# Sensors for pressure control
## OsiSense XM
## Electronic pressure sensors



| | | | | | |
|---|---|---|---|---|---|
| **Applications** | Type of installation | **Control circuits** | | | |
| | Fluids controlled | **Air, water, hydraulic oils, corrosive fluids** | | | |
| | Type of sensor and features | **Units without display** | | | |
| | | **Pressure transmitters**<br>**Analogue output 4…20 mA or 0...10 V** | | **Pressure and vacuum switches**<br>**Factory set switching thresholds**<br>**Solid-state NPN or PNP output** | |
| | |  |  |  |  |
| **Fluid characteristics** | | Air, fresh water, sea water, hydraulic oils, corrosive fluids (- 15…+ 125°C) | | | |
| **Sizes** | | - 1 bar…400 bar (- 14.5 psi…5800 psi) | | | |
| **Dimensions of case (mm)** | Width x height x depth | Ø 22.8 x 70.1 | Ø 22.8 x 85 | Ø 22.8 x 70.1 | Ø 22.8 x 85 |
| **Type of output** | | Analogue, 4…20 mA or 0…10 V | | Solid-state, PNP or NPN, NC output<br>150 mA, ⎓ 12/24 V | |
| **Degree of protection** | | IP 66, IP 67 conforming to IEC/EN60529, NEMA 4 | | | |
| **Electrical connection** | | M12 connector *(1)* | Integrated quick connection *(2)* | M12 connector *(1)* | Integrated quick connection *(2)* |
| **Fluid connection** | | G 1/4 A (male) conforming to ISO7 *(3)* | | | |
| **Type reference** | | **XML G●●●D21, XML G●●●D71**<br>**XML G●●●D21TQ** *(4)*,<br>**XML G●●●D71TQ** *(4)*<br>**XML G●●●Q21TQ** *(4)*,<br>**XML G●●●Q71TQ** *(4)* | | **XML G●●●D31TQ** *(4)*<br>**XML G●●●D41TQ** *(4)*<br>**XML G●●●Q31TQ** *(4)*<br>**XML G●●●Q41TQ** *(4)* | |
| **Pages** | | 2/12 to 2/19 | | | |

**Other versions**

*(1) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(2) Phoenix Contact "Quickon" type integrated connection.*
*(3) Other fluid connections (G1/4, 1/4 NPT, etc.), please consult our Customer Care Centre.*
*(4) Sold in lots of 25.*

| Control circuits | | | |
|---|---|---|---|
| **Air, fresh water** | | **Air, water, hydraulic oils, corrosive fluids** | |
| **Units without display** | | | |
| **Pressure transmitters<br>Analogue output, 4…20 mA or 0...10 V<br>Applications: pumping** | | **Pressure transmitters<br>Analogue output, 4…20 mA** | **Pressure and vacuum switches with solid-state output<br>Regulation between 2 thresholds (adjustable differential)** |
|  |  |  |   |
| Air, fresh water (0...+ 80°C) | | Air, fresh water, sea water, hydraulic oils, corrosive fluids<br>(- 15…+ 80°C) | |
| 0…25 bar (0…362 psi) | 0... 300 psi (0... 20.7 bar) | - 1 bar…600 bar (- 14.5 psi…8700 psi) | |
| Ø 36 x 79.5 | | Ø 40 x 87 (sizes - 1…25 bar)<br>Ø 40 x 97 (sizes 60…600 bar) | |
| Analogue, 4…20 mA or 0…10 V | | Analogue, 4…20 mA | Solid-state, NPN or PNP, NC |
| IP 65 conforming to IEC/EN60529, NEMA 4 | | IP 65 | |
| M12, DIN 43650 A or Metri-Pack (Packard) connector *(1)* | | DIN 43650 A or M12 connector | |
| G 1/4 A (male) conforming to ISO7 or 1/4"-18 NPT male *(2)* | | G 1/4 A (male) | |
| **XML K●●●B2C●●, XML K●●●B2C●●TQ** *(3)*<br>**XML K●●●B2D●●, XML K●●●B2D●●TQ** *(3)*<br>**XML K●●●P2C●●, XML K●●●P2C●●TQ** *(3)*<br>**XML K●●●P2D●●, XML K●●●P2D●●TQ** *(3)*<br>**XML K●●●P2P●●, XML K●●●P2P●●TQ** *(3)* | | **XML E●●●●●●21** | **XML E●●●●●●31<br>XML E●●●●●●41** |
| 2/24 to 2/27 | | 2/32 to 2/39 | |

*(1) Other electrical connections, please consult our Customer Care Centre.*
*(2) Other fluid connections (G1/4, 1/4 NPT, etc.), please consult our Customer Care Centre.*
*(3) Sold in lots of 25.*

# Sensors for pressure control
## OsiSense XM
## Electronic pressure sensors



| | | | |
|---|---|---|---|
| **Applications** | Type of installation | **Control circuits** | |
| | Fluids controlled | **Air, water, hydraulic oils, corrosive fluids** | |
| | Type of sensor and features | **Configurable units with digital display<br>Pressure transmitters<br>Output current 4…20 mA** | **Configurable units with digital display<br>Pressure transmitters<br>Output voltage 0…10 V** |
| | |  |  |
| **Fluid characteristics** | | Air, fresh water, sea water, hydraulic oils, corrosive fluids (- 15…+ 80°C) | |
| **Sizes** | | - 1 bar…600 bar (- 14.5 psi…8700 psi) | |
| **Dimensions of case (mm)** | Width x height x depth | 46 x 113 x 58 | |
| **Type of output** | | Analogue, 4…20 mA | Analogue, 0…10 V |
| **Degree of protection** | | IP 67 | |
| **Electrical connection** | | M12 connector | |
| **Fluid connection** | | G 1/4 (female) or 1/4 NPT | |
| **Type reference** | | **XML F●●●D201●** | **XML F●●●D211●** |
| **Pages** | | 2/44 to 2/69 | |

