switching outputs, PNP or NPN, 250 mA | | | | | | |
| | ■ Analogue, 4...20 mA + two switching outputs, PNP or NPN, 250 mA | | | | | | |
| Materials in contact with fluid | \leq 40 bar: Ceramic Al_2O_3 , stainless steel 316L, FPM fluorocarbon \geq 100 bar: Stainless steel 316L, FKM fluorocarbon (Viton) | | | | | | |
| Output response time | \leq 10 ms | | | | | | |
| Precision including linearity, hysteresis, repeat accuracy | \pm 1% of the measuring range | | | | | | |
| Service life | > 10 million operating cycles | | | | | | |
| Dimensions of case (mm) | 41 x 93 x 42 | | | | | | |
| Conforming to standards | CE, ROHS, EN/IEC 61326-2-3, NSF ANSI 61 | | | | | | |
| Product certifications | cULus conforming to UL 61010-1 and CSA-C22.2 no. 61010-1, EAC, RCM | | | | | | |
| Ambient air temperature for operation | -20...+80°C | | | | | | |
| Degree of protection | IP 66, IP 67 conforming to EN/IEC 60529 | | | | | | |
| Vibration resistance | 20 gn (10...2000 Hz) conforming to EN/IEC 60068-2-6 | | | | | | |
| Shock resistance | 50 gn conforming to EN/IEC 60068-2-27 | | | | | | |
| Type reference | XMLR●●●G0●●● XMLR●●●G1●●●, XMLR●●●G2●●● XMLR●●●M0●●● XMLR●●●M1●●●, XMLR●●●M2●●● | | | | | | |
| Pages | 49 to 52 | | | | | | |

(1) Safety extra-low voltage, Protected extra-low voltage.
(2) For other fluid connections, please consult our Customer Care Centre.

Electronic pressure sensors

OsiSense XM

For control circuits

Functions

Electronic pressure sensors

The function of electronic pressure sensors is the control and measurement of pressure or vacuum levels in hydraulic or pneumatic systems. Being electronic, the sensors have no mechanical moving parts.

Pressure transmitters

Pressure transmitters convert the pressure into an electrical signal which is proportional to the applied pressure. Their high precision makes them suitable for all industrial applications requiring pressure/vacuum display, control or regulation.

Being very robust, they are equally suitable for applications involving high operating rates.

Pressure and vacuum switches

Electronic pressure switches and vacuum switches convert a change in pressure into a digital electrical signal when the switching points which have been set are reached.

They are distinguished from electromechanical pressure switches and vacuum switches by their very wide switching adjustment ranges.

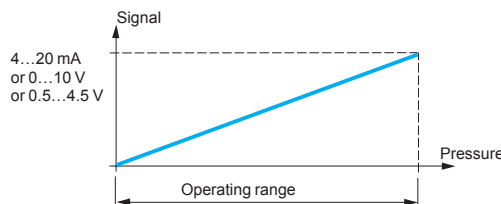
Their robustness, together with their excellent adherence to the set values over a period of time, make them ideal for applications involving high operating rates. In addition, the high repeat accuracy and fast response time of these sensors make them equally suitable for applications requiring accurate pressure regulation and monitoring.

Note: Some sensors in the OsiSense XM ranges have both one analogue output and one or two digital outputs.

Operating principle

Pressure transmitters

These devices provide an analogue output which has a signal proportional to the pressure applied to the sensor. Depending on the model, this signal can be 4...20 mA, 0...10 V or 0.5...4.5 V.



Pressure and vacuum switches

These devices have one or two digital outputs depending on the model. The status of these outputs is defined by high (SP) and low (rP) switching points which can usually be independently adjusted.

Pressure switches and vacuum switches can have 2 different switching modes:

- Hysteresis mode, particularly suited to pumping applications (filling/emptying).
- Window mode, more suitable for applications where the pressure is regulated.

The switching outputs can usually be configured as normally open (NO) or normally closed (NC).

In addition, for the OsiSense XMLR range (1), output switching can be delayed for between 1 and 50 seconds, both on the pressure rising edge and falling edge.

(1) See pages 46 to 53.

Electronic pressure sensors

OsiSense XM

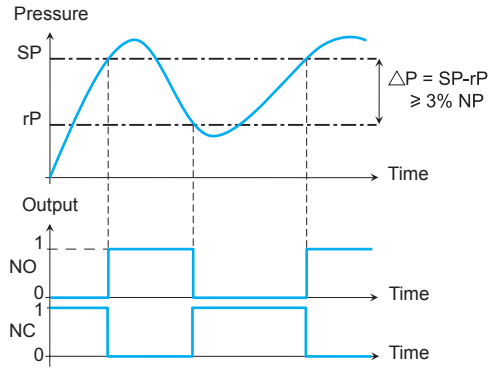
For control circuits

Operating principle (continued)

Pressure and vacuum switches (continued)

Switching output: hysteresis mode

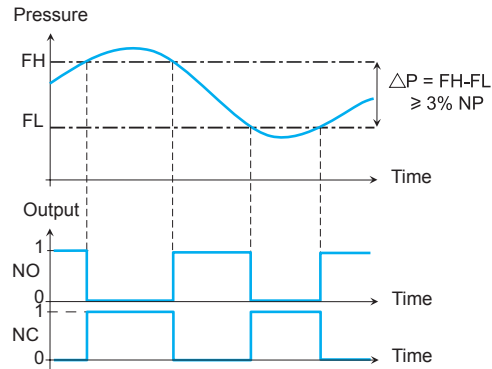
Hysteresis mode is generally used for pumping and/or emptying applications.



SP: High switching point
rP: Low switching point
NP: Nominal pressure

Switching output: Window mode

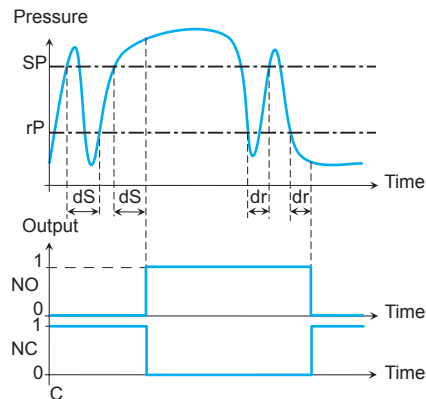
Window mode is generally used for pressure regulation applications.



FH: High switching point
FL: Low switching point
NP: Nominal pressure

Switching output: time delay mode

Time delay mode is generally used to filter fast transient pressures. The output only switches after a "dS" and "dr" time period which can be set between 0 and 50 seconds.



FH: High switching point
FL: Low switching point
NP: Nominal pressure

Electronic pressure sensors

OsiSense XM

For control circuits

Terminology

Nominal pressure NP or size

The nominal pressure is the maximum pressure or vacuum which can be measured by the sensor.

Maximum permissible accidental pressure

This is the maximum pressure, excluding pressure surges, to which the pressure sensor can occasionally be subjected without being damaged.

Destruction pressure

The pressure value which if exceeded is likely to cause serious damage to the sensor i.e. leaking, bursting, component failure, etc.

High switching point (SP)

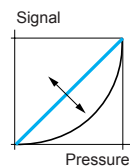
This is the upper pressure setting selected on the pressure or vacuum switch at which the electrical output changes state when this pressure value is reached.

Low switching point (rP)

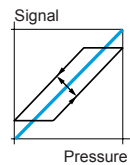
This is the lower pressure setting selected on the pressure or vacuum switch at which the electrical output changes state when this pressure value is reached.

Precision

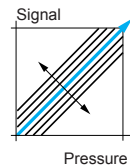
The sensor's overall precision is the result of several error sources linked to linearity, hysteresis, repeat accuracy and setting tolerances. It is expressed as a % of the nominal pressure.



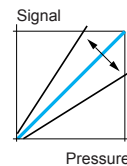
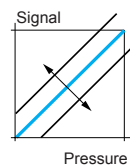
The linearity is the maximum deviation between the actual transmitter curve and the nominal curve.



The hysteresis is the maximum deviation between the rising pressure curve and the falling pressure curve.



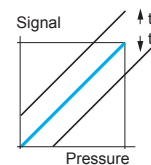
The repeat accuracy is the maximum drift encountered after several successive pressure variation cycles.



The setting tolerances are the calibration tolerances regarding the zero point and sensitivity set during sensor manufacture (gradient of output signal curve from the pressure transmitter).

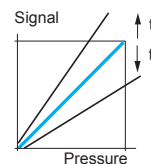
Temperature drift

Although the pressure sensor is compensated electronically, its accuracy is still slightly influenced by the temperature to which it is subjected.



Zero point drift

This is proportional to the temperature and is expressed as % NP/°C.



Sensitivity drift

This is proportional to the temperature and is expressed as % NP/°C.

(NP: Nominal pressure)

Electronic pressure sensors

OsiSense XM

For control circuits

Main criteria for selecting an electronic pressure sensor

The fluid or gas to be controlled

Our products, including the materials used, are compatible with the majority of fluids or gases encountered in industrial applications.

However some particularly corrosive fluids (sea water, for example) can affect product operation sooner or later.

The fluid temperature can also be an aggravating factor.

The materials in contact with the fluid are described in the technical data sheets which can be found on our website, www.tesensors.com.

If in doubt about compatibility, contact our Customer Care Centre.

The maximum pressure of the fluid to be controlled

The maximum pressure of the fluid to be controlled will determine the nominal pressure (or size) of the product to be used.

Our product ranges include a number of sizes which cover a pressure range from -1 to 600 bar.

It is advisable to choose a size just above the maximum pressure to be controlled, in order to have the best possible accuracy.

However, sometimes it is necessary to take account of transient pressure surges caused by the system operation (for example: the phenomenon of water hammer) and choose a size well above the maximum pressure to be controlled.

The fluid entry

There are a number of formats for the fluid and pneumatic connections.

Our ranges have the 3 most common types of fluid entry:

- G 1/4
- 1/4" - 18 NPT
- SAE 7/16-20UNF

The type and configuration of the electrical output(s)

Depending on the product range, each sensor reference has one, two or three outputs which may be analogue or digital.

It is important to clearly identify the function(s) the pressure sensor has to fulfil in the control system, in order to select the correct product.

The electrical connection

All products in the OsiSense XM ranges offer connection via an M12 x 1, 4 or 5-pin male cylindrical connector.

Some pressure transmitters also have an EN 175301-803-A or Packard Metri-Pack 150 connector.

We recommend connecting our pressure sensors by means of our OsiSense XZ cabling accessories.

Electronic pressure sensors

OsiSense XM

XMLK pressure transmitters

Plastic body, stainless steel 303 fluid entry.

With analogue output

Presentation

XMLK pressure transmitters are characterised by their ceramic pressure measuring cell.

The deformation caused by the pressure is transmitted to the resistors of a Wheatstone bridge screen-printed on the ceramic.

The change in resistance is then processed by the integrated electronics, giving an analogue output signal.

The stainless steel AISI 303 fluid entry and the ceramic cell combined with a nitrile gasket make these transmitters particularly suitable for fluids such as air and fresh water, for temperatures between 0 and + 80°C.

Depending on the model, these devices are supplied:

- With 12 or 24 V $\overline{\text{DC}}$ nominal and operate from 8 to 33 V $\overline{\text{DC}}$ for transmitters with 4...20 mA output
- With 24 V $\overline{\text{DC}}$ nominal and operate from 11.4 to 33 V $\overline{\text{DC}}$ for transmitters with a 0...10 V output

These products have IP 67 and Nema type 4 degree of protection.

In addition to their plastic case and the pressure ratings available, they constitute the optimised solution for water pumping applications.

Description

- 1 Electrical connection: M12 male, EN 175301-803-A or Packard Metri-Pack 150.
- 2 Plastic case.
- 3 Electronics: 4...20 mA or 0...10 V analogue output.
- 4 Ceramic pressure measuring cell.
- 5 Nitrile gasket.
- 6 Fluid entry: G 1/4 male or 1/4" - 18 NPT male.

Functions

Versions with an M12 electrical connector and 4...20 mA analogue output (XMLK●●●●2D2●) can be used with switches with ZMLP 4-digit display (1).

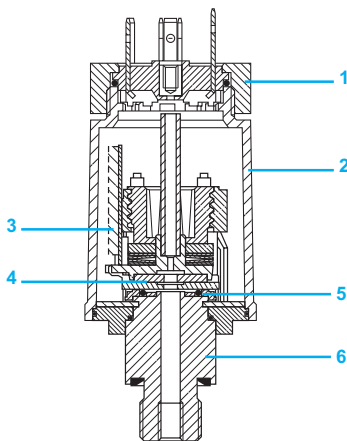
The pressure ranges available are:

- 0...6 bar to 0...25 bar
- 0...100 psi to 0...300 psi

The selling in lots option offers an excellent price/performance ratio (sold individually or in lots of 25).

XMLK electronic pressure sensors are, therefore, mainly intended for machine manufacturers.

(1) See pages 44 and 45.



Electronic pressure sensors

OsiSense XM

XMLK pressure transmitters

Plastic body, stainless steel 303 fluid entry.

With analogue output. Sizes in bar



XMLK●●●B2D●1



XMLK●●●B2C●1

0 to 6 bar (0 to 87 psi)

Maximum permissible accidental pressure: 12 bar, destruction pressure: 18 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|--|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLK006B2D21 | 0.110 |
| | EN 175301-803-A | XMLK006B2C21 (2) | 0.110 |
| 0...10 V | M12 | XMLK006B2D71 | 0.110 |
| | EN 175301-803-A | XMLK006B2C71 | 0.110 |

0 to 10 bar (0 to 145 psi)

Maximum permissible accidental pressure: 20 bar, destruction pressure: 30 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|--|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLK010B2D21 (2) | 0.110 |
| | EN 175301-803-A | XMLK010B2C21 (2) | 0.110 |
| 0...10 V | M12 | XMLK010B2D71 | 0.110 |
| | EN 175301-803-A | XMLK010B2C71 | 0.110 |

0 to 16 bar (0 to 232 psi)

Maximum permissible accidental pressure: 32 bar, destruction pressure: 48 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|--|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLK016B2D21 | 0.110 |
| | EN 175301-803-A | XMLK016B2C21 (2) | 0.110 |
| 0...10 V | M12 | XMLK016B2D71 | 0.110 |
| | EN 175301-803-A | XMLK016B2C71 | 0.110 |

0 to 25 bar (0 to 362.5 psi)

Maximum permissible accidental pressure: 50 bar, destruction pressure: 75 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|--|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLK025B2D21 (2) | 0.110 |
| | EN 175301-803-A | XMLK025B2C21 (2) | 0.110 |
| 0...10 V | M12 | XMLK025B2D71 | 0.110 |

(1) For other electrical or fluid connections, or types of output, please consult our Customer Care Centre.

(2) Sold in lots of 25. Add TQ to the end of the reference selected.
Example: XMLK006B2C21 becomes XMLK006B2C21TQ. Minimum quantity 50.

Electronic pressure sensors

OsiSense XM

XMLK pressure transmitters

Plastic body, stainless steel 303 fluid entry.