**Other versions**

Pressure transmitters and electronic pressure and vacuum switches with alternative tapped fluid entries: ISO, NPT, etc. Please consult our Customer Care Centre.

| Control circuits<br><br>Air, water, hydraulic oils, corrosive fluids | | | |
|---|---|---|---|
| **Configurable units with digital display<br>Universal sensors<br>Regulation between 2 thresholds (adjustable differential)** | **Configurable units with digital display<br>Universal sensors<br>Regulation between 2 thresholds (adjustable differential)** | **Configurable units with digital display<br>Pressure and vacuum switches with 2.5 A relay outputs<br>Regulation between 2 thresholds (adjustable differential)** | **Configurable units with digital display<br>Dual stage pressure and vacuum switches (solid-state outputs)<br>Detection of 2 thresholds and adjustable differential for each threshold** |
| **Solid-state and analogue output current 4…20 mA** | **Solid-state and analogue output voltage 0…10 V** | | |
|  |  |  |  |
| Air, fresh water, sea water, hydraulic oils, corrosive fluids (- 15…+ 80°C) | | | |
| - 1 bar…600 bar (- 14.5 psi…8700 psi) | | | |
| 46 x 113 x 58 | | 46 x 119 x 58 | 46 x 113 x 58 |
| Solid-state, PNP or NPN, 200 mA, ⎓ 24 V output<br>Analogue output, 4…20 mA | Solid-state, PNP or NPN, 200 mA, ⎓ 24 V output<br>Analogue output, 0…10 V | Relay output<br>2.5 A, ∿ 120 V | 2 solid-state outputs, PNP or NPN, 200 mA, ⎓ 24 V |
| IP 67 | | | |
| M12 connector | | SAE 7/8"-16UN connector | M12 connector |
| G 1/4 (female) or 1/4 NPT | | | |
| **XML F●●●D202●** | **XML F●●●D212●** | **XML F●●●E204●** | **XML F●●●D203●** |
| 2/44 to 2/69 | | | |

# Sensors for pressure control
## OsiSense XM
## Electromechanical pressure and vacuum switches



| | | | |
|---|---|---|---|
| **Applications** | Type of installation | **Control circuits** | |
| | Fluids controlled | **Air, water, hydraulic oils, corrosive fluids, viscous products** | |
| | Type of operation | **Detection of a single threshold (fixed differential)** | **Regulation between 2 thresholds (adjustable differential)** |


| | | | |
|---|---|---|---|
| **Fluid characteristics** | | Air, fresh water, sea water, corrosive fluids, viscous products, up to 160°C depending on model | |
| **Sizes** | | - 1 bar…500 bar (- 14.5 psi…7250 psi) | |
| **Dimensions of case (mm)** | Width x height x depth | 35 x 68 x 75 | 46 x 68 x 85 |
| **Type of contacts** | | 1 CO single-pole, snap action | 2 CO single-pole, simultaneous, snap action |
| **Degree of protection** | | IP 66: switches with terminal connections<br>IP 65: switches with connector | IP 66: switches with terminal connections |
| **Electrical connection** | | Screw terminals: 1 entry tapped M20 x 1.5 mm for ISO cable gland or tapped for n° 13 cable gland | |
| **Fluid connection** | | G 1/4 (female)<br>G 1¼" (female) for viscous products | |
| **Type reference** | | **XML A** | **XML B** / **XML C** |
| **Pages** | | 2/78 to 2/129 | |
| **Other versions** | | Electromechanical pressure and vacuum switches with alternative tapped cable entries and/or fluid entries: NPT etc. Please consult our Customer Care Centre. | |

| Control circuits | | |
|---|---|---|
| **Air, water, hydraulic oils, corrosive fluids, viscous products** | **Air, hydraulic oils, corrosive fluids** | |
| **Dual stage switches<br>Detection at each threshold (fixed differential)** | **Regulation between 2 thresholds (adjustable differential)** | |
|  |  |  |
| Air, fresh water, sea water, corrosive fluids, viscous products, up to 160°C depending on model | Air, oils and other non corrosive fluids<br>(- 73…+ 125°C) | Oils and other fluids (- 30…+ 125°C)<br>Only oils, including synthetic oils, for certain models |
| - 1 bar…500 bar (- 14.5 psi…7250 psi) | 0.7 bar…131 bar (10.15 psi…1900 psi) | 69 bar…340 bar (1000 psi…4930 psi) |
| 45 x 68 x 85 | 88 x 88 x 68 | |
| 2 CO single-pole, staggered, snap action | 1 CO or 2 CO single-pole, snap action | |
| IP 66: switches with terminal connections | IP 65 | |
| Screw terminals: 1 entry tapped M20 x 1.5 mm for ISO cable gland or tapped for n° 13 cable gland | Screw terminals: 1 entry tapped for n° 13 cable gland | |
| G 1/4 (female)<br>G 1¼" (female) for viscous products | | G 3/8 (female) |
| **XML D** | **ACW** | **ADW** |
| 2/81 to 2/129 | 2/140 | 2/142 |

# Sensors for pressure control
## OsiSense XM
## Electromechanical pressure switches



| | | | |
|---|---|---|---|
| **Applications** | Type of installation | **Control circuits** | |
| | Fluids controlled | **Air, water** | |
| | Type of operation | **Regulation between 2 thresholds (adjustable differential)** | |

| | | |
|---|---|---|
| **Fluid characteristics** | Air, fresh water, sea water (0…+ 70°C) | |
| **Sizes** | 6 bar, 12 bar and 25 bar (87 psi, 174 psi and 362.5 psi) | |
| **Dimensions of case (mm)** Width x height x depth | 57 x 78 x 97.5 | |
| **Setting of switching points** | Internal screws | External screws |
| **Type of contacts** | 1 CO single-pole, snap action | |
| **Degree of protection** | IP 54 | |
| **Electrical connection** | Screw terminals: 2 entries tapped for n° 13 cable gland,<br>one fitted with n° 13 cable gland,<br>one fitted with blanking plug | |
| **Fluid connection** | G 1/4 or 4 x G 1/4 (female) depending on model | |
| **Type reference** | **XMX** | **XMA** |
| **Pages** | 2/148 | 2/149 |

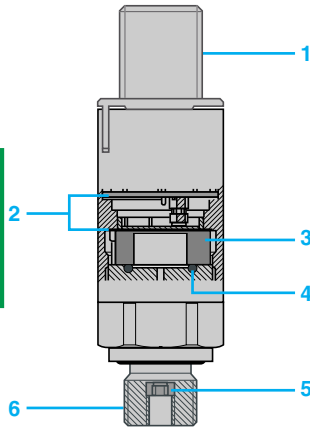
**Other versions**

Electromechanical pressure switches with alternative tapped cable entries and/or fluid entries: ISO, NPT, etc. Please consult our Customer Care Centre.

| Power circuits | | | | |
|---|---|---|---|---|
| Water | | | | Air, water |
| Detection of a single threshold (fixed differential) | Regulation between 2 thresholds (adjustable differential) | | | |
|  |  | |  |  |
| Fresh water, sea water (0…+ 70°C) | | | | Air, fresh water, sea water (0…+ 70°C) |
| 4.6 bar (66.7 psi) | | 7 bar (101.5 psi) | 10.5 bar (152.3 psi) | 6 bar, 12 bar and 25 bar (87 psi, 174 psi and 362.5 psi) |
| 73 x 73 x 102 | 72 x 77 x 106 | 72 x 73 x 102 | | 57 x 78 x 97.5 |
| Internal screws | | | | |
| 2 NC snap action | | | | 2 NC or 3 NC snap action |
| IP 20/IP 65 | | | | IP 54 or IP 65 depending on model |
| Screw terminals: 2 cable entries with grommet or 2 cable entries with n° 13 cable gland | | | | Screw terminals: 2 entries incorporating n° 13 cable gland or without cable gland, depending on model |
| G 1/4 or R 1/4 (female or male) | | | | G 1/4, G 3/8 or 4 x G 1/4 (female) depending on model |
| **FTG ●, FTG ●NE** | **FSG ●, FSG ●NE** | **FYG 22, FYG 22NE** | **FYG 32, FYG 32NE** | **XMP** |
| 2/154 to 2/156 | | | | 2/160 to 2/167 |

# Electronic pressure sensors
## OsiSense XM, type XML G
## For control circuits






## Presentation

Pressure transmitters and pressure switches type XMLG are characterised by their ceramic pressure measuring cell. The deformation caused by the pressure is transmitted to the resistors of a Wheatstone bridge silk-screened on the ceramic. The change in resistance is then processed by the integrated electronics for providing either a digital or analogue output signal.

1 Electrical connection, for example: M12
2 Electronics with EMC protection
3 Ceramic measuring cell
4 Seals
5 Leakage protection
6 Threaded connection

## Functions

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

Pressure and vacuum switches have a solid-state NPN or PNP normally closed (NC) output.

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.

These compact products that offer excellent EMC characteristics are particularly suited to difficult industrial environments.

The selling in lots is mainly intended for machine manufacturers.

## Important ordering requirement

Pressure and vacuum switches XML G are factory set, the upper and lower switching thresholds must be stated when ordering.