With analogue output. Sizes in psi



XMLK●●0P2D●3



XMLK●●0P2C●3



XMLK●●0P2P●3

| 0 to 100 psi (0 to 6.9 bar) | | | |
|---|------------------------|------------------|-----------|
| Maximum permissible accidental pressure: 200 psi, destruction pressure: 300 psi | | | |
| Analogue output type | Electrical connection | Reference (1) | Weight kg |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLK100P2D23 (2) | 0.110 |
| | EN 175301-803-A | XMLK100P2C23 (2) | 0.110 |
| | Packard Metri-Pack 150 | XMLK100P2P23 (2) | 0.110 |
| 0...10 V | M12 | XMLK100P2D73 | 0.110 |
| | EN 175301-803-A | XMLK100P2C73 | 0.110 |

| 0 to 150 psi (0 to 10.3 bar) | | | |
|---|------------------------|---------------|-----------|
| Maximum permissible accidental pressure: 300 psi, destruction pressure: 450 psi | | | |
| Analogue output type | Electrical connection | Reference (1) | Weight kg |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLK150P2D23 | 0.110 |
| | EN 175301-803-A | XMLK150P2C23 | 0.110 |
| | Packard Metri-Pack 150 | XMLK150P2P23 | 0.110 |
| 0...10 V | M12 | XMLK150P2D73 | 0.110 |
| | EN 175301-803-A | XMLK150P2C73 | 0.110 |

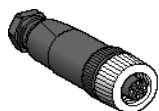
| 0 to 200 psi (0 to 13.8 bar) | | | |
|---|------------------------|------------------|-----------|
| Maximum permissible accidental pressure: 400 psi, destruction pressure: 600 psi | | | |
| Analogue output type | Electrical connection | Reference (1) | Weight kg |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLK200P2D23 | 0.110 |
| | EN 175301-803-A | XMLK200P2C23 (2) | 0.110 |
| | Packard Metri-Pack 150 | XMLK200P2P23 | 0.110 |
| 0...10 V | M12 | XMLK200P2D73 | 0.110 |
| | EN 175301-803-A | XMLK200P2C73 | 0.110 |

| 0 to 300 psi (0 to 20.7 bar) | | | |
|---|------------------------|------------------|-----------|
| Maximum permissible accidental pressure: 600 psi, destruction pressure: 900 psi | | | |
| Analogue output type | Electrical connection | Reference (1) | Weight kg |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLK300P2D23 | 0.110 |
| | EN 175301-803-A | XMLK300P2C23 (2) | 0.110 |
| | Packard Metri-Pack 150 | XMLK300P2P23 (2) | 0.110 |
| 0...10 V | M12 | XMLK300P2D73 | 0.110 |
| | EN 175301-803-A | XMLK300P2C73 | 0.110 |

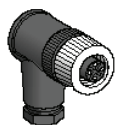
(1) For other electrical or fluid connections, or types of output, please consult our Customer Care Centre.

(2) Sold in lots of 25. Add TQ to the end of the reference selected.

Example: XMLK200P2D23 becomes XMLK200P2D23TQ. Minimum quantity 50.



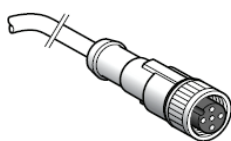
XZCC12FDM40B



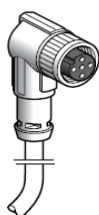
XZCC12FCM40B



XZCC43FCP40B



XZCP1141L10



XZCP1241L5

Connection accessories

| Description | Type | Reference | Weight kg |
|--|----------|--------------|-----------|
| M12 female connector metal clamping ring (1) | Straight | XZCC12FDM40B | 0.020 |
| | Elbowed | XZCC12FCM40B | 0.020 |

| | | | |
|--------------------------------------|---|--------------|-------|
| Female connector EN 175301-803-A (1) | – | XZCC43FCP40B | 0.035 |
|--------------------------------------|---|--------------|-------|

| Description | Length of cable | Reference | Weight kg |
|--|-----------------|-------------|-----------|
| Pre-wired M12, straight, female connectors | 2 m | XZCP1141L2 | 0.090 |
| | 5 m | XZCP1141L5 | 0.190 |
| | 10 m | XZCP1141L10 | 0.370 |
| Pre-wired M12, elbowed, female connectors | 2 m | XZCP1241L2 | 0.090 |
| | 5 m | XZCP1241L5 | 0.190 |
| | 10 m | XZCP1241L10 | 0.370 |

(1) Connector with screw terminal connections.

Electronic pressure sensors

OsiSense XM

XMLG pressure transmitters

Metal body, stainless steel 303 fluid entry

With analogue or solid-state output

Presentation

XMLG pressure transmitters are characterised by their ceramic pressure measuring cell.

The deformation caused by the pressure is transmitted to the resistors of a Wheatstone bridge screen-printed on the ceramic.

The change in resistance is then processed by the integrated electronics, giving either a digital or analogue output signal.

The stainless steel AISI 303 body and the ceramic cell combined with a viton gasket make these products compatible with industrial fluids such as:

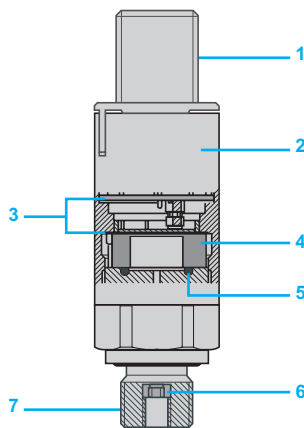
- Air
- Fresh water
- Hydraulic oils

XMLG pressure sensors can control fluids from -15 to + 125°C.

Depending on the model, these sensors are supplied:

- With 12 or 24 V $\overline{\text{DC}}$ nominal and operate from 8 to 33 V $\overline{\text{DC}}$ for transmitters with 4...20 mA output,
- With 24 V $\overline{\text{DC}}$ nominal and operate from 11.4 to 33 V $\overline{\text{DC}}$ for transmitters with a 0...10 V output.

Offered with IP 67 and Nema type 4 degree of protection, these compact products, which offer excellent EMC characteristics and typical precision better than 0.3 %, are particularly suitable for the most demanding industrial applications.



Description

- 1 Electrical connection: M12 male or quick connection for cable.
- 2 Metal case made of stainless steel 303.
- 3 Electronics with EMC protection.
- 4 Ceramic pressure measuring cell.
- 5 FPM (Viton) gasket.
- 6 Leakage protection (on sizes ≥ 40 bar).
- 7 Fluid entry: G 1/4 male or 1/4" - 18 NPT male.

Functions

Pressure transmitters have an 4...20 mA or 0...10 V analogue output, which is proportional to the measuring range.

Versions with an M12 electrical connector and 4...20 mA analogue output (XMLG●●●D2●) can be used with switches with a 4-digit ZMLP display (1).

The pressure ranges offered are:

- - 1...0 bar
- 0...400 bar

An anti-leakage system integrated in products for pressures ≥ 40 bar, prevents fluid leakage in the event of the measuring cell destruction pressure being exceeded.

Important ordering requirement

XMLG pressure transmitters are sold individually or in lots of 50.

(1) See pages 44 and 45.

Electronic pressure sensors

OsiSense XM

XMLG pressure transmitters

Metal body, stainless steel 303 fluid entry

With analogue output. Sizes in bar



XMLG●●●D●●●



XMLG●●●Q●●●

-1 to 0 bar (-14.5 to 0 psi)

Maximum permissible accidental pressure: 2.7 bar, destruction pressure: 3 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLGM01D21 (2) | 0.095 |
| 0...10 V | M12 | XMLGM01D71 | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLGM01D23 (2) | 0.095 |
| 0...10 V | M12 | XMLGM01D73TQ (3) | 0.095 |

0 to 1 bar (0 to 14.5 psi)

Maximum permissible accidental pressure: 2.7 bar, destruction pressure: 3 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG001D21 (2) | 0.095 |
| 0...10 V | M12 | XMLG001D71 (2) | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG001D23 (2) | 0.095 |
| 0...10 V | M12 | XMLG001D73TQ (3) | 0.095 |

0 to 6 bar (0 to 87 psi)

Maximum permissible accidental pressure: 17.6 bar, destruction pressure: 20 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG006D21 | 0.095 |
| 0...10 V | M12 | XMLG006D71 | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG006D23 | 0.095 |
| 0...10 V | M12 | XMLG006D73TQ (3) | 0.095 |

0 to 10 bar (0 to 145 psi)

Maximum permissible accidental pressure: 22 bar, destruction pressure: 25 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|---------------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG010D21 (2) | 0.095 |
| | Integrated connection (4) | XMLG010Q21TQ (3) | 0.095 |
| 0...10 V | M12 | XMLG010D71 (2) | 0.095 |
| | Integrated connection (4) | XMLG010Q71TQ (3) | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG010D23 (2) | 0.095 |
| 0...10 V | M12 | XMLG010D73 | 0.095 |

(1) For other electrical or fluid connections, or types of output, please consult our Customer Care Centre.

(2) Sold in lots of 25. Minimum quantity 50. Add TQ to the end of the reference selected. Example: XMLG001D21 becomes XMLG001D21TQ.

(3) Sold only in lots of 25. Minimum quantity 50.

(4) Phoenix Contact "Quickon" type integrated quick connection.

Electronic pressure sensors

OsiSense XM

XMLG pressure transmitters

Metal body, stainless steel 303 fluid entry

With analogue output. Sizes in bar



XMLG000D000



XMLG000Q000

0 to 16 bar (0 to 232 psi)

Maximum permissible accidental pressure: 35.2 bar, destruction pressure: 40 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG016D21 (2) | 0.095 |
| 0...10 V | M12 | XMLG016D71 | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG016D23 | 0.095 |
| 0...10 V | M12 | XMLG010D73TQ (3) | 0.095 |

0 to 25 bar (0 to 362.5 psi)

Maximum permissible accidental pressure: 56 bar, destruction pressure: 62.5 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|---------------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG025D21 (2) | 0.095 |
| | Integrated connection (4) | XMLG025Q21TQ (3) | 0.095 |
| 0...10 V | M12 | XMLG025D71 (2) | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG025D23 (2) | 0.095 |
| 0...10 V | M12 | XMLG025D73TQ (3) | 0.095 |

0 to 100 bar (0 to 1450 psi)

Maximum permissible accidental pressure: 225 bar, destruction pressure: 250 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|---------------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG100D21 | 0.095 |
| | Integrated connection (4) | XMLG100Q21TQ (3) | 0.095 |
| 0...10 V | M12 | XMLG100D71 (2) | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG100D23 (2) | 0.095 |
| 0...10 V | M12 | XMLG100D73TQ (3) | 0.095 |

0 to 250 bar (0 to 3625 psi)

Maximum permissible accidental pressure: 560 bar, destruction pressure: 625 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG250D21 (2) | 0.095 |
| 0...10 V | M12 | XMLG250D71 (2) | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG250D23 | 0.095 |
| 0...10 V | M12 | XMLG250D73TQ (3) | 0.095 |

0 to 400 bar (0 to 5800 psi)

Maximum permissible accidental pressure: 800 bar, destruction pressure: 900 bar

| Analogue output type | Electrical connection | Reference (1) | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG400D21 (2) | 0.095 |
| 0...10 V | M12 | XMLG400D71 (2) | 0.095 |
| 1/4"- 18 NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLG400D23 | 0.095 |
| 0...10 V | M12 | XMLG400D73TQ (3) | 0.095 |

(1) For other electrical or fluid connections, or types of output, please consult our Customer Care Centre.

(2) Sold in lots of 25. Minimum quantity 50. Add TQ to the end of the reference selected. Example: XMLG016D21 becomes XMLG016D21TQ.

(3) Sold only in lots of 25. Minimum quantity 50.

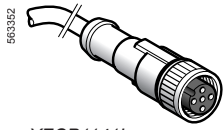
(4) Phoenix Contact "Quickon" type integrated quick connection.

Electronic pressure sensors

OsiSense XM

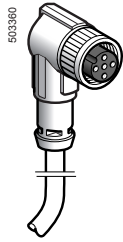
XMLG pressure transmitters

Accessories and replacement parts



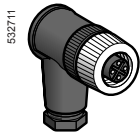
563352

XZCP1141L●



503360

XZCP1241L●



532711

XZCC12FCM40B



532715

XMLGZ001

Connection accessories

| Description | | Length of cable m | Reference | Weight kg |
|---|----------|----------------------|--------------|--------------|
| M12 female connector, metal clamping ring (1) | Straight | – | XZCC12FDM40B | 0.020 |
| | Elbowed | – | XZCC12FCM40B | 0.020 |
| Pre-wired M12 female connectors | Straight | 2 | XZCP1141L2 | 0.090 |
| | | 5 | XZCP1141L5 | 0.190 |
| | | 10 | XZCP1141L10 | 0.370 |
| | Elbowed | 2 | XZCP1241L2 | 0.090 |
| | | 5 | XZCP1241L5 | 0.190 |
| | | 10 | XZCP1241L10 | 0.370 |

Replacement part

| Description | Sold in lots of | Unit reference | Weight kg |
|----------------------|--------------------|-------------------|--------------|
| Quick connection (2) | 10 | XMLGZ001 | 0.025 |

(1) Connector with screw terminal connections.

(2) Phoenix Contact "Quickon" type connection.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, stainless steel fluid entry

With analogue output

Presentation

XMLP pressure transmitters rated at less than 9 bar or 100 psi

These transmitters integrate a ceramic pressure measuring cell. Ceramic technology has been used successfully for many years and offers a high level of sensitivity that is particularly suitable for measuring low pressures.

Ceramic also provides good resistance to abrasive fluids.

An internal fluorocarbon rubber gasket provides the seal between the ceramic measuring cell and the AISI 316L stainless steel casing.

Pressure transmitters can be used to measure the following types of pressure:

- air
- fresh water
- the majority of hydraulic oils

It is important, however, to ensure that the gasket is compatible with the fluid being controlled.

These transmitters can control fluids ranging in temperature from -15 to 125 °C.

Their power supply (1) depends on the type of analogue output:

- 5 V +/- 10% for the 0.5...4.5 V ratiometric output
- 12 or 24 V (nominal), operating from 7 to 33 V for the 4...20 mA output
- 24 V (nominal), operating from 12 to 33 V for the 0...10 V output

XMLP pressure transmitters rated greater than or equal to 9 bar or 100 psi

These transmitters integrate a metal pressure measuring cell.

This measuring cell, which is welded directly onto the AISI 316L stainless steel transmitter body, offers the following advantages:

- An all-metal pressure chamber, with no elastomer gasket in contact with the fluid
- Compatibility with a large number of fluids:
 - air
 - fresh water
 - hydraulic oils
 - refrigeration fluids
 - all fluids or gases compatible with AISI 316L stainless steel

XMLP pressure transmitters can control fluids ranging in temperature from -30 to 120 °C.

Their power supply (1) depends on the type of analogue output:

- 5 V +/- 10% for the 0.5...4.5 V ratiometric output
- 12 or 24 V (nominal), operating from 7 to 33 V for the 4...20 mA output
- 24 V (nominal), operating from 12 to 33 V for the 0...10 V output

General characteristics

Made of stainless steel, XMLP pressure transmitters are compact and rugged.

Their degree of protection varies according to the type of connector:

- IP 65 for EN 175301-803-A connector versions
- IP 65 and IP 67 for Packard Metri-Pack connector versions
- IP 65, IP 67 and IP 69K for M12 connector versions

With typical precision better than 0.5% of the rating, these transmitters are particularly suitable for industrial applications such as:

- machine tools
- moulding presses
- stamping presses
- lifting gear
- HVAC systems (for ratings greater than or equal to 9 bar or 100 psi only)

(1) Use Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV) power supply.