# Electronic pressure sensors
## OsiSense XM, type XML G
## For control circuits



### Environment characteristics

| | | | |
|---|---|---|---|
| **Conformity to standards** | | | CE<br>IEC/EN 60947-1, IEC/EN 60947-5-1<br>EN 50081-1, EN 50082-2, EN 61000-6-2 |
| **Product certifications** | | | UL, CSA |
| **Rated supply voltage** | Transmitters 4-20 mA | **V** | ⎓ 12/24 |
| | Pressure/vacuum switches | | |
| | Transmitters 0-10 V | **V** | ⎓ 24 |
| **Voltage limits** | Transmitters 4-20 mA | **V** | ⎓ 8…33 |
| | Pressure/vacuum switches | | |
| | Transmitters 0-10 V | **V** | ⎓ 11.4…33 |
| **Current consumption** | Pressure/vacuum switches | **mA** | < 4 |
| | Transmitters | **mA** | < 20 |
| **Protective treatment** | | | Standard version "TC" |
| **Ambient air temperature** | For operation | **°C** | - 15…+ 85 |
| | For storage | **°C** | - 40…+ 85 |
| **Fluids or products controlled** | | | Hydraulic oils, air, fresh water, sea water, corrosive fluids from - 15…+ 125°C |
| **Component materials in contact with fluid** | | | Ceramic $Al_2O_3$, stainless steel type AISI 303, FPM (Viton),<br>PPS (Leakage protection for P > 40 bar) |
| **Operating position** | | | All positions |
| **Vibration resistance** | | | 20 gn (9…2000 Hz) conforming to IEC 60068-2-6 |
| **Shock resistance** | | | 25 gn (half sine wave 11 ms) conforming to IEC 60068-2-27 |
| **Resistance to electromagnetic interference** | Electrostatic discharges | | Standard EN 61000-4-2, 15 kV in air, 8 kV on contact |
| | Radiated electromagnetic fields | | Standard EN 61000-4-3, 200 V/m, 80…1000 MHz |
| | Fast transients | | Standard EN 61000-4-4, 4 kV |
| | Surges | | Standard EN 61000-4-5, 500 V 12 Ω, 1 kV 42 Ω |
| | Conducted disturbances, induced by radio frequency fields | | Standard EN 61000-4-6, 30 V 0.15…80 MHz |
| | Magnetic fields | | Standard EN 61000-4-8, 30 A/m, 50 Hz |
| **Electrical protection** | | | Protected against reverse polarity and load short-circuit |
| **Rated impulse withstand voltage** | | **kV** | 0.5 |
| **Degree of protection** | | | IP 66, IP 67 conforming to IEC/EN 60529, NEMA 4 |
| **Output response time** | | **ms** | < 2 |
| **Repeat accuracy** | | | ± 0.1% of the measuring range |
| **Precision** | Transmitters | | Combined sum of linearity, hysteresis and repeat accuracy < ± 0.3% of the measuring range |
| | | | Setting tolerance of zero point and measuring range limit < ± 0.3% of the measuring range |
| | Pressure/vacuum switches | | Setting accuracy < ±1% of the measuring range |
| **Drift** | Of the zero point | | < ± 0.015% of the measuring range/°C |
| | Of the sensitivity | | < ± 0.015% of the measuring range/°C |
| **Service life** | In millions of operating cycles | | > 10 |
| **Fluid connection** | | | G 1/4 A (BSP male) conforming to ISO 7 |
| **Electrical connection** | | | M12 connector or integrated connection *(1)* |

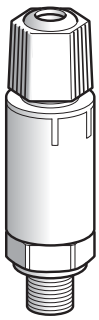
*(1) Phoenix Contact "Quickon" type integrated connection.*

# Electronic pressure sensors

OsiSense XM, Pressure transmitters, type XML G
With analogue output 4-20 mA and 0-10 V
Sizes - 1 to 6 bar (-14.5 to 87 psi)



## Units with analogue output



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Pressure range** *(1)* | | **- 1… 0 bar (-14.5… 0 psi)** | | **0…1 bar (0…14.5 psi)** | | **0…6 bar (0…87 psi)** | |
| **Type of electrical connection** *(2)* | | M12 | Integrated quick connection *(3)* | M12 | Integrated quick connection *(3)* | M12 | Integrated quick connection *(3)* |
| **References** | | | | | | | |
| **Pressure transmitters, 4-20 mA** | | | | | | | |
| **Sold in packs of:** | 1 | **XML GM01D21** | – | **XML G001D21** | – | **XML G006D21** | – |
| | bulk *(4)* | **XML GM01D21TQ** *(4)* | **XML GM01Q21TQ** *(4)* | **XML G001D21TQ** *(4)* | **XML G001Q21TQ** *(4)* | **XML G006D21TQ** *(4)* | **XML G006Q21TQ** *(4)* |
| **Pressure transmitters, 0-10 V** | | | | | | | |
| **Sold in packs of:** | 1 | **XML GM01D71** | – | **XML G001D71** | – | **XML G006D71** | – |
| | bulk *(4)* | **XML GM01D71TQ** *(4)* | **XML GM01Q71TQ** *(4)* | **XML G001D71TQ** *(4)* | **XML G001Q71TQ** *(4)* | **XML G006D71TQ** *(4)* | **XML G006Q71TQ** *(4)* |
| **Fluid connection** *(5)* | | G 1/4 A (male) | | | | | |
| **Weight (kg)** | | 0.095 | 0.095 | 0.095 | 0.095 | | |

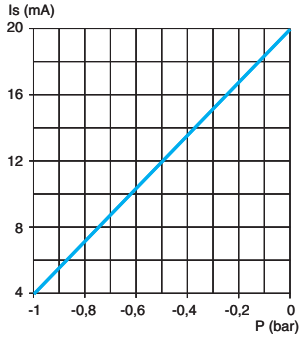
## Complementary characteristics not shown under general characteristics

| | | | | |
|---|---|---|---|---|
| **Rated supply voltage** | | ⎓ 12/24 V | | |
| **Voltage limits** | | ⎓ 8…33 V | | |
| **Analogue output** | | 4…20 mA, 2-wire technique, or 0-10 V, 3-wire technique | | |
| **Current consumption** | | < 20 mA | | |
| **Maximum permissible accidental pressure** | | 2.7 bar (39.1 psi) | 2.7 bar (39.1 psi) | 17.6 (255.20 psi) |
| **Destruction pressure** | | 3 bar (43.5 psi) | 3 bar (43.5 psi) | 20 (290 psi) |
| **Electrical connection** | By connector | **XML G●●●D21**: M12, 3-pin male. For suitable female connectors, including pre-wired versions, see pages 2/20 and 2/21 | | |
| | Integrated | **XML G●●●Q21**: integrated quick connection *(3)* | | |

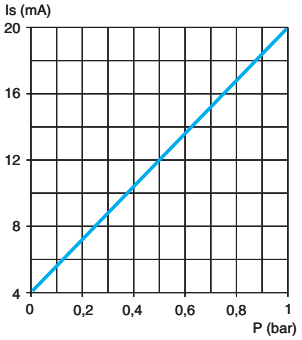
*(1) Other pressure ranges, please consult our Customer Care Centre.*
*(2) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(3) Phoenix Contact "Quickon" type integrated connection.*
*(4) Sold in lots of 25, minimum quantity 50.*
*(5) Other fluid connections (G 1/4, 1/4 NPT, etc.), please consult our Customer Care Centre.*
*Component materials of units in contact with the fluid, see page 2/11.*

## Output curves

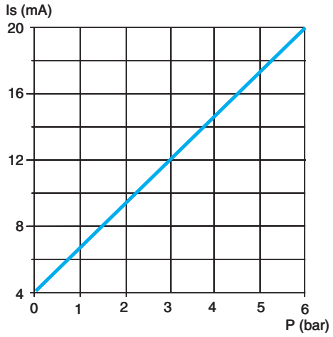
**XML GM01●21**



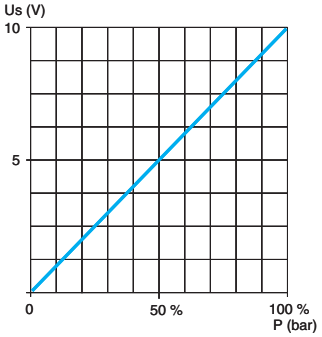

**XML G001●21**




**XML G006●21**




**XML G●●●●71**



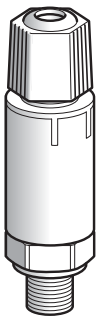

Accessories: page 2/20
Dimensions: page 2/21
Schemes: page 2/21

# Electronic pressure sensors

OsiSense XM, Pressure transmitters, type XML G
With analogue output 4-20 mA and 0-10 V
Sizes 10 to 25 bar (145 to 362.5 psi)



## Units with analogue output



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Pressure range** *(1)* | | **0…10 bar (0…145 psi)** | | **0…16 bar (0…362.5 psi)** | | **0…25 bar (0…362.5 psi)** | |
| **Type of electrical connection** *(2)* | | M12 | Integrated quick connection *(3)* | M12 | Integrated quick connection *(3)* | M12 | Integrated quick connection *(3)* |
| **References** | | | | | | | |
| **Pressure transmitters, 4-20 mA** | | | | | | | |
| **Sold in packs of:** | 1 | **XML G010D21** | – | **XML G016D21** | – | **XML G025D21** | – |
| | bulk *(4)* | **XML G010D21TQ** *(4)* | **XML G010Q21TQ** *(4)* | **XML G016D21TQ** *(4)* | **XML G016Q21TQ** *(4)* | **XML G025D21TQ** *(4)* | **XML G025Q21TQ** *(4)* |
| **Pressure transmitters, 0-10 V** | | | | | | | |
| **Sold in packs of:** | 1 | **XML G010D71** | – | **XML G016D71** | – | **XML G025D71** | – |
| | bulk *(4)* | **XML G010D71TQ** *(4)* | **XML G010Q21TQ** *(4)* | **XML G016D71TQ** *(4)* | **XML G016Q71TQ** *(4)* | **XML G025D71TQ** *(4)* | **XML G025Q71TQ** *(4)* |
| **Fluid connection** *(5)* | | G 1/4 A (male) | | | | | |
| **Weight (kg)** | | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 | 0.095 |

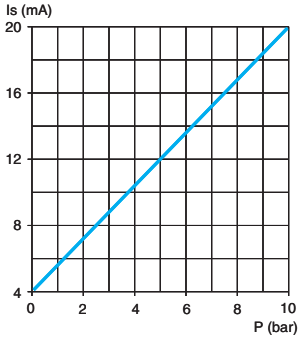
## Complementary characteristics not shown under general characteristics

| | | | | |
|---|---|---|---|---|
| **Rated supply voltage** | | ⎓ 12/24 V | | |
| **Voltage limits** | | ⎓ 8…33 V | | |
| **Analogue output** | | 4…20 mA, 2-wire technique, or 0-10 V, 3-wire technique | | |
| **Current consumption** | | < 20 mA | | |
| **Maximum permissible accidental pressure** | | 22 bar (319 psi) | 35.20 (510.4 psi) | 56 bar (812 psi) |
| **Destruction pressure** | | 25 bar (362.5 psi) | 40 (580 psi) | 62.5 bar (906.2 psi) |
| **Electrical connection** | By connector | **XML G●●●D21**: M12, 3-pin male. For suitable female connectors, including pre-wired versions, see pages 2/20 and 2/21 | | |
| | Integrated | **XML G●●●Q21**: integrated quick connection *(3)* | | |

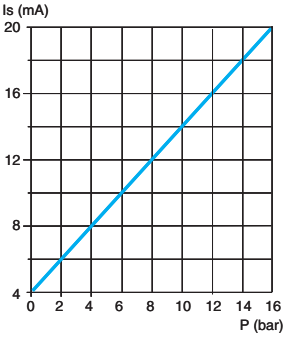
*(1) Other pressure ranges, please consult our Customer Care Centre.*
*(2) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(3) Phoenix Contact "Quickon" type integrated connection.*
*(4) Sold in lots of 25, minimum quantity 50.*
*(5) Other fluid connections (G 1/4, 1/4 NPT, etc.), please consult our Customer Care Centre.*
*Component materials of units in contact with the fluid, see page 2/11.*