XMLP pressure transmitters
AISI 316L stainless steel casing

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, stainless steel fluid entry

With analogue output.

Functions

XMLP pressure transmitters have an analogue output which delivers a signal proportional to the measured pressure.

This output can be one of the following types:

- 4...20 mA
- 0...10 V
- 0.5...4.5 V ratiometric

The pressure ranges available are:

- vacuum measuring
 - -1...0 bar
 - -14.5...0 psi
- pressure measuring
 - 0...600 bar
 - 0...6,000 psi
- combined pressure measuring (vacuum and pressure)
 - -1...25 bar
 - -14.5...60 psi

The XMLP offer is available with four types of electrical connection:

- M12, 4-pin connector
- EN 175301-803-A (ex DIN 43650) connector
- Packard Metri-Pack 150 connector
- 2 m PVC cable

Several types of fluid connection are available:

- G1/4 A male
- 1/4"-18NPT male
- SAE 7/16-20UNF-2A male
- SAE 7/16-20UNF-2B female (with or without Schrader pin depending on the model)

Depending on the model, XMLP transmitters are sold:

- individually
- in lots of 25

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in bar



XMLP●●●GD●1F



XMLP●●●GC●1F



XMLP●●●GL●1F

-1 to 0 bar (-14.5 to 0 psi)

Maximum permissible accidental pressure: 3 bar, destruction pressure: 5 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|-------------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLPM00GD21F (1) | 0.080 |
| | EN 175301-803-A | XMLPM00GC21F (1) | 0.096 |
| | 2 m cable | XMLPM00GL21F | 0.197 |
| 0...10 V | M12 | XMLPM00GD71F (1) | 0.080 |
| | EN 175301-803-A | XMLPM00GC71F (1) | 0.096 |
| | 2 m cable | XMLPM00GL71F | 0.197 |
| 0.5...4.5 V ratiometric | M12 | XMLPM00GD11F | 0.080 |
| | EN 175301-803-A | XMLPM00GC11F | 0.096 |

SAE 7/16-20UNF-2B (female) fluid connection

| | | | |
|-----------|-----------------|---------------------|-------|
| 4...20 mA | M12 | XMLPM00GD2BF | 0.080 |
| | EN 175301-803-A | XMLPM00GC2BF | 0.096 |
| 0...10 V | M12 | XMLPM00GD7BF | 0.080 |
| | EN 175301-803-A | XMLPM00GC7BF | 0.096 |

-1 to 1 bar (-14.5 to 14.5 psi)

Maximum permissible accidental pressure: 3 bar, destruction pressure: 5 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|-------------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLPM01GD21F (1) | 0.080 |
| | EN 175301-803-A | XMLPM01GC21F (1) | 0.096 |
| 0...10 V | M12 | XMLPM01GD71F | 0.080 |
| | EN 175301-803-A | XMLPM01GC71F | 0.096 |

-1 to 5 bar (-14.5 to 72.6 psi)

Maximum permissible accidental pressure: 18 bar, destruction pressure: 24 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|-------------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLPM05GD21F (1) | 0.080 |
| | EN 175301-803-A | XMLPM05GC21F (1) | 0.096 |
| 0...10 V | M12 | XMLPM05GD71F | 0.080 |
| | EN 175301-803-A | XMLPM05GC71F | 0.096 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference. For example, XMLPM00GD21F becomes XMLPM00GD21FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in bar

PF151601



XMLP●●BD●1F

- 1 to 9 bar (- 14.5 to 130 psi)

Maximum permissible accidental pressure: 30 bar, destruction pressure: 60 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|-------------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLPM09BD21F (1) | 0.090 |
| | EN 175301-803-A | XMLPM09BC21F | 0.106 |
| 0...10 V | M12 | XMLPM09BD71F (1) | 0.090 |
| | EN 175301-803-A | XMLPM09BC71F | 0.106 |

XM-EX_522_CPMFS17001



XMLP●●BC●1F

- 1 to 25 bar (- 14.5 to 362.5 psi)

Maximum permissible accidental pressure: 75 bar, destruction pressure: 150 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|---------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLPM25BD21F | 0.090 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference.
For example, **XMLPM09BD21F** becomes **XMLPM09BD21FQ**.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in bar



XMLP●●●●D●1F



XMLP●●●●C●1F



XMLP001GL●1F



XMLP001GC●BF



XMLP001GD●BF

0 to 0.25 bar (0 to 3.63 psi)

Maximum permissible accidental pressure: 3 bar, destruction pressure: 5 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP250MD21F (1) | 0.080 |
| | EN 175301-803-A | XMLP250MC21F (1) | 0.096 |
| 0...10 V | M12 | XMLP250MD71F (1) | 0.080 |
| | EN 175301-803-A | XMLP250MC71F (1) | 0.096 |
| 0.5...4.5 V ratiometric | M12 | XMLP250MD11F | 0.080 |
| | EN 175301-803-A | XMLP250MC11F | 0.096 |

0 to 0.5 bar (0 to 7.26 psi)

Maximum permissible accidental pressure: 3 bar, destruction pressure: 5 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP500MD21F (1) | 0.080 |
| | EN 175301-803-A | XMLP500MC21F (1) | 0.096 |
| 0...10 V | M12 | XMLP500MD71F (1) | 0.080 |
| | EN 175301-803-A | XMLP500MC71F (1) | 0.096 |
| 0.5...4.5 V ratiometric | M12 | XMLP500MD11F | 0.080 |
| | EN 175301-803-A | XMLP500MC11F | 0.096 |

0 to 1 bar (0 to 14.5 psi)

Maximum permissible accidental pressure: 3 bar, destruction pressure: 5 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP001GD21F (1) | 0.080 |
| | EN 175301-803-A | XMLP001GC21F (1) | 0.096 |
| | 2 m cable | XMLP001GL21F | 0.197 |
| 0...10 V | M12 | XMLP001GD71F (1) | 0.080 |
| | EN 175301-803-A | XMLP001GC71F (1) | 0.096 |
| | 2 m cable | XMLP001GL71F | 0.197 |
| 0.5...4.5 V ratiometric | M12 | XMLP001GD11F (1) | 0.080 |
| | EN 175301-803-A | XMLP001GC11F | 0.096 |

SAE 7/16-20UNF-2B (female) fluid connection

| | | | |
|-----------|-----------------|--------------|-------|
| 4...20 mA | M12 | XMLP001GD2BF | 0.080 |
| | EN 175301-803-A | XMLP001GC2BF | 0.096 |
| 0...10 V | M12 | XMLP001GD7BF | 0.080 |
| | EN 175301-803-A | XMLP001GC7BF | 0.096 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference. For example, XMLP250MD21F becomes XMLP250MD21FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry
With analogue output. Sizes in bar



XMLP●●●●D●1F



XMLP●●●●C●1F



XMLP●●●●GL●1F

0 to 2.5 bar (0 to 36.3 psi)

Maximum permissible accidental pressure: 7.5 bar, destruction pressure: 10 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP2D5GD21F (1) | 0.080 |
| | EN 175301-803-A | XMLP2D5GC21F (1) | 0.096 |
| | 2 m cable | XMLP2D5GL21F | 0.197 |
| 0...10 V | M12 | XMLP2D5GD71F (1) | 0.080 |
| | EN 175301-803-A | XMLP2D5GC71F (1) | 0.096 |
| | 2 m cable | XMLP2D5GL71F | 0.197 |
| 0.5...4.5 V ratiometric | M12 | XMLP2D5GD11F | 0.080 |
| | EN 175301-803-A | XMLP2D5GC11F | 0.096 |

0 to 4 bar (0 to 58 psi)

Maximum permissible accidental pressure: 12 bar, destruction pressure: 16 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP004GD21F (1) | 0.080 |
| | EN 175301-803-A | XMLP004GC21F (1) | 0.096 |
| 0...10 V | M12 | XMLP004GD71F (1) | 0.080 |
| | EN 175301-803-A | XMLP004GC71F (1) | 0.096 |
| 0.5...4.5 V ratiometric | M12 | XMLP004GD11F | 0.080 |
| | EN 175301-803-A | XMLP004GC11F | 0.096 |

0 to 6 bar (0 to 87 psi)

Maximum permissible accidental pressure: 18 bar, destruction pressure: 24 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP006GD21F (1) | 0.080 |
| | EN 175301-803-A | XMLP006GC21F (1) | 0.096 |
| | 2 m cable | XMLP006GL21F | 0.197 |
| 0...10 V | M12 | XMLP006GD71F (1) | 0.080 |
| | EN 175301-803-A | XMLP006GC71F (1) | 0.096 |
| | 2 m cable | XMLP006GL71F | 0.197 |
| 0.5...4.5 V ratiometric | M12 | XMLP006GD11F (1) | 0.080 |
| | EN 175301-803-A | XMLP006GC11F | 0.096 |

(1) Sold in lots of 25; add the letter Q to the end of the selected reference.
For example, XMLP004GD71F becomes XMLP004GD71FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in bar



XMLP01●BC●1F



XMLP01●BD●1F



XMLP01●BC270



XMLP01●BD270



XMLP01●BC●90



XMLP01●BD●90

0 to 10 bar (0 to 145 psi)

Maximum permissible accidental pressure: 30 bar, destruction pressure: 60 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP010BD21F (1) | 0.090 |
| | EN 175301-803-A | XMLP010BC21F (1) | 0.106 |
| 0...10 V | M12 | XMLP010BD71F (1) | 0.090 |
| | EN 175301-803-A | XMLP010BC71F (1) | 0.106 |
| 0.5...4.5 V ratiometric | M12 | XMLP010BD11F | 0.090 |
| | EN 175301-803-A | XMLP010BC11F | 0.106 |

SAE 7/16-20UNF-2A (male) fluid connection

| | | | |
|-----------|-----------------|--------------|-------|
| 4...20 mA | M12 | XMLP010BD270 | 0.087 |
| | EN 175301-803-A | XMLP010BC270 | 0.103 |

SAE 7/16-20UNF-2B (female with Schrader pin) fluid connection

| | | | |
|-------------------------|-----------------|------------------|-------|
| 4...20 mA | M12 | XMLP010BD290 (1) | 0.100 |
| | EN 175301-803-A | XMLP010BC290 | 0.116 |
| 0...10 V | M12 | XMLP010BD790 | 0.100 |
| | EN 175301-803-A | XMLP010BC790 | 0.116 |
| 0.5...4.5 V ratiometric | M12 | XMLP010BD190 | 0.100 |

0 to 16 bar (0 to 232 psi)

Maximum permissible accidental pressure: 48 bar, destruction pressure: 96 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP016BD21F (1) | 0.090 |
| | EN 175301-803-A | XMLP016BC21F (1) | 0.106 |
| 0...10 V | M12 | XMLP016BD71F (1) | 0.090 |
| | EN 175301-803-A | XMLP016BC71F (1) | 0.106 |
| 0.5...4.5 V ratiometric | M12 | XMLP016BD11F | 0.090 |
| | EN 175301-803-A | XMLP016BC11F | 0.106 |

SAE 7/16-20UNF-2A (male) fluid connection

| | | | |
|-----------|-----------------|--------------|-------|
| 4...20 mA | M12 | XMLP016BD270 | 0.087 |
| | EN 175301-803-A | XMLP016BC270 | 0.103 |

SAE 7/16-20UNF-2B (female with Schrader pin) fluid connection

| | | | |
|-------------------------|-----------------|--------------|-------|
| 4...20 mA | M12 | XMLP016BD290 | 0.100 |
| | EN 175301-803-A | XMLP016BC290 | 0.116 |
| 0...10 V | M12 | XMLP016BD790 | 0.100 |
| 0.5...4.5 V ratiometric | M12 | XMLP016BD190 | 0.100 |

(1) Sold in lots of 25; add the letter Q to the end of the selected reference. For example, XMLP016BD21F becomes XMLP016BD21FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in bar



XMLP0...BC...1F



XMLP0...BD...1F



XMLP0...BC270



XMLP0...BD270



XMLP0...BC...90



XMLP0...BD...90

0 to 25 bar (0 to 362.5 psi)

Maximum permissible accidental pressure: 75 bar, destruction pressure: 150 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP025BD21F | 0.090 |
| | EN 175301-803-A | XMLP025BC21F | 0.106 |
| 0...10 V | M12 | XMLP025BD71F (1) | 0.090 |
| | EN 175301-803-A | XMLP025BC71F | 0.106 |
| 0.5...4.5 V ratiometric | M12 | XMLP025BD11F | 0.090 |
| | EN 175301-803-A | XMLP025BC11F | 0.106 |

SAE 7/16-20UNF-2A (male) fluid connection

| | | | |
|-----------|-----------------|--------------|-------|
| 4...20 mA | M12 | XMLP025BD270 | 0.087 |
| | EN 175301-803-A | XMLP025BC270 | 0.103 |
| 0...10 V | M12 | XMLP025BD770 | 0.087 |

SAE 7/16-20UNF-2B (female with Schrader pin) fluid connection

| | | | |
|-----------|-----------------|--------------|-------|
| 4...20 mA | M12 | XMLP025BD290 | 0.100 |
| | EN 175301-803-A | XMLP025BC290 | 0.116 |
| 0...10 V | M12 | XMLP025BD790 | 0.100 |

0 to 40 bar (0 to 580 psi)

Maximum permissible accidental pressure: 120 bar, destruction pressure: 240 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP040BD21F (1) | 0.090 |
| | EN 175301-803-A | XMLP040BC21F | 0.106 |
| 0...10 V | M12 | XMLP040BD71F | 0.090 |
| | EN 175301-803-A | XMLP040BC71F | 0.106 |
| 0.5...4.5 V ratiometric | M12 | XMLP040BD11F | 0.090 |
| | EN 175301-803-A | XMLP040BC11F | 0.106 |

SAE 7/16-20UNF-2A (male) fluid connection

| | | | |
|-----------|-----------------|--------------|-------|
| 4...20 mA | M12 | XMLP040BD270 | 0.087 |
| | EN 175301-803-A | XMLP040BC270 | 0.103 |

SAE 7/16-20UNF-2B (female with Schrader pin) fluid connection

| | | | |
|-------------------------|-----------------|------------------|-------|
| 4...20 mA | M12 | XMLP040BD290 (1) | 0.100 |
| | EN 175301-803-A | XMLP040BC290 (1) | 0.116 |
| 0...10 V | M12 | XMLP040BD790 | 0.100 |
| 0.5...4.5 V ratiometric | M12 | XMLP040BD190 | 0.100 |

(1) Sold in lots of 25; add the letter Q to the end of the selected reference. For example, XMLP040BD21F becomes XMLP040BD21FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in bar



XMLP●●●BC●1F



XMLP●●●BD●1F



XMLP060BD270



XMLP060BC290



XMLP060BD●90

0 to 60 bar (0 to 870 psi)

Maximum permissible accidental pressure: 180 bar, destruction pressure: 360 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP060BD21F (1) | 0.090 |
| | EN 175301-803-A | XMLP060BC21F | 0.106 |
| 0...10 V | M12 | XMLP060BD71F (1) | 0.090 |
| | EN 175301-803-A | XMLP060BC71F (1) | 0.106 |
| 0.5...4.5 V ratiometric | M12 | XMLP060BD11F | 0.090 |
| | EN 175301-803-A | XMLP060BC11F | 0.106 |