## Output curves

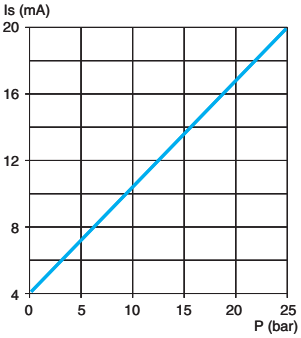
**XML G010●21**



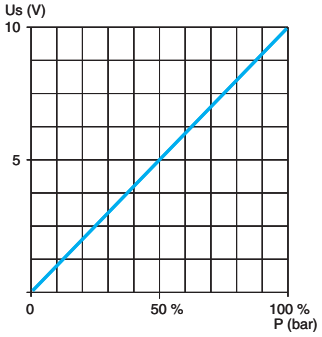

**XML G016●21**




**XML G025●21**




**XML G●●●●71**



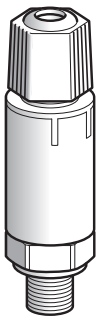

Accessories: page 2/20
Dimensions: page 2/21
Schemes: page 2/21

# Electronic pressure sensors

OsiSense XM, Pressure transmitters, type XML G
With analogue output 4-20 mA and 0-10 V
Sizes 100 to 250 bar (1450 to 3625 psi)



## Units with analogue output



| | | | | | |
|---|---|---|---|---|---|
| **Pressure range** *(1)* | | **0…100 bar (0...1450 psi)** | | **0…250 bar (0...3625 psi)** | |
| **Type of electrical connection** *(2)* | | M12 | Integrated quick connection *(3)* | M12 | Integrated quick connection *(3)* |
| **References** | | | | | |
| **Pressure transmitters, 4-20 mA** | | | | | |
| **Sold in packs of:** | 1 | **XML G100D21** | – | **XML G250D21** | – |
| | bulk *(4)* | **XML G100D21TQ** *(4)* | **XML G100Q21TQ** *(4)* | **XML G250D21TQ** *(4)* | **XML G250Q21TQ** *(4)* |
| **Pressure transmitters, 0-10 V** | | | | | |
| **Sold in packs of:** | 1 | **XML G100D71** | – | **XML G250D21** | – |
| | bulk *(4)* | **XML G100D71TQ** *(4)* | **XML G100Q71TQ** *(4)* | **XML G250D71TQ** *(4)* | **XML G250Q71TQ** *(4)* |
| **Fluid connection** *(5)* | | G 1/4 A (male) | | | |
| **Weight (kg)** | | 0.095 | 0.095 | 0.095 | 0.095 |

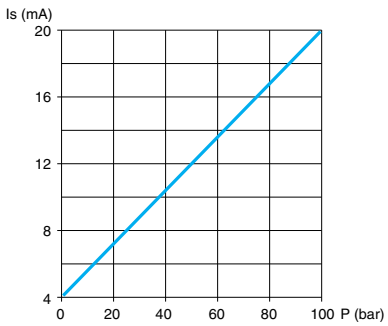
## Complementary characteristics not shown under general characteristics

| | | | |
|---|---|---|---|
| **Rated supply voltage** | | ⎓ 12/24 V | |
| **Voltage limits** | | ⎓ 8…33 V | |
| **Analogue output** | | 4…20 mA, 2-wire technique, or 0-10 V, 3-wire technique | |
| **Current consumption** | | < 20 mA | |
| **Maximum permissible accidental pressure** | | 225 bar (3262.5 psi) | 560 bar (8120 psi) |
| **Destruction pressure** | | 250 bar (3625 psi) | 625 bar (9062.5 psi) |
| **Electrical connection** | By connector | **XML G●●●D21**: M12, 3-pin male. For suitable female connectors, including pre-wired versions, see pages 2/20 and 2/21 | |
| | Integrated | **XML G●●●Q21**: integrated quick connection *(3)* | |

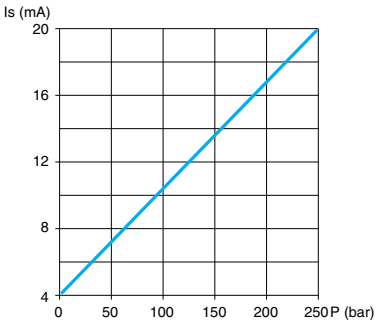
*(1) Other pressure ranges, please consult our Customer Care Centre.*
*(2) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(3) Phoenix Contact "Quickon" type integrated connection.*
*(4) Sold in lots of 25, minimum quantity 50.*
*(5) Other fluid connections (G 1/4, 1/4 NPT, etc.), please consult our Customer Care Centre. Component materials of units in contact with the fluid, see page 2/11.*

## Output curves

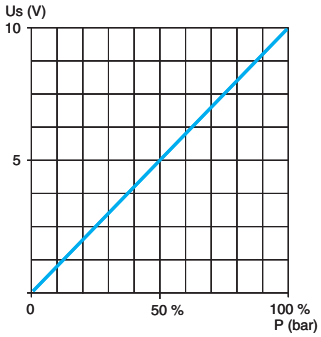
**XML G100●21**




**XML G250●21**




**XML G●●●●71**



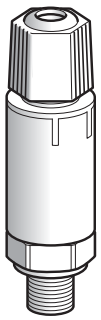

Accessories: page 2/20
Dimensions: page 2/21
Schemes: page 2/21

# Electronic pressure sensors

OsiSense XM, Pressure transmitters, type XML G
With analogue output 4-20 mA and 0-10 V
Size 400 bar (5800 psi)



**Units with analogue output**



| | | | |
|---|---|---|---|
| **Pressure range** *(1)* | | **0…400 bar (0…5800 psi)** | |
| **Type of electrical connection** *(2)* | | M12 | Integrated quick connection *(3)* |
| **References** | | | |
| **Pressure transmitters, 4-20 mA** | | | |
| **Sold in packs of:** | 1 | **XML G400D21** | – |
| | bulk *(4)* | **XML G400D21TQ** *(4)* | **XML G400Q21TQ** *(4)* |
| **Pressure transmitters, 0-10 V** | | | |
| **Sold in packs of:** | 1 | **XML G400D71** | – |
| | bulk *(4)* | **XML G400D71TQ** *(4)* | **XML G400Q71TQ** *(4)* |
| **Fluid connection** *(5)* | | G 1/4 A (male) | |
| **Weight (kg)** | | 0.095 | 0.095 |