SAE 7/16-20UNF-2A (male) fluid connection

| | | | |
|-----------|-----|--------------|-------|
| 4...20 mA | M12 | XMLP060BD270 | 0.087 |
|-----------|-----|--------------|-------|

SAE 7/16-20UNF-2B (female with Schrader pin) fluid connection

| | | | |
|-----------|-----------------|--------------|-------|
| 4...20 mA | M12 | XMLP060BD290 | 0.100 |
| | EN 175301-803-A | XMLP060BC290 | 0.116 |
| 0...10 V | M12 | XMLP060BD790 | 0.100 |

0 to 100 bar (0 to 1450 psi)

Maximum permissible accidental pressure: 300 bar, destruction pressure: 600 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP100BD21F (1) | 0.094 |
| | EN 175301-803-A | XMLP100BC21F | 0.110 |
| 0...10 V | M12 | XMLP100BD71F (1) | 0.094 |
| | EN 175301-803-A | XMLP100BC71F | 0.110 |
| 0.5...4.5 V ratiometric | M12 | XMLP100BD11F | 0.094 |
| | EN 175301-803-A | XMLP100BC11F | 0.110 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference. For example, XMLP060BD21F becomes XMLP060BD21FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in bar



XMLP●●●BC●1F

XMLP●●●BD●1F

0 to 160 bar (0 to 2320 psi)

Maximum permissible accidental pressure: 480 bar, destruction pressure: 960 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|--------------|-----------|
| G 1/4 A DIN 3852-A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP160BD21F | 0.094 |
| | EN 175301-803-A | XMLP160BC21F | 0.110 |
| 0...10 V | M12 | XMLP160BD71F | 0.094 |
| | EN 175301-803-A | XMLP160BC71F | 0.110 |
| 0.5...4.5 V ratiometric | M12 | XMLP160BD11F | 0.094 |

0 to 250 bar (0 to 3625 psi)

Maximum permissible accidental pressure: 750 bar, destruction pressure: 1500 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP250BD21F (1) | 0.094 |
| | EN 175301-803-A | XMLP250BC21F | 0.110 |
| 0...10 V | M12 | XMLP250BD71F (1) | 0.094 |
| | EN 175301-803-A | XMLP250BC71F (1) | 0.110 |
| 0.5...4.5 V ratiometric | M12 | XMLP250BD11F | 0.094 |
| | EN 175301-803-A | XMLP250BC11F | 0.110 |

0 to 400 bar (0 to 5800 psi)

Maximum permissible accidental pressure: 1200 bar, destruction pressure: 2400 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|------------------|-----------|
| G 1/4 A DIN 3852-A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP400BD21F (1) | 0.094 |
| | EN 175301-803-A | XMLP400BC21F (1) | 0.110 |
| 0...10 V | M12 | XMLP400BD71F | 0.094 |
| | EN 175301-803-A | XMLP400BC71F (1) | 0.110 |
| 0.5...4.5 V ratiometric | M12 | XMLP400BD11F | 0.094 |
| | EN 175301-803-A | XMLP400BC11F | 0.110 |

0 to 600 bar (0 to 8700 psi)

Maximum permissible accidental pressure: 1500 bar, destruction pressure: 2400 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|--------------|-----------|
| G 1/4 A DIN 3852-A (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP600BD21F | 0.094 |
| | EN 175301-803-A | XMLP600BC21F | 0.110 |
| 0...10 V | M12 | XMLP600BD71F | 0.094 |
| | EN 175301-803-A | XMLP600BC71F | 0.110 |
| 0.5...4.5 V ratiometric | M12 | XMLP600BD11F | 0.094 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference.
For example, XMLP250BD21F becomes XMLP250BD21FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in psi



XMLP000RD03F



XMLP000RC03F



XMLP000RP03F

-14.5 to 0 psi (-1 to 0 bar)

Maximum permissible accidental pressure: 44 psi, destruction pressure: 73 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLPM00RD23F (1) | 0.078 |
| | EN 175301-803-A | XMLPM00RC23F | 0.094 |
| | Packard Metri-Pack 150 | XMLPM00RP23F | 0.080 |
| 0...10 V | M12 | XMLPM00RD73F (1) | 0.078 |
| | EN 175301-803-A | XMLPM00RC73F | 0.094 |
| | Packard Metri-Pack 150 | XMLPM00RP73F | 0.080 |
| 0.5...4.5 V ratiometric | M12 | XMLPM00RD13F | 0.078 |
| | EN 175301-803-A | XMLPM00RC13F | 0.094 |
| | Packard Metri-Pack 150 | XMLPM00RP13F | 0.080 |

-14.5 to 15 psi (-1 to 1.03 bar)

Maximum permissible accidental pressure: 44 psi, destruction pressure: 73 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLPM15RD23F (1) | 0.078 |
| | EN 175301-803-A | XMLPM15RC23F | 0.094 |
| | Packard Metri-Pack 150 | XMLPM15RP23F (1) | 0.080 |
| 0...10 V | M12 | XMLPM15RD73F (1) | 0.078 |

-14.5 to 60 psi (-1 to 4.14 bar)

Maximum permissible accidental pressure: 260 psi, destruction pressure: 350 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLPM60RD23F (1) | 0.078 |
| | EN 175301-803-A | XMLPM60RC23F | 0.094 |
| | Packard Metri-Pack 150 | XMLPM60RP23F | 0.080 |
| 0...10 V | M12 | XMLPM60RD73F (1) | 0.078 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference.
For example, XMLPM00RD23F becomes XMLPM00RD23FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in psi

PF151605



XMLP000RD03F

PF151606



XMLP000RC03F

PF151607



XMLP000RP03F

0 to 15 psi (0 to 1.03 bar)

Maximum permissible accidental pressure: 44 psi, destruction pressure: 73 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP015RD23F (1) | 0.078 |
| | EN 175301-803-A | XMLP015RC23F | 0.094 |
| | Packard Metri-Pack 150 | XMLP015RP23F | 0.080 |
| 0...10 V | M12 | XMLP015RD73F (1) | 0.078 |
| | EN 175301-803-A | XMLP015RC73F | 0.094 |
| | Packard Metri-Pack 150 | XMLP015RP73F | 0.080 |

0 to 30 psi (0 to 2.07 bar)

Maximum permissible accidental pressure: 109 psi, destruction pressure: 145 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP030RD23F (1) | 0.078 |
| | EN 175301-803-A | XMLP030RC23F | 0.094 |
| | Packard Metri-Pack 150 | XMLP030RP23F | 0.080 |
| 0...10 V | M12 | XMLP030RD73F (1) | 0.078 |
| | EN 175301-803-A | XMLP030RC73F | 0.094 |
| | Packard Metri-Pack 150 | XMLP030RP73F | 0.080 |

0 to 50 psi (0 to 3.45 bar)

Maximum permissible accidental pressure: 174 psi, destruction pressure: 232 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP050RD23F (1) | 0.078 |
| | EN 175301-803-A | XMLP050RC23F | 0.094 |
| | Packard Metri-Pack 150 | XMLP050RP23F | 0.080 |
| 0...10 V | M12 | XMLP050RD73F (1) | 0.078 |

0 to 100 psi (0 to 6.9 bar)

Maximum permissible accidental pressure: 260 psi, destruction pressure: 340 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|---------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP100RD23F | 0.078 |
| 0...10 V | M12 | XMLP100RD73F | 0.078 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference.
For example, XMLP030RD73F becomes XMLP030RD73FQ.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in psi

PF151605



XMLP●●0PD●30

PF151607



XMLP●●0PP●30

0 to 100 psi (0 to 6.9 bar)

Maximum permissible accidental pressure: 300 psi, destruction pressure: 900 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP100PD230 (1) | 0.088 |
| | Packard Metri-Pack 150 | XMLP100PP230 (1) | 0.090 |
| 0...10 V | M12 | XMLP100PD730 | 0.088 |
| | Packard Metri-Pack 150 | XMLP100PP730 | 0.090 |
| 0.5...4.5 V ratiometric | M12 | XMLP100PD130 | 0.088 |
| | Packard Metri-Pack 150 | XMLP100PP130 | 0.090 |

0 to 150 psi (0 to 10.3 bar)

Maximum permissible accidental pressure: 450 psi, destruction pressure: 900 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP150PD230 (1) | 0.088 |
| | Packard Metri-Pack 150 | XMLP150PP230 | 0.090 |
| 0...10 V | M12 | XMLP150PD730 | 0.088 |
| | Packard Metri-Pack 150 | XMLP150PP730 | 0.090 |
| 0.5...4.5 V ratiometric | M12 | XMLP150PD130 | 0.088 |

0 to 200 psi (0 to 13.8 bar)

Maximum permissible accidental pressure: 600 psi, destruction pressure: 1400 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP200PD230 (1) | 0.088 |
| | Packard Metri-Pack 150 | XMLP200PP230 | 0.090 |
| 0...10 V | M12 | XMLP200PD730 | 0.088 |
| | Packard Metri-Pack 150 | XMLP200PP730 | 0.090 |
| 0.5...4.5 V ratiometric | M12 | XMLP200PD130 | 0.088 |

(1) Sold in lots of 25; add the letter Q to the end of the selected reference. For example, XMLP100PD230 becomes XMLP100PD230Q.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry
With analogue output. Sizes in psi

PF151605



XMLP●●0PD●30

PF151607



XMLP●●0PP●30

0 to 300 psi (0 to 20.7 bar)

Maximum permissible accidental pressure: 900 psi, destruction pressure: 2200 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP300PD230 (1) | 0.088 |
| | Packard Metri-Pack 150 | XMLP300PP230 | 0.090 |
| 0...10 V | M12 | XMLP300PD730 | 0.088 |
| | Packard Metri-Pack 150 | XMLP300PP730 | 0.090 |
| 0.5...4.5 V ratiometric | M12 | XMLP300PD130 | 0.088 |
| | Packard Metri-Pack 150 | XMLP300PP130 | 0.090 |

0 to 600 psi (0 to 41.4 bar)

Maximum permissible accidental pressure: 1800 psi, destruction pressure: 3600 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP600PD230 | 0.088 |
| | Packard Metri-Pack 150 | XMLP600PP230 (1) | 0.090 |
| 0...10 V | M12 | XMLP600PD730 | 0.088 |
| | Packard Metri-Pack 150 | XMLP600PP730 | 0.090 |
| 0.5...4.5 V ratiometric | M12 | XMLP600PD130 | 0.088 |
| | Packard Metri-Pack 150 | XMLP600PP130 | 0.090 |

0 to 1000 psi (0 to 69 bar)

Maximum permissible accidental pressure: 3000 psi, destruction pressure: 6000 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|---------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP1K0PD230 | 0.088 |
| | Packard Metri-Pack 150 | XMLP1K0PP230 | 0.090 |
| 0...10 V | M12 | XMLP1K0PD730 | 0.088 |
| | Packard Metri-Pack 150 | XMLP1K0PP730 | 0.090 |
| 0.5...4.5 V ratiometric | M12 | XMLP1K0PD130 | 0.088 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference.
For example, **XMLP600PP230** becomes **XMLP600PP230Q**.

Electronic pressure sensors

OsiSense XM

XMLP pressure transmitters

Compact metal body, 316L stainless steel fluid entry

With analogue output. Sizes in psi

PF151605



XMLP•K0PD•30

PF151607



XMLP•K0PP•30

0 to 2000 psi (0 to 138 bar)

Maximum permissible accidental pressure: 6000 psi, destruction pressure: 12 000 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|---------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP2K0PD230 | 0.092 |
| 0...10 V | M12 | XMLP2K0PD730 | 0.092 |
| 0.5...4.5 V ratiometric | M12 | XMLP2K0PD130 | 0.092 |

0 to 3000 psi (0 to 207 bar)

Maximum permissible accidental pressure: 9000 psi, destruction pressure: 18 000 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP3K0PD230 | 0.092 |
| | Packard Metri-Pack 150 | XMLP3K0PP230 | 0.094 |
| 0...10 V | M12 | XMLP3K0PD730 (1) | 0.092 |
| | Packard Metri-Pack 150 | XMLP3K0PP730 | 0.094 |
| 0.5...4.5 V ratiometric | M12 | XMLP3K0PD130 | 0.092 |

0 to 6000 psi (0 to 414 bar)

Maximum permissible accidental pressure: 18 000 psi, destruction pressure: 36 000 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------|-------------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | M12 | XMLP6K0PD230 | 0.092 |
| | Packard Metri-Pack 150 | XMLP6K0PP730 | 0.094 |
| 0...10 V | M12 | XMLP6K0PD730 | 0.092 |
| | Packard Metri-Pack 150 | XMLP6K0PP130 (1) | 0.094 |
| 0.5...4.5 V ratiometric | M12 | XMLP6K0PD130 | 0.092 |
| | Packard Metri-Pack 150 | XMLP6K0PP130 (1) | 0.094 |

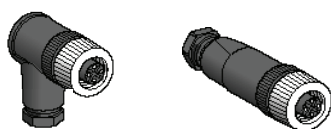
(1) Sold in lots of 25: add the letter Q to the end of the selected reference. For example, XMLP6K0PP130 becomes XMLP6K0PP130Q.