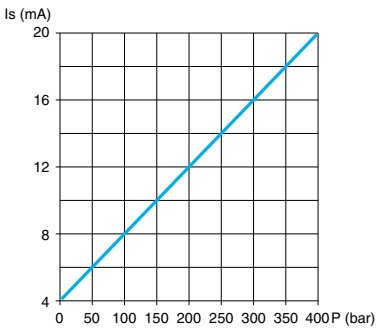
## Complementary characteristics not shown under general characteristics

| | | |
|---|---|---|
| **Rated supply voltage** | | ⎓ 12/24 V |
| **Voltage limits** | | ⎓ 8…33 V |
| **Analogue output** | | 4…20 mA, 2-wire technique, or 0-10 V, 3-wire technique |
| **Current consumption** | | < 20 mA |
| **Maximum permissible accidental pressure** | | 800 bar (11,600 psi) |
| **Destruction pressure** | | 900 bar (13,050 psi) |
| **Electrical connection** | By connector | **XML G●●●D21**: M12, 3-pin male. For suitable female connectors, including pre-wired versions, see pages 2/20 and 2/21 |
| | Integrated | **XML G●●●Q21**: integrated quick connection *(3)* |

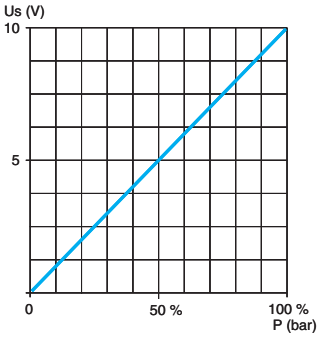
*(1) Other pressure ranges, please consult our Customer Care Centre.*
*(2) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(3) Phoenix Contact "Quickon" type integrated connection.*
*(4) Sold in lots of 25, minimum quantity 50.*
*(5) Other fluid connections (G 1/4, 1/4 NPT, etc.), please consult our Customer Care Centre. Component materials of units in contact with the fluid, see page 2/11.*

## Output curves

**XML G400●21**




**XML G●●●●71**



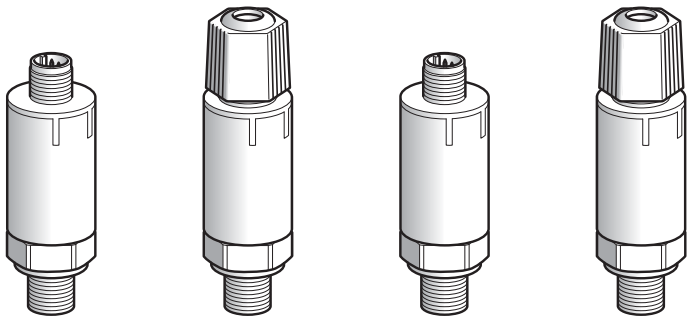

Accessories: page 2/20
Dimensions: page 2/21
Schemes: page 2/21

# Electronic pressure sensors

OsiSense XM, Pressure and vacuum switches, type XML G
Sizes - 1 to 1 bar (- 14.5 to 14.5 psi)



**Units with solid-state output** *(1)*

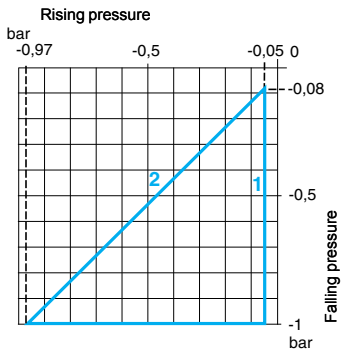


| | | | | | |
|---|---|---|---|---|---|
| **Adjustable range of switching point** (PH)<br>Rising pressure *(2) (8)* | | **- 0.08…- 1 bar (- 1.16…- 14.5 psi)** | | **0.08…1 bar (1.16…14.5 psi)** | |
| **Type of electrical connection** *(3)* | | M12 | Integrated quick connection *(4)* | M12 | Integrated quick connection *(4)* |
| **References** | | | | | |
| **Only sold in bulk packs** *(5)* | | | | | |
| | NPN output | **XML GM01D31TQ** *(5)* | **XML GM01Q31TQ** *(5)* | **XML G001D31TQ** *(5)* | **XML G001Q31TQ** *(5)* |
| | PNP output | **XML GM01D41TQ** *(5)* | **XML GM01Q41TQ** *(5)* | **XML G001D41TQ** *(5)* | **XML G001Q41TQ** *(5)* |
| **Fluid connection** *(6)* | | G 1/4 A (male) | | | |
| **Weight (kg)** | | 0.095 | 0.095 | 0.095 | 0.095 |
| **Complementary characteristics not shown under general characteristics** | | | | | |
| **Switching thresholds** *(7)* | | Factory set | | | |
| **Possible differential** | Min. at low setting | 0.03 bar (0.44 psi) | | 0.03 bar (0.44 psi) | |
| | Min. at high setting | 0.03 bar (0.44 psi) | | 0.03 bar (0.44 psi) | |
| | Max. at high setting | 0.95 bar (13.77 psi) | | 0.95 bar (13.77 psi) | |
| **Maximum permissible accidental pressure** | | 2.7 bar (39.1 psi) | | 2.7 bar (39.1 psi) | |
| **Destruction pressure** | | 3 bar (43.5 psi) | | 3 bar (43.5 psi) | |
| **Rated supply voltage** | | ⎓ 12/24 V | | | |
| **Voltage limits** | | ⎓ 8…33 V | | | |
| **Output** | | Solid-state NPN or PNP, NC | | | |
| **Switching capacity** | | 150 mA | | | |
| **Current consumption** | | < 4 mA | | | |
| **Electrical connection** | By connector | **XML G●●●D●●**: M12, 3-pin male. For suitable female connectors, including pre-wired versions, see pages 2/20 and 2/21 | | | |
| | Integrated | **XML G●●●Q●●**: integrated quick connection *(4)* | | | |