Electronic pressure sensors

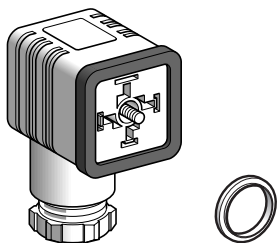
OsiSense XM
XMLP pressure transmitters
Separate parts



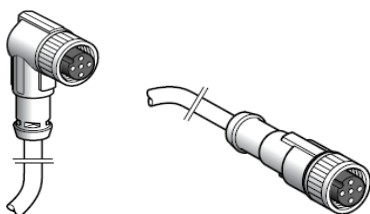
ZMLPA1●2SH



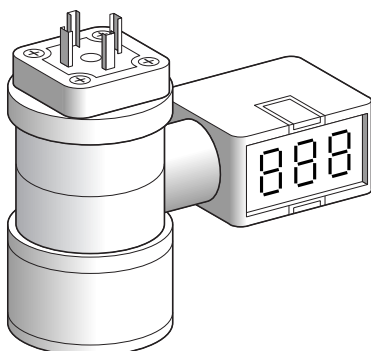
XZCC12FCM40B XZCC12FDM40B



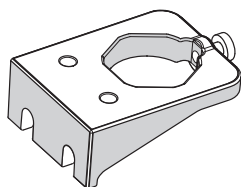
XZCC43FCP40B XMLZL016



XZCP1241L5 XZCP1141L10



XMLEZ●●●



XMLZL017

Switches with display for XMLP●●●●D2●● pressure transmitters (1)

| Analogue output type | Solid-state output type | Switching mode | Reference | Weight kg |
|----------------------|-------------------------|----------------|------------|-----------|
| 4...20 mA | 1 x PNP | Hysteresis | ZMLPA1P2SH | 0.104 |
| | | Window | ZMLPA1P2SW | 0.104 |
| | 1 x NPN | Hysteresis | ZMLPA1N2SH | 0.104 |
| | | Window | ZMLPA1N2SW | 0.104 |
| – | 2 x PNP | Hysteresis | ZMLPA2P0SH | 0.104 |
| – | 2 x NPN | Hysteresis | ZMLPA2N0SH | 0.104 |

Accessories

| Description | Type | Reference | Weight kg |
|--|----------|--------------|-----------|
| Sealing gasket (Pack of 10 gaskets) | – | XMLZL016 | 0.025 |
| M12 female connector metal clamping ring (2) | Straight | XZCC12FDM40B | 0.020 |
| | Elbowed | XZCC12FCM40B | 0.020 |
| EN 175301-803-A female connector (2) | – | XZCC43FCP40B | 0.035 |

| Description | Cable length | Cable material | Reference | Weight kg |
|--|--------------|----------------|--------------|-----------|
| Pre-wired M12, straight, female connectors | 2 m | PUR | XZCP1141L2 | 0.090 |
| | | PVC | XZCPV1141L2 | 0.110 |
| | 5 m | PUR | XZCP1141L5 | 0.190 |
| | | PVC | XZCPV1141L5 | 0.210 |
| | 10 m | PUR | XZCP1141L10 | 0.370 |
| | | PVC | XZCPV1141L10 | 0.390 |
| Pre-wired M12, elbowed, female connectors | 2 m | PUR | XZCP1241L2 | 0.090 |
| | | PVC | XZCPV1241L2 | 0.110 |
| | 5 m | PUR | XZCP1241L5 | 0.190 |
| | | PVC | XZCPV1241L5 | 0.210 |
| | 10 m | PUR | XZCP1241L10 | 0.370 |
| | | PVC | XZCPV1241L10 | 0.390 |

| Description | For use with | Size of transmitter bar | Reference | Weight kg |
|--|---|-------------------------|-----------|-----------|
| Digital displays for pressure transmitters | XMLPM00GC2●● | - 1...0 | XMLEZM01 | 0.100 |
| | XMLP001GC2●● | 0...1 | XMLEZ001 | 0.100 |
| | XMLP010BC2●● | 0...10 | XMLEZ010 | 0.100 |
| | XMLP025BC2●● | 0...25 | XMLEZ025 | 0.100 |
| | XMLP060BC2●● | 0...60 | XMLEZ060 | 0.100 |
| | XMLP100BC2●● | 0...100 | XMLEZ100 | 0.100 |
| | XMLP250BC2●● | 0...250 | XMLEZ250 | 0.100 |
| | XMLP600BC2●● | 0...600 | XMLEZ600 | 0.100 |
| Fixing bracket (aluminium) | XMLP●●●M●●● XMLP●●●G●●● XMLP●●●R●●● | – | XMLZL017 | 0.029 |

(1) ZMLP switches are compatible with pressure transmitters with 4...20 mA analogue output and M12 connector (see pages 44 and 45).

(2) Connector with screw terminal connections.

Note: For other connection accessories, visit our website www.tesensors.com.

Electronic pressure sensors

OsiSense XM

XMEP pressure transmitters for mobile equipments

OsiSense XMEP

OsiSense XMEP pressure transmitters are used to control and measure pressure levels in hydraulic systems in mobile equipments.

These sensors are particularly suitable for mobile cranes, forklift trucks, aerial platforms, construction machinery, agricultural and forestry machinery, fire trucks and garbage trucks, etc.

Mobile equipments are used in locations characterised by harsh environmental conditions, subject to pressure peaks and high vibration levels.

Telemecanique Sensors supplies an ideal solution for this type of equipment. OsiSense XMEP pressure transmitters offer dedicated electrical connections and temperature ranges, degrees of protection and levels of EMC immunity appropriate to these applications.

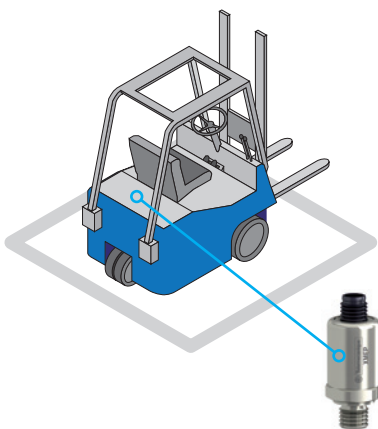
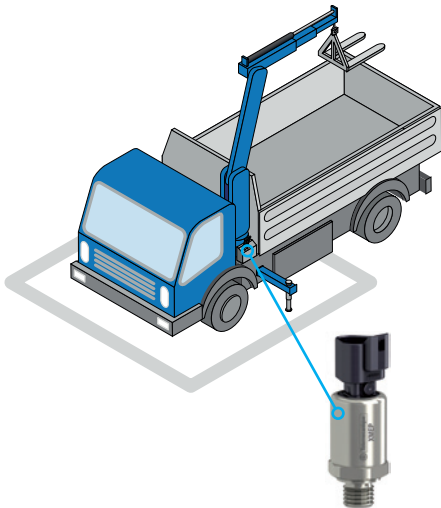
In addition, OsiSense XMEP transmitters are among the most compact on the market, which makes them easy to integrate into confined spaces in mobile equipments.

These pressure transmitters are available for pressure ranges from 0...60 bar to 0...600 bar (0...1000 psi to 0...7500 psi) and are equipped with the most commonly used fluid entries, G1/4 and 1/4"-18NPT male.

OsiSense XMEP transmitters have an analogue output which delivers a signal proportional to the measured pressure.

This output can be one of the following types:

- > 4...20 mA
- > 0...10 V
- > 0.5...4.5 V ratiometric

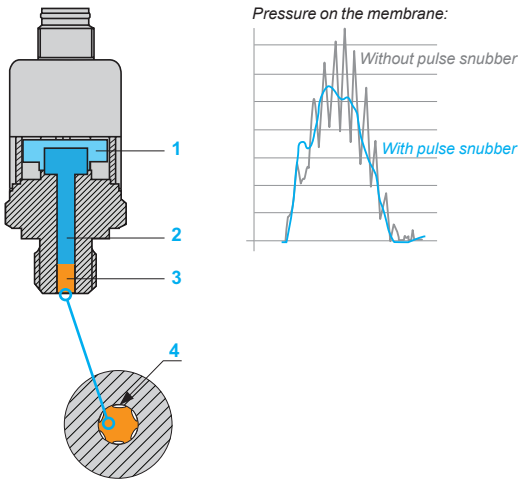


Specially designed for mobile equipments

- > Designed to be supplied by 12 or 24 volt battery or via ratiometric output controller.
- > Equipped with the most widely used connectors for this type of application: M12, Deutsch DT04-3P, AMP Superseal or AMP Junior Power Time. The connector is factory-mounted which helps to ensure greater contact reliability over time.
- > Reliable operation over a wide temperature range from - 40 °C to + 100 °C.
- > Designed to comply with the requirements of the following standards:
 - > EN 13309 (Construction machinery)
 - > ISO 13766 (Earth-moving machinery)
 - > ISO 14982 (Agricultural and forestry machinery)
 - > UNECE 10R-5 (Automotive industry)



+ Simple, effective pressure control in your mobile equipments



- 1: Metal membrane
- 2: Inlet pipe
- 3: Pulse snubber inserted inside the inlet pipe to protect the membrane from pressure surges
- 4: 6 slots to allow the fluid to pass through at a reduced flow rate

Rugged, compact and certified

Rugged

- > Excellent mechanical and corrosion resistance provided by the 316L stainless steel housing and glass fibre reinforced polyarylamide connector
- > High resistance to pressure surges (3 times nominal pressure)
- > Built-in pulse snubber to help protect against water hammer (pressure surges)
- > High immunity to electromagnetic interference, up to 100 V/m conforming to standard ISO 11452
- > High shock and vibration resistance
- > Protected against temporary immersion and high pressure cleaning processes (IP65, IP67 and IP69K)

Compact

- > 24 mm diameter and height ranging from 38 to 62 mm depending on the electrical connection



The OsiSense XMEP pressure sensor's compact dimensions mean it can be easily integrated into mobile equipments.

Certified

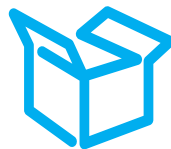
- > cULus conforming to UL 61010-1
- > E2 conforming to UNECE 10R-5
- > Compliant with environmental RoHs and REACH standards



Sold in lots

Depending on the model, XMEP transmitters are sold:

- > Individually
- > In lots of 25, for easy unpacking and less packaging waste



75%

less packaging
helping to preserve our environment
and make your life easier

Electronic pressure sensors

OsiSense XM

XMEP pressure transmitters for mobile equipments

With analogue output

Sizes in bar

XM-EX_522_CPSCT16005



XMEP00BD1F

XM-EX_522_CPSCT16004



XMEP00BT1F

XM-EX_522_CPSCT16002



XMEP00BV1F

XM-EX_522_CPSCT16001



XMEP250BJ1F

0 to 60 bar (0 to 870 psi)

Maximum permissible accidental pressure: 150 bar, destruction pressure: 300 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMEP060BD21F | 0.095 |
| | Deutsch DT04-3P | XMEP060BT21F | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP060BV21F | 0.098 |
| 0...10 V | M12 | XMEP060BD71F | 0.095 |
| | Deutsch DT04-3P | XMEP060BT71F | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP060BV71F | 0.098 |
| 0.5...4.5 V ratiometric | M12 | XMEP060BD11F | 0.095 |
| | Deutsch DT04-3P | XMEP060BT11F | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP060BV11F | 0.098 |

0 to 100 bar (0 to 1450 psi)

Maximum permissible accidental pressure: 300 bar, destruction pressure: 600 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMEP100BD21F | 0.095 |
| | Deutsch DT04-3P | XMEP100BT21F | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP100BV21F | 0.098 |
| 0...10 V | M12 | XMEP100BD71F | 0.095 |
| | Deutsch DT04-3P | XMEP100BT71F | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP100BV71F | 0.098 |
| 0.5...4.5 V ratiometric | M12 | XMEP100BD11F | 0.095 |
| | Deutsch DT04-3P | XMEP100BT11F | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP100BV11F | 0.098 |

0 to 250 bar (0 to 3625 psi)

Maximum permissible accidental pressure: 750 bar, destruction pressure: 1500 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------------|------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMEP250BD21F (1) | 0.095 |
| | Deutsch DT04-3P | XMEP250BT21F (1) | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP250BV21F (1) | 0.098 |
| | AMP Junior Power Timer 3-pin | XMEP250BJ21F (1) | 0.098 |
| 0...10 V | M12 | XMEP250BD71F (1) | 0.095 |
| | Deutsch DT04-3P | XMEP250BT71F (1) | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP250BV71F (1) | 0.098 |
| 0.5...4.5 V ratiometric | M12 | XMEP250BD11F (1) | 0.095 |
| | Deutsch DT04-3P | XMEP250BT11F (1) | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP250BV11F (1) | 0.098 |
| | AMP Junior Power Timer 3-pin | XMEP250BJ11F (1) | 0.098 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference. For example, XMEP250BD21F becomes XMEP250BD21FQ.

Electronic pressure sensors

OsiSense XM

XMEP pressure transmitters for mobile equipments

With analogue output

Sizes in bar

XMEX_522_CPSCT16005



XMEP●00BD●1F

XMEX_522_CPSCT16004



XMEP●00BT●1F

XMEX_522_CPSCT16002



XMEP●00BV●1F

XMEX_522_CPSCT16001



XMEP400BJ●1F

0 to 400 bar (0 to 5800 psi)

Maximum permissible accidental pressure: 1200 bar, destruction pressure: 2400 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|------------------------------|-------------------------|-------------------------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMEP400BD21F (1) | 0.095 |
| | Deutsch DT04-3P | XMEP400BT21F (1) | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP400BV21F (1) | 0.098 |
| | AMP Junior Power Timer 3-pin | XMEP400BJ21F (1) | 0.098 |
| 0...10 V | M12 | XMEP400BD71F (1) | 0.095 |
| | Deutsch DT04-3P | XMEP400BT71F (1) | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP400BV71F (1) | 0.098 |
| | 0.5...4.5 V ratiometric | M12 | XMEP400BD11F (1) |
| Deutsch DT04-3P | | XMEP400BT11F (1) | 0.098 |
| AMP Superseal 1.5 3-pin | | XMEP400BV11F (1) | 0.098 |
| AMP Junior Power Timer 3-pin | | XMEP400BJ11F (1) | 0.098 |

0 to 600 bar (0 to 8700 psi)

Maximum permissible accidental pressure: 1500 bar, destruction pressure: 2400 bar

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-------------------------|-------------------------|-----------|
| G 1/4 A DIN 3852-E (male) fluid connection | | | |
| 4...20 mA | M12 | XMEP600BD21F | 0.095 |
| | Deutsch DT04-3P | XMEP600BT21F (1) | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP600BV21F | 0.098 |
| 0...10 V | M12 | XMEP600BD71F (1) | 0.095 |
| | Deutsch DT04-3P | XMEP600BT71F | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP600BV71F | 0.098 |
| 0.5...4.5 V ratiometric | M12 | XMEP600BD11F | 0.095 |
| | Deutsch DT04-3P | XMEP600BT11F | 0.098 |
| | AMP Superseal 1.5 3-pin | XMEP600BV11F | 0.098 |

(1) Sold in lots of 25: add the letter Q to the end of the selected reference.
For example, **XMEP400BD21F** becomes **XMEP400BD21FQ**.

Electronic pressure sensors

OsiSense XM

XMEP pressure transmitters for mobile equipments

With analogue output

Sizes in psi

XMEP_522_CPSCT16003



XMEP●K●PT●30

0 to 1000 psi (0 to 69 bar)

Maximum permissible accidental pressure: 2200 psi, destruction pressure: 4400 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|---------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | Deutsch DT04-3P | XMEP1K0PT230 | 0.098 |
| 0...10 V | Deutsch DT04-3P | XMEP1K0PT730 | 0.098 |
| 0.5...4.5 V ratiometric | Deutsch DT04-3P | XMEP1K0PT130 | 0.098 |

0 to 3000 psi (0 to 207 bar)

Maximum permissible accidental pressure: 9000 psi, destruction pressure: 18,000 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|---------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | Deutsch DT04-3P | XMEP3K0PT230 | 0.098 |
| 0...10 V | Deutsch DT04-3P | XMEP3K0PT730 | 0.098 |
| 0.5...4.5 V ratiometric | Deutsch DT04-3P | XMEP3K0PT130 | 0.098 |

0 to 5000 psi (0 to 345 bar)

Maximum permissible accidental pressure: 15,000 psi, destruction pressure: 30,000 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|---------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | Deutsch DT04-3P | XMEP5K0PT230 | 0.098 |
| 0...10 V | Deutsch DT04-3P | XMEP5K0PT730 | 0.098 |
| 0.5...4.5 V ratiometric | Deutsch DT04-3P | XMEP5K0PT130 | 0.098 |

0 to 7500 psi (0 to 517 bar)

Maximum permissible accidental pressure: 18,750 psi, destruction pressure: 30,000 psi

| Analogue output type | Electrical connection | Reference | Weight kg |
|---|-----------------------|---------------------|-----------|
| 1/4" - 18NPT (male) fluid connection | | | |
| 4...20 mA | Deutsch DT04-3P | XMEP7K5PT230 | 0.098 |
| 0...10 V | Deutsch DT04-3P | XMEP7K5PT730 | 0.098 |
| 0.5...4.5 V ratiometric | Deutsch DT04-3P | XMEP7K5PT130 | 0.098 |

Electronic pressure sensors

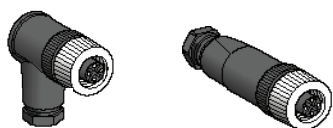
OsiSense XM

XMEP pressure transmitters for mobile equipments

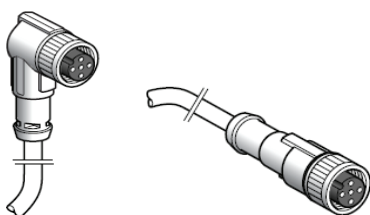
Separate parts



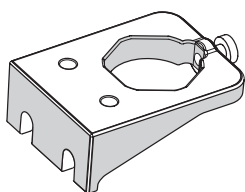
ZMLPA1•2SH



XZCC12FCM40B XZCC12FDM40B



XZCP1241L5 XZCP1141L10



XMLZL017

Switches with display for pressure transmitters (1)

| Analogue output type | Solid-state output type | Switching mode | Reference | Weight kg |
|----------------------|-------------------------|----------------|------------|-----------|
| 4...20 mA | 1 x PNP | Hysteresis | ZMLPA1P2SH | 0.104 |
| | | Window | ZMLPA1P2SW | 0.104 |
| | 1 x NPN | Hysteresis | ZMLPA1N2SH | 0.104 |
| | | Window | ZMLPA1N2SW | 0.104 |
| – | 2 x PNP | Hysteresis | ZMLPA2P0SH | 0.104 |
| – | 2 x NPN | Hysteresis | ZMLPA2N0SH | 0.104 |

Connection accessories (2)

| Description | Type | Reference | Weight kg |
|--|----------|--------------|-----------|
| M12 female connector metal clamping ring (3) | Straight | XZCC12FDM40B | 0.020 |
| | Elbowed | XZCC12FCM40B | 0.020 |

| Description | Cable length | Cable material | Reference | Weight kg |
|--|--------------|----------------|--------------|-----------|
| Pre-wired M12, straight, female connectors | 2 m | PUR | XZCP1141L2 | 0.090 |
| | | PVC | XZCPV1141L2 | 0.110 |
| | 5 m | PUR | XZCP1141L5 | 0.190 |
| | | PVC | XZCPV1141L5 | 0.210 |
| | 10 m | PUR | XZCP1141L10 | 0.370 |
| | | PVC | XZCPV1141L10 | 0.390 |
| Pre-wired M12, elbowed, female connectors | 2 m | PUR | XZCP1241L2 | 0.090 |
| | | PVC | XZCPV1241L2 | 0.110 |
| | 5 m | PUR | XZCP1241L5 | 0.190 |
| | | PVC | XZCPV1241L5 | 0.210 |
| | 10 m | PUR | XZCP1241L10 | 0.370 |
| | | PVC | XZCPV1241L10 | 0.390 |

Mounting accessory

| Description | For use with | Reference | Weight kg |
|----------------------------|-----------------------|-----------|-----------|
| Fixing bracket (aluminium) | All XMEP transmitters | XMLZL017 | 0.029 |

(1) ZMLP switches are compatible with pressure transmitters with 4...20 mA analogue output and M12 connector. See XMEP•••0BD21F pressure transmitters with male M12 connector (pages 40 and 41).

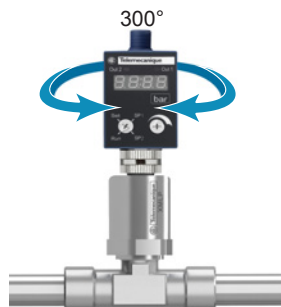
(2) For XMEP•••••D••• pressure transmitters with male M12 connector.

(3) Connector with screw terminal connections.



Example of direct mounting on the pressure transmitter.

Example of remote mounting (with jumper cable and fixing bracket).



Presentation

Combined with a pressure transmitter, the ZMLP switch with display converts an analogue signal into one or two switching outputs with adjustable thresholds. It can also be used to display the measured pressure. One of 27 display ranges, from -14.5 to 6000, can be selected for this purpose, meaning the switch can adapt to the majority of pressure transmitters, whether calibrated in bar, psi or pascal.

Depending on the model, ZMLP switches with display are available with different output configurations:

- One 4...20 mA analogue output and one switching output, PNP or NPN type, hysteresis or window switching mode.
- Two switching outputs, PNP or NPN type, hysteresis switching mode (fixed hysteresis).

Compact and robust:

Its compact housing made of Valox™ PBT and polyester front face provide it with IP65, IP67 and IP69K degrees of protection, making it suitable for the harshest environments. These products are for a nominal supply voltage of 24 V $\overline{\text{---}}$ and have a 17 to 33 V $\overline{\text{---}}$ operating range.

Simplicity of setup:

These products must be connected to an electronic pressure transmitter with 4...20 mA analogue output and 4-pin M12 connector.

They can be mounted:

- Directly on the pressure transmitter. The product body can then pivot through 300°, enabling optimum orientation of the display and settings.
- Or mounted remotely, up to 20 metres from the transmitter, using a simple jumper cable. In this case, clever design accessories allow the product to be fixed in place quickly, horizontally, vertically or even directly on the pressure inlet pipe.

Description

- 1 4-pin male M12 output connector, for connection to an automation platform.
- 2 Indicator LEDs displaying the output status (LED lit when the output has been activated).
- 3 7-segment/4-digit display.
- 4 Pressure unit indication, bar by default, psi, kPa or MPa by the addition of an adhesive label supplied with the product.
- 5 Potentiometer for selecting the display size and adjusting the switching threshold values.
- 6 4-position rotary switch for selecting the parameter to be configured.
- 7 4-pin female M12 connector, for connection to the pressure transmitter.

Functions

Configurable functions

For the display:

- Pressure unit (bar, psi, kPa and MPa)
- 27 display ranges can be selected, from -14.5 to 6000

For the solid-state output(s):

- NO or NC contact

Locking/unlocking:

- In order to avoid losing the product settings accidentally, the product can be locked. The settings cannot then be changed

Fast diagnostic function

- Illumination of all the display segments on each power-up, enabling checking of their operation

Electronic pressure sensors

OsiSense XM

ZMLP switches with 4-digit display



ZMLPA1●2SH



ZMLPA1●2SW



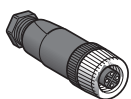
ZMLPA2●0SH



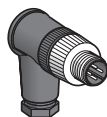
XMLPZLH01



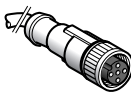
XMLPZLV01



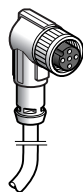
XZCC12FDM40B



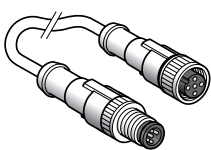
XZCC12MCM40B



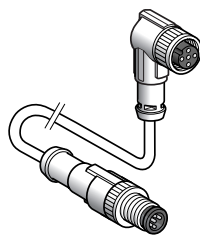
XZCP1141L●



XZCP1241L●



XZCR1511040A●



XZCR1512040A●

Switches with a display for OsiSense XMLP pressure sensors (1)

| Analogue output type | Solid-state output type | Switching mode | Reference | Weight kg |
|----------------------|-------------------------|----------------|------------|-----------|
| 4...20 mA | 1 x PNP | Hysteresis | ZMLPA1P2SH | 0.104 |
| | | Window | ZMLPA1P2SW | 0.104 |
| | 1 x NPN | Hysteresis | ZMLPA1N2SH | 0.104 |
| | | Window | ZMLPA1N2SW | 0.104 |
| - | 2 x PNP | Hysteresis | ZMLPA2P0SH | 0.104 |
| | 2 x NPN | Hysteresis | ZMLPA2N0SH | 0.104 |

Fixing brackets for ZMLP switches with display

| Description | Reference | Weight kg |
|---|-----------|-----------|
| Metal bracket for fixing horizontally | XMLPZLH01 | 0.012 |
| Metal bracket for fixing vertically or on an inlet pipe | XMLPZLV01 | 0.024 |

Cabling accessories

| Type | Length of cable m | Reference | Weight kg |
|--|-------------------|--------------|-----------|
| 4-pin M12 connectors, for connection on screw terminals (2) | | | |
| Straight female connector | - | XZCC12FDM40B | 0.020 |
| Elbowed female connector | - | XZCC12FCM40B | 0.020 |
| Straight male connector | - | XZCC12MDM40B | 0.025 |
| Elbowed male connector | - | XZCC12MCM40B | 0.025 |

Pre-wired M12, 4-pin connectors (PUR cable)

| | | | |
|---------------------------|----|-------------|-------|
| Straight female connector | 2 | XZCP1141L2 | 0.090 |
| | 5 | XZCP1141L5 | 0.190 |
| | 10 | XZCP1141L10 | 0.370 |
| | 15 | XZCP1141L15 | 0.500 |
| | 20 | XZCP1141L20 | 0.750 |
| Elbowed female connector | 2 | XZCP1241L2 | 0.090 |
| | 5 | XZCP1241L5 | 0.190 |
| | 10 | XZCP1241L10 | 0.370 |
| | 15 | XZCP1241L15 | 0.500 |
| | 20 | XZCP1241L20 | 0.750 |

M12-M12, 3-pin jumper cables (PUR cable) (2)

| | | | |
|---|---|---------------|-------|
| Straight male and female connectors | 1 | XZCR1511040A1 | 0.065 |
| | 2 | XZCR1511040A2 | 0.095 |
| Straight male connector, elbowed female connector | 1 | XZCR1512040A1 | 0.065 |
| | 2 | XZCR1512040A2 | 0.095 |

(1) For XMLP●●●●D2● pressure transmitters (see pages 24 to 36).

Switches with display are also compatible with XMLK●●●●2D2● and XMLG●●●●D2● pressure transmitters (see pages 14 to 20).

(2) For connecting the pressure transmitter to the switch with display, in the case of remote mounting.

Electronic pressure sensors

OsiSense XM

XMLR pressure sensors with 4-digit display

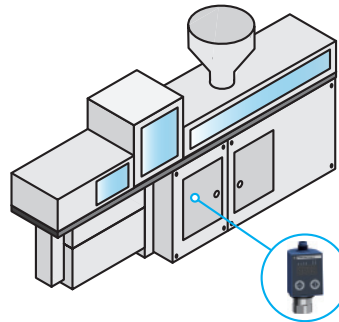
OsiSense XMLR

Electronic pressure sensors are used to control and measure pressure or vacuum levels in hydraulic or pneumatic systems. They convert the pressure into an electrical signal. They then produce an analogue output which is proportional to the measured pressure and/or one or two switching outputs on which the switching point is adjustable.

The high precision and performance of OsiSense XMLR pressure sensors makes them suitable for numerous industrial applications requiring display, control or regulation of pressure/vacuum levels.

Easy to mount

XMLR pressure sensors minimise installation time and effort. Their compact-sized, rotating body and "flip over display" function make mounting easy and flexible.



With its compact size, the OsiSense XMLR pressure sensor is easily integrated into the machine

Compact format

> With a height of just 88 to 100 mm depending on the pressure range and the fluid entry type, OsiSense XMLR is one of the most compact pressure switches on the market.



Rotating body

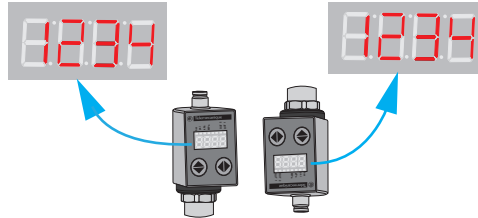
> The body of the OsiSense XMLR pressure sensor can be rotated 300°, thus enabling the user to orientate the front face of the product as required following connection to the pressure inlet pipe.



Easy to mount (continued)

Flip over display function.

> The display can be inverted vertically to adapt to the sensor's installation position.



Easy to set up

Menu naming and structure based on the VDMA* standard

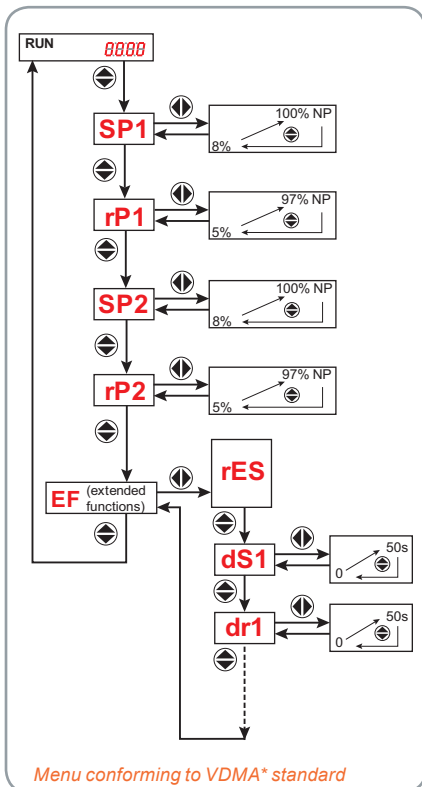
> The ergonomic design of OsiSense XMLR sets a new standard for ease of configuration.

Navigation using just two pushbuttons

> Two simple pushbuttons are all that is needed to navigate through an intuitive menu structured according to the VDMA* 24574-1 standard.



- 1 Pushbutton to display a value or parameter or to save a selected value or parameter and return to the menu.
- 2 Pushbutton to scroll from one menu to another or to increase a value or change a parameter.



Easy to maintain

At each device start up, all segments of the display light up briefly to confirm that it is operating correctly.

The device can be tested using a diagnostic function which checks the whole electronic signal processing chain. This function is accessible via the "Dia" menu and the result of the test is indicated on the display (DONE or ERR).

For transmitters, this function can also be remotely activated by connecting the Test input to an automation platform, thus enabling automatic verification without the need for intervention by an operator.

In this instance, the self-test also generates an analogue output signal which is equivalent to 50% of the sensor size (12 mA or 5 V) which, in turn, can be verified by the automation platform.

The pressure sensor can be considered as defective if the difference between the signal transmitted and the standard theoretical value is too great.

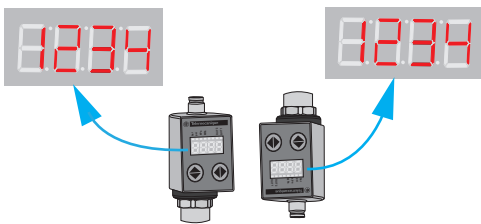
OsiSense XMLR pressure sensors also include a recording of the high and low pressure values measured since the last reset. These values can be displayed via the Hi and Lo menus.

* VDMA: Verband Deutscher Maschinen und Anlagenbau e.V.

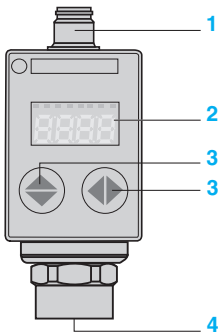
Electronic pressure sensors

OsiSense XM

XMLR pressure sensors with 4-digit display.
Compact plastic body, stainless steel 316L fluid entry.
With analogue and solid-state outputs.



"Flip over display" function.



Presentation

XMLR electronic pressure sensors are used for pressure control of hydraulic oils, fresh water, air and refrigeration fluids, between -1 and 600 bar.

Depending on the model, XMLR sensors are available with different output configurations in order to meet the highest number of requirements:

- One analogue output, 4...20 mA or 0...10 V, proportional to the measuring range
- One analogue output and one switching output, PNP or NPN type
- Two switching outputs, PNP or NPN type
- One 4...20 mA analogue output and two switching outputs, PNP or NPN type

Compact and robust:

The stainless steel 316L fluid entry and fibreglass impregnated polyacrylamide body provide the XMLR pressure sensors with excellent mechanical resistance, improved corrosion resistance and an P65/IP67 degree of protection. Compact in size (88 mm to 100 mm overall, depending on model), these products are for a nominal supply voltage of 24 V $\overline{\text{DC}}$ and have a 17 to 33 V $\overline{\text{DC}}$ operating range.

They are particularly suitable for:

- Moulding and thermoforming presses
- Injection machines
- Pneumatic systems and assembly machinery
- Hydraulic systems of lifting and handling equipment
- Pumping and fresh water treatment

Simplicity of setting-up

The body of the OsiSense XMLR pressure sensor can be turned through 300°, thus enabling the front face of the product to be orientated as required following connection to the pressure inlet pipe.

In addition, the "flip over display" function simplifies reading in the event of upside down mounting (fluid entry from above).

Description

- 1 M12 male connector, 4 or 5-pin depending on model.
- 2 4-digit, 7-segment display and LED indicator for pressure and output state (LED lit when the output has been activated).
- 3 Navigation keys for setting and configuring the menus (conforming to VDMA 24574).
- 4 Fluid entry: G 1/4 female, 1/4"-18 NPT female or SAE 7/16-20UNF female, depending on model.

Functions

Configurable functions

For the display:

- Pressure unit of measurement (bar, psi, kPa or MPa)
- Display refresh time: fast (50 ms), normal (200 ms), slow (600 ms)
- 180° flip over display
- Display off, power saving mode

For the analogue output (4...20 mA or 0...10 V):

- Compensation offset in the range of $\pm 5\%$ of the units size
- Adjustment of pressure between 75 and 125% of the nominal pressure

For each solid-state output:

- NO or NC contact
- Switching mode of outputs: Hysteresis (pumping) or Window (control)
- Time delay both on trip and on reset (adjustable from 0 to 50 s, in steps of 1 s)

Locking/unlocking:

- In order to avoid losing the product settings accidentally, the product can be locked. The settings cannot then be changed

Fast diagnostic functions

- Illumination of all the display segments on each power-up, enabling checking of their operation
- Diagnostic function for checking correct operation of the sensor
- Saving of min. and max. pressures measured by the sensor, up to 125% of the nominal pressure, and their subsequent display

Electronic pressure sensors

OsiSense XM

XMLR pressure sensors with 4-digit display.
Compact plastic body, stainless steel 316L fluid entry.
With analogue and solid-state outputs.



XMLR●●●G●●●5



XMLR●●●G●●●6

-1 to 0 bar (-14.5 to 0 psi)

Maximum permissible accidental pressure: 3 bar, destruction pressure: 3 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLRM01G0T25 | 0.190 |
| 0...10 V | – | XMLRM01G0T75 | 0.190 |
| 4...20 mA | 1 x PNP | XMLRM01G1P25 | 0.190 |
| 4...20 mA | 1 x NPN | XMLRM01G1N25 | 0.190 |
| 0...10 V | 1 x PNP | XMLRM01G1P75 | 0.190 |
| 0...10 V | 1 x NPN | XMLRM01G1N75 | 0.190 |
| – | 2 x PNP | XMLRM01G2P05 | 0.190 |
| – | 2 x NPN | XMLRM01G2N05 | 0.190 |
| 4...20 mA | 2 x PNP | XMLRM01G2P25 | 0.190 |
| 4...20 mA | 2 x NPN | XMLRM01G2N25 | 0.190 |

1/4"- 18 NPT (female) fluid connection

| | | | |
|-----------|---------|--------------|-------|
| 4...20 mA | – | XMLRM01G0T26 | 0.212 |
| 4...20 mA | 1 x PNP | XMLRM01G1P26 | 0.212 |
| 4...20 mA | 1 x NPN | XMLRM01G1N26 | 0.212 |
| – | 2 x PNP | XMLRM01G2P06 | 0.212 |
| – | 2 x NPN | XMLRM01G2N06 | 0.212 |
| 4...20 mA | 2 x PNP | XMLRM01G2P26 | 0.212 |
| 4...20 mA | 2 x NPN | XMLRM01G2N26 | 0.212 |

0 to 1 bar (0 to 14.5 psi)

Maximum permissible accidental pressure: 7 bar, destruction pressure: 7 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR001G0T25 | 0.190 |
| 0...10 V | – | XMLR001G0T75 | 0.190 |
| 4...20 mA | 1 x PNP | XMLR001G1P25 | 0.190 |
| 4...20 mA | 1 x NPN | XMLR001G1N25 | 0.190 |
| 0...10 V | 1 x PNP | XMLR001G1P75 | 0.190 |
| 0...10 V | 1 x NPN | XMLR001G1N75 | 0.190 |
| – | 2 x PNP | XMLR001G2P05 | 0.190 |
| – | 2 x NPN | XMLR001G2N05 | 0.190 |
| 1/4"- 18 NPT (female) fluid connection | | | |
| 4...20 mA | – | XMLR001G0T26 | 0.212 |
| 0...10 V | – | XMLR001G0T76 | 0.212 |
| 4...20 mA | 1 x PNP | XMLR001G1P26 | 0.212 |
| 4...20 mA | 1 x NPN | XMLR001G1N26 | 0.212 |
| – | 2 x PNP | XMLR001G2P06 | 0.212 |
| – | 2 x NPN | XMLR001G2N06 | 0.212 |

0 to 2.5 bar (0 to 36.2 psi)

Maximum permissible accidental pressure: 12 bar, destruction pressure: 12 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR2D5G0T25 | 0.190 |
| 0...10 V | – | XMLR2D5G0T75 | 0.190 |
| 4...20 mA | 1 x PNP | XMLR2D5G1P25 | 0.190 |
| 4...20 mA | 1 x NPN | XMLR2D5G1N25 | 0.190 |
| 0...10 V | 1 x PNP | XMLR2D5G1P75 | 0.190 |
| 0...10 V | 1 x NPN | XMLR2D5G1N75 | 0.190 |
| – | 2 x PNP | XMLR2D5G2P05 | 0.190 |
| – | 2 x NPN | XMLR2D5G2N05 | 0.190 |
| 1/4"- 18 NPT (female) fluid connection | | | |
| 4...20 mA | 1 x PNP | XMLR2D5G1P26 | 0.212 |
| 4...20 mA | 1 x NPN | XMLR2D5G1N26 | 0.212 |
| – | 2 x PNP | XMLR2D5G2P06 | 0.212 |
| – | 2 x NPN | XMLR2D5G2N06 | 0.212 |

Electronic pressure sensors

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XMLR●●●G●●●6
XMLR●●●G●●●9

0 to 10 bar (0 to 145 psi)

Maximum permissible accidental pressure: 40 bar, destruction pressure: 40 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR010G0T25 | 0.190 |
| 0...10 V | – | XMLR010G0T75 | 0.190 |
| 4...20 mA | 1 x PNP | XMLR010G1P25 | 0.190 |
| 4...20 mA | 1 x NPN | XMLR010G1N25 | 0.190 |
| 0...10 V | 1 x PNP | XMLR010G1P75 | 0.190 |
| 0...10 V | 1 x NPN | XMLR010G1N75 | 0.190 |
| – | 2 x PNP | XMLR010G2P05 | 0.190 |
| – | 2 x NPN | XMLR010G2N05 | 0.190 |
| 4...20 mA | 2 x PNP | XMLR010G2P25 | 0.190 |
| 4...20 mA | 2 x NPN | XMLR010G2N25 | 0.190 |

1/4''- 18 NPT (female) fluid connection

| | | | |
|-----------|---------|--------------|-------|
| 4...20 mA | – | XMLR010G0T26 | 0.212 |
| 0...10 V | – | XMLR010G0T76 | 0.212 |
| 4...20 mA | 1 x PNP | XMLR010G1P26 | 0.212 |
| 4...20 mA | 1 x NPN | XMLR010G1N26 | 0.212 |
| 0...10 V | 1 x PNP | XMLR010G1P76 | 0.212 |
| 0...10 V | 1 x NPN | XMLR010G1N76 | 0.212 |
| – | 2 x PNP | XMLR010G2P06 | 0.212 |
| – | 2 x NPN | XMLR010G2N06 | 0.212 |
| 4...20 mA | 2 x PNP | XMLR010G2P26 | 0.212 |
| 4...20 mA | 2 x NPN | XMLR010G2N26 | 0.212 |

SAE 7/16-20UNF-2B (female) fluid connection

| | | | |
|---|---------|--------------|-------|
| – | 2 x PNP | XMLR010G2P09 | 0.210 |
| – | 2 x NPN | XMLR010G2N09 | 0.210 |

0 to 16 bar (0 to 232 psi)

Maximum permissible accidental pressure: 62 bar, destruction pressure: 62 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR016G0T25 | 0.190 |
| 0...10 V | – | XMLR016G0T75 | 0.190 |
| 4...20 mA | 1 x PNP | XMLR016G1P25 | 0.190 |
| 4...20 mA | 1 x NPN | XMLR016G1N25 | 0.190 |
| 0...10 V | 1 x PNP | XMLR016G1P75 | 0.190 |
| – | 2 x PNP | XMLR016G2P05 | 0.190 |
| 4...20 mA | 2 x PNP | XMLR016G2P25 | 0.190 |
| 1/4''- 18 NPT (female) fluid connection | | | |
| 4...20 mA | – | XMLR016G0T26 | 0.212 |
| 4...20 mA | 1 x PNP | XMLR016G1P26 | 0.212 |
| 4...20 mA | 1 x NPN | XMLR016G1N26 | 0.212 |
| – | 2 x PNP | XMLR016G2P06 | 0.212 |
| – | 2 x NPN | XMLR016G2N06 | 0.212 |

0 to 25 bar (0 to 362 psi)

Maximum permissible accidental pressure: 100 bar, destruction pressure: 100 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR025G0T25 | 0.190 |
| 0...10 V | – | XMLR025G0T75 | 0.190 |
| 4...20 mA | 1 x PNP | XMLR025G1P25 | 0.190 |
| 4...20 mA | 1 x NPN | XMLR025G1N25 | 0.190 |
| 0...10 V | 1 x PNP | XMLR025G1P75 | 0.190 |
| 0...10 V | 1 x NPN | XMLR025G1N75 | 0.190 |
| – | 2 x PNP | XMLR025G2P05 | 0.190 |
| – | 2 x NPN | XMLR025G2N05 | 0.190 |
| 1/4''- 18 NPT (female) fluid connection | | | |
| 4...20 mA | – | XMLR025G0T26 | 0.212 |
| 4...20 mA | 1 x PNP | XMLR025G1P26 | 0.212 |
| 4...20 mA | 1 x NPN | XMLR025G1N26 | 0.212 |
| – | 2 x PNP | XMLR025G2P06 | 0.212 |
| – | 2 x NPN | XMLR025G2N06 | 0.212 |

Electronic pressure sensors

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XMLR●●●M●●●5
XMLR●●●M●●●6

XMLR●●●M●●●9

0 to 40 bar (0 to 580 psi)

Maximum permissible accidental pressure: 150 bar, destruction pressure: 150 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR040G0T25 | 0.190 |
| 0...10 V | – | XMLR040G0T75 | 0.190 |
| 4...20 mA | 1 x PNP | XMLR040G1P25 | 0.190 |
| 4...20 mA | 1 x NPN | XMLR040G1N25 | 0.190 |
| 0...10 V | 1 x PNP | XMLR040G1P75 | 0.190 |
| 0...10 V | 1 x NPN | XMLR040G1N75 | 0.190 |
| – | 2 x PNP | XMLR040G2P05 | 0.190 |
| – | 2 x NPN | XMLR040G2N05 | 0.190 |
| 4...20 mA | 2 x PNP | XMLR040G2P25 | 0.190 |
| 4...20 mA | 2 x NPN | XMLR040G2N25 | 0.190 |

1/4"- 18 NPT (female) fluid connection

| | | | |
|-----------|---------|--------------|-------|
| 4...20 mA | – | XMLR040G0T26 | 0.212 |
| 4...20 mA | 1 x PNP | XMLR040G1P26 | 0.212 |
| 4...20 mA | 1 x NPN | XMLR040G1N26 | 0.212 |
| – | 2 x PNP | XMLR040G2P06 | 0.212 |
| – | 2 x NPN | XMLR040G2N06 | 0.212 |

0 to 100 bar (0 to 1450 psi)

Maximum permissible accidental pressure: 300 bar, destruction pressure: 600 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR100M0T25 | 0.186 |
| 0...10 V | – | XMLR100M0T75 | 0.186 |
| 4...20 mA | 1 x PNP | XMLR100M1P25 | 0.186 |
| 4...20 mA | 1 x NPN | XMLR100M1N25 | 0.186 |
| 0...10 V | 1 x PNP | XMLR100M1P75 | 0.186 |
| 0...10 V | 1 x NPN | XMLR100M1N75 | 0.186 |
| – | 2 x PNP | XMLR100M2P05 | 0.186 |
| – | 2 x NPN | XMLR100M2N05 | 0.186 |
| 1/4"- 18 NPT (female) fluid connection | | | |
| 4...20 mA | – | XMLR100M0T26 | 0.186 |
| 4...20 mA | 1 x PNP | XMLR100M1P26 | 0.186 |
| 4...20 mA | 1 x NPN | XMLR100M1N26 | 0.186 |
| – | 2 x PNP | XMLR100M2P06 | 0.186 |
| – | 2 x NPN | XMLR100M2N06 | 0.186 |

0 to 160 bar (0 to 2320 psi)

Maximum permissible accidental pressure: 480 bar, destruction pressure: 960 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|--|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR160M0T25 | 0.186 |
| 0...10 V | – | XMLR160M0T75 | 0.186 |
| 4...20 mA | 1 x PNP | XMLR160M1P25 | 0.186 |
| 4...20 mA | 1 x NPN | XMLR160M1N25 | 0.186 |
| 0...10 V | 1 x PNP | XMLR160M1P75 | 0.186 |
| 0...10 V | 1 x NPN | XMLR160M1N75 | 0.186 |
| – | 2 x PNP | XMLR160M2P05 | 0.186 |
| – | 2 x NPN | XMLR160M2N05 | 0.186 |
| SAE 7/16-20UNF-2B (female) fluid connection | | | |
| – | 2 x PNP | XMLR160M2P09 | 0.212 |
| – | 2 x NPN | XMLR160M2N09 | 0.212 |

Electronic pressure sensors

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XMLR●●●M●●●9

0 to 250 bar (0 to 3625 psi)

Maximum permissible accidental pressure: 750 bar, destruction pressure: 1500 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR250M0T25 | 0.186 |
| 0...10 V | – | XMLR250M0T75 | 0.186 |
| 4...20 mA | 1 x PNP | XMLR250M1P25 | 0.186 |
| 4...20 mA | 1 x NPN | XMLR250M1N25 | 0.186 |
| 0...10 V | 1 x PNP | XMLR250M1P75 | 0.186 |
| 0...10 V | 1 x NPN | XMLR250M1N75 | 0.186 |
| – | 2 x PNP | XMLR250M2P05 | 0.186 |
| – | 2 x NPN | XMLR250M2N05 | 0.186 |
| 4...20 mA | 2 x PNP | XMLR250M2P25 | 0.186 |
| 4...20 mA | 2 x NPN | XMLR250M2N25 | 0.186 |

1/4" - 18 NPT (female) fluid connection

| | | | |
|-----------|---------|--------------|-------|
| 4...20 mA | – | XMLR250M0T26 | 0.186 |
| 4...20 mA | 1 x PNP | XMLR250M1P26 | 0.186 |
| 4...20 mA | 1 x NPN | XMLR250M1N26 | 0.186 |
| 0...10 V | 1 x PNP | XMLR250M1P76 | 0.186 |
| – | 2 x PNP | XMLR250M2P06 | 0.186 |
| – | 2 x NPN | XMLR250M2N06 | 0.186 |

SAE 7/16-20UNF-2B (female) fluid connection

| | | | |
|---|---------|--------------|-------|
| – | 2 x PNP | XMLR250M2P09 | 0.212 |
| – | 2 x NPN | XMLR250M2N09 | 0.212 |

0 to 400 bar (0 to 5800 psi)

Maximum permissible accidental pressure: 1200 bar, destruction pressure: 2400 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|---|-------------------------|--------------|-----------|
| G 1/4 DIN 3852-Y (female) fluid connection | | | |
| 4...20 mA | – | XMLR400M0T25 | 0.186 |
| 0...10 V | – | XMLR400M0T75 | 0.186 |
| 4...20 mA | 1 x PNP | XMLR400M1P25 | 0.186 |
| 4...20 mA | 1 x NPN | XMLR400M1N25 | 0.186 |
| 0...10 V | 1 x PNP | XMLR400M1P75 | 0.186 |
| 0...10 V | 1 x NPN | XMLR400M1N75 | 0.186 |
| – | 2 x PNP | XMLR400M2P05 | 0.186 |
| – | 2 x NPN | XMLR400M2N05 | 0.186 |
| 4...20 mA | 2 x PNP | XMLR400M2P25 | 0.186 |
| 4...20 mA | 2 x NPN | XMLR400M2N25 | 0.186 |

1/4" - 18 NPT (female) fluid connection

| | | | |
|-----------|---------|--------------|-------|
| 4...20 mA | – | XMLR400M0T26 | 0.186 |
| 4...20 mA | 1 x PNP | XMLR400M1P26 | 0.186 |
| 4...20 mA | 1 x NPN | XMLR400M1N26 | 0.186 |
| – | 2 x PNP | XMLR400M2P06 | 0.186 |
| – | 2 x NPN | XMLR400M2N06 | 0.186 |

0 to 600 bar (0 to 8700 psi)

Maximum permissible accidental pressure: 1500 bar, minimum destruction pressure: 2500 bar

| Analogue output type | Solid-state output type | Reference | Weight kg |
|--|-------------------------|--------------|-----------|
| Fluid connection G 1/4 (female) | | | |
| 4...20 mA | – | XMLR600M0T25 | 0.186 |
| 0...10 V | – | XMLR600M0T75 | 0.186 |
| 4...20 mA | 1 x PNP | XMLR600M1P25 | 0.186 |
| 0...10 V | 1 x PNP | XMLR600M1P75 | 0.186 |
| – | 2 x PNP | XMLR600M2P05 | 0.186 |

Electronic pressure sensors

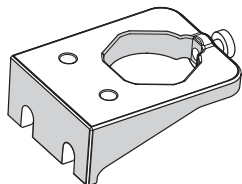
OsiSense XM

XMLR pressure sensors with 4-digit display

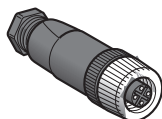
Accessories



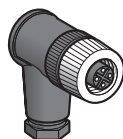
XMLZL009



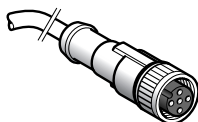
XMLZL017



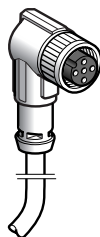
XZCC12FDM●0B



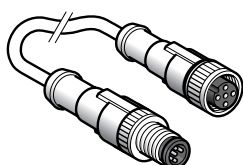
XZCC12FCM●0B



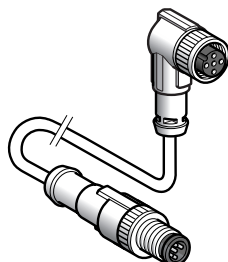
XZCP1141L●



XZCP1241L●



XZCR15110●●●●



XZCR15120●●●●

Accessories

| Description | For use with | Reference | Weight kg |
|---|---------------|-----------|-----------|
| Cooler with G 1/4 A (male) connections Usage temperature: 150°C max. for the fluid, 50°C for the ambient air | XMLR●●●●●●●●5 | XMLZL009 | 0.370 |
| Fixing bracket aluminium | XMLR●●● | XMLZL017 | 0.029 |

Connectors

| Description | For use with | Type | Reference | Weight kg |
|-----------------------------|--|----------|--------------|-----------|
| M12 female connector, 4-pin | XMLR●●●●0T●● XMLR●●●●1P●● XMLR●●●●1N●● | Straight | XZCC12FDM40B | 0.020 |
| Metal clamping ring | XMLR●●●●2P0● XMLR●●●●2N0● | Elbowed | XZCC12FCM40B | 0.020 |
| M12 female connector, 5-pin | XMLR●●●●2P2● XMLR●●●●2N2● | Straight | XZCC12FDM50B | 0.020 |
| Metal clamping ring | | Elbowed | XZCC12FCM50B | 0.020 |

Pre-wired connectors and jumper cables

| Description | For use with | Type | Length of cable | | Reference | Weight kg |
|---|---|---------------------------|-----------------|--|---------------|-----------|
| | | | m | | | |
| Pre-wired M12, 4-pin connectors Metal clamping ring PUR cable | XMLR●●●●0T●● XMLR●●●●1●●●● XMLR●●●●2P0● XMLR●●●●2N0● | Straight | 2 | | XZCP1141L2 | 0.090 |
| | | | 5 | | XZCP1141L5 | 0.190 |
| | | | 10 | | XZCP1141L10 | 0.370 |
| | | Elbowed | 2 | | XZCP1241L2 | 0.090 |
| | | | 5 | | XZCP1241L5 | 0.190 |
| | | | 10 | | XZCP1241L10 | 0.370 |
| Pre-wired M12, 5-pin connectors PVC cable | XMLR●●●●2P2● XMLR●●●●2N2● | Straight female connector | 2 | | XZCPV11V12L2 | 0.100 |
| | | | 5 | | XZCPV11V12L5 | 0.200 |
| | | | 10 | | XZCPV11V12L10 | 0.400 |
| | | Elbowed female connector | 2 | | XZCPV12V12L2 | 0.100 |
| | | | 5 | | XZCPV12V12L5 | 0.200 |
| | | | 10 | | XZCPV12V12L10 | 0.400 |
| M12-M12 4-pin jumper cables PUR cable | XMLR●●●●0T●● XMLR●●●●1●●●● XMLR●●●●2P0● XMLR●●●●2N0● | Straight female connector | 1 | | XZCR1511041C1 | 0.100 |
| | | | 2 | | XZCR1511041C2 | 0.100 |
| | | Elbowed female connector | 1 | | XZCR1512041C1 | 0.100 |
| | | | 2 | | XZCR1512041C2 | 0.100 |
| M12-M12 5-pin jumper cables PUR cable | XMLR●●●●2P2● XMLR●●●●2N2● | Straight female connector | 1 | | XZCR1511064D1 | 0.100 |
| | | | 2 | | XZCR1511064D2 | 0.100 |
| | | Elbowed female connector | 1 | | XZCR1512064D1 | 0.100 |
| | | | 2 | | XZCR1512064D2 | 0.100 |

| | | | | | | | | | |
|--------------|----|--------------|----|--------------|----|--------------|----|---------------|----|
| XMLP600BD21F | 31 | XMLR2D5G0T25 | 49 | XMLR040G1P75 | 51 | XMLR600M2P05 | 52 | XZCP1241L10 | 17 |
| XMLP600BD71F | 31 | XMLR2D5G0T75 | 49 | XMLR040G2N05 | 51 | XMLRM01G0T25 | 49 | | 21 |
| XMLP600PD130 | 35 | XMLR2D5G1N25 | 49 | XMLR040G2N06 | 51 | XMLRM01G0T26 | 49 | | 37 |
| XMLP600PD230 | 35 | XMLR2D5G1N26 | 49 | XMLR040G2N25 | 51 | XMLRM01G0T75 | 49 | | 43 |
| XMLP600PD730 | 35 | XMLR2D5G1N75 | 49 | XMLR040G2P05 | 51 | XMLRM01G1N25 | 49 | | 45 |
| XMLP600PP130 | 35 | XMLR2D5G1P25 | 49 | XMLR040G2P06 | 51 | XMLRM01G1N26 | 49 | XZCP1241L15 | 45 |
| XMLP600PP230 | 35 | XMLR2D5G1P26 | 49 | XMLR040G2P25 | 51 | XMLRM01G1N75 | 49 | XZCP1241L20 | 45 |
| XMLP600PP730 | 35 | XMLR2D5G1P75 | 49 | XMLR100M0T25 | 51 | XMLRM01G1P25 | 49 | XZCPV11V12L2 | 53 |
| XMLPM00GC2BF | 24 | XMLR2D5G2N05 | 49 | XMLR100M0T26 | 51 | XMLRM01G1P26 | 49 | XZCPV11V12L5 | 53 |
| XMLPM00GC7BF | 24 | XMLR2D5G2N06 | 49 | XMLR100M0T75 | 51 | XMLRM01G1P75 | 49 | XZCPV11V12L10 | 53 |
| XMLPM00GC11F | 24 | XMLR2D5G2P05 | 49 | XMLR100M1N25 | 51 | XMLRM01G2N05 | 49 | XZCPV12V12L2 | 53 |
| XMLPM00GC21F | 24 | XMLR2D5G2P06 | 49 | XMLR100M1N26 | 51 | XMLRM01G2N06 | 49 | XZCPV12V12L5 | 53 |
| XMLPM00GC71F | 24 | XMLR010G0T25 | 50 | XMLR100M1N75 | 51 | XMLRM01G2N25 | 49 | XZCPV12V12L10 | 53 |
| XMLPM00GD2BF | 24 | XMLR010G0T26 | 50 | XMLR100M1P25 | 51 | XMLRM01G2N26 | 49 | XZCPV1141L2 | 37 |
| XMLPM00GD7BF | 24 | XMLR010G0T75 | 50 | XMLR100M1P26 | 51 | XMLRM01G2P05 | 49 | | 43 |
| XMLPM00GD11F | 24 | XMLR010G0T76 | 50 | XMLR100M1P75 | 51 | XMLRM01G2P06 | 49 | XZCPV1141L5 | 37 |
| XMLPM00GD21F | 24 | XMLR010G1N25 | 50 | XMLR100M2N05 | 51 | XMLRM01G2P25 | 49 | | 43 |
| XMLPM00GD71F | 24 | XMLR010G1N26 | 50 | XMLR100M2N06 | 51 | XMLRM01G2P26 | 49 | XZCPV1141L10 | 37 |
| XMLPM00GL21F | 24 | XMLR010G1N75 | 50 | XMLR100M2P05 | 51 | XMLZL009 | 53 | | 43 |
| XMLPM00GL71F | 24 | XMLR010G1N76 | 50 | XMLR100M2P06 | 51 | XMLZL016 | 37 | XZCPV1241L2 | 37 |
| XMLPM00RC13F | 32 | XMLR010G1P25 | 50 | XMLR160M0T25 | 51 | XMLZL017 | 37 | | 43 |
| XMLPM00RC23F | 32 | XMLR010G1P26 | 50 | XMLR160M0T75 | 51 | | 43 | XZCPV1241L5 | 37 |
| XMLPM00RC73F | 32 | XMLR010G1P75 | 50 | XMLR160M1N25 | 51 | | 53 | | 43 |
| XMLPM00RD13F | 32 | XMLR010G1P76 | 50 | XMLR160M1N75 | 51 | XZCC12FCM40B | 17 | XZCPV1241L10 | 37 |
| XMLPM00RD23F | 32 | XMLR010G2N05 | 50 | XMLR160M1P25 | 51 | | 21 | | 43 |
| XMLPM00RD73F | 32 | XMLR010G2N06 | 50 | XMLR160M1P75 | 51 | | 37 | XZCR1511040A1 | 45 |
| XMLPM00RP13F | 32 | XMLR010G2N09 | 50 | XMLR160M2N05 | 51 | | 45 | XZCR1511040A2 | 45 |
| XMLPM00RP23F | 32 | XMLR010G2N25 | 50 | XMLR160M2N09 | 51 | | 53 | XZCR1511041C1 | 53 |
| XMLPM00RP73F | 32 | XMLR010G2N26 | 50 | XMLR160M2P05 | 51 | XZCC12FCM50B | 53 | XZCR1511041C2 | 53 |
| XMLPM01GC21F | 24 | XMLR010G2P05 | 50 | XMLR160M2P09 | 51 | XZCC12FDM40B | 17 | XZCR1511064D1 | 53 |
| XMLPM01GC71F | 24 | XMLR010G2P06 | 50 | XMLR250M0T25 | 52 | | 21 | XZCR1511064D2 | 53 |
| XMLPM01GD21F | 24 | XMLR010G2P09 | 50 | XMLR250M0T26 | 52 | | 37 | XZCR1512040A1 | 45 |
| XMLPM01GD71F | 24 | XMLR010G2P25 | 50 | XMLR250M0T75 | 52 | | 43 | XZCR1512040A2 | 45 |
| XMLPM05GC21F | 24 | XMLR010G2P26 | 50 | XMLR250M1N25 | 52 | | 45 | XZCR1512041C1 | 53 |
| XMLPM05GC71F | 24 | XMLR016G0T25 | 50 | XMLR250M1N26 | 52 | XZCC12FDM50B | 53 | XZCR1512041C2 | 53 |
| XMLPM05GD21F | 24 | XMLR016G0T26 | 50 | XMLR250M1N75 | 52 | XZCC12MCM40B | 45 | XZCR1512064D1 | 53 |
| XMLPM05GD71F | 24 | XMLR016G0T75 | 50 | XMLR250M1P25 | 52 | XZCC12MDM40B | 45 | XZCR1512064D2 | 53 |
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| XMLPM60RD23F | 32 | XMLR025G0T75 | 50 | XMLR250M2P25 | 52 | | 43 | | 43 |
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| XMLR001G1P75 | 49 | XMLR040G0T75 | 51 | XMLR400M2N26 | 52 | | 53 | | |
| XMLR001G2N05 | 49 | XMLR040G1N25 | 51 | XMLR400M2P05 | 52 | XZCP1141L5 | 17 | | |
| XMLR001G2N06 | 49 | XMLR040G1N26 | 51 | XMLR400M2P06 | 52 | | 21 | | |
| XMLR001G2P05 | 49 | XMLR040G1N75 | 51 | XMLR400M2P25 | 52 | | 37 | | |
| XMLR001G2P06 | 49 | XMLR040G1P25 | 51 | XMLR400M2P26 | 52 | | 43 | | |
| | | XMLR040G1P26 | 51 | XMLR400M2P75 | 52 | | 45 | | |
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