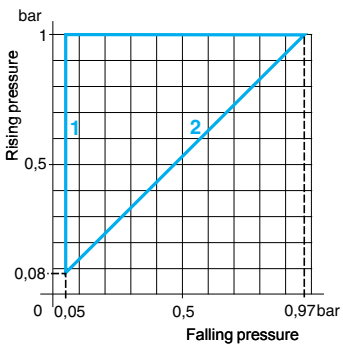
*(1) Other types of output (normally open PNP, NPN, etc.), please consult our Customer Care Centre.*
*(2) Other pressure ranges, please consult our Customer Care Centre.*
*(3) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(4) Phoenix Contact "Quickon" type integrated connection.*
*(5) Sold in lots of 25, minimum quantity 50.*
*(6) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from -15…+125°C. Component materials of units in contact with the fluid, see page 2/11. Other fluid connections (G 1/4, 1/4 NPT, etc.), please consult our Customer Care Centre.*
*(7)* ***State the switching threshold settings when ordering.***
*(8) For vacuum switches (size - 1 bar): adjustable range of switching point (PB) on falling pressure.*

## Operating curves

**XML GM01●●1**




**XML G001●●1**




1 Maximum differential
2 Minimum differential

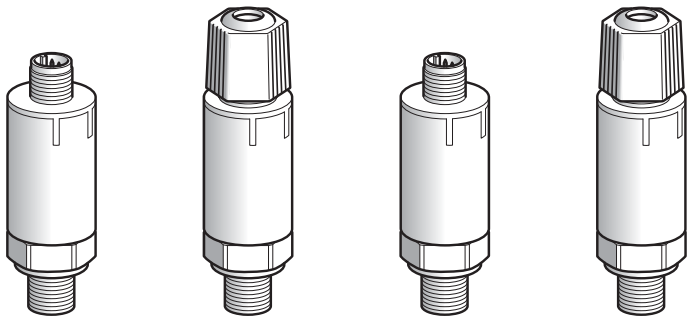
Accessories: page 2/20
Dimensions: page 2/21
Schemes: page 2/21

# Electronic pressure sensors

OsiSense XM, Pressure switches type XML G
Sizes 10 to 25 bar (145 to 362.5 psi)



**Units with solid-state output** *(1)*

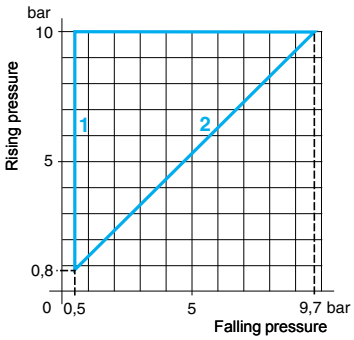


| | | | | | |
|---|---|---|---|---|---|
| **Adjustable range of switching point** (PH) Rising pressure *(2)* | | **0.8…10 bar (11.6…145 psi)** | | **2…25 bar (29…362.5 psi)** | |
| **Type of electrical connection** *(3)* | | M12 | Integrated quick connection *(4)* | M12 | Integrated quick connection *(4)* |
| **References** | | | | | |
| **Only sold in bulk packs** *(5)* | | | | | |
| | NPN output | **XML G010D31TQ** *(5)* | **XML G010Q31TQ** *(5)* | **XML G025D31TQ** *(5)* | **XML G025Q31TQ** *(5)* |
| | PNP output | **XML G010D41TQ** *(5)* | **XML G010Q41TQ** *(5)* | **XML G025D41TQ** *(5)* | **XML G025Q41TQ** *(5)* |
| **Fluid connection** *(6)* | | G 1/4 A (male) | | | |
| **Weight (kg)** | | 0.095 | 0.095 | 0.095 | 0.095 |
| **Complementary characteristics not shown under general characteristics** | | | | | |
| **Switching thresholds** *(7)* | | Factory set | | | |
| **Possible differential** | Min. at low setting | 0.3 bar (4.4 psi) | | 0.75 bar (10.9 psi) | |
| | Min. at high setting | 0.3 bar (4.4 psi) | | 0.75 bar (10.9 psi) | |
| | Max. at high setting | 9.5 bar (137.75 psi) | | 23.8 bar (345.1 psi) | |
| **Maximum permissible accidental pressure** | | 22 bar (319 psi) | | 56 bar (812 psi) | |
| **Destruction pressure** | | 25 bar (362.5 psi) | | 62.5 bar (906.2 psi) | |
| **Rated supply voltage** | | ⎓ 12/24 V | | | |
| **Voltage limits** | | ⎓ 8…33 V | | | |
| **Output** | | Solid-state, NPN or PNP, NC | | | |
| **Switching capacity** | | 150 mA | | | |
| **Current consumption** | | < 4 mA | | | |
| **Electrical connection** | By connector | **XML G●●●D●●**: M12, 3-pin male. For suitable female connectors, including pre-wired versions, see pages 2/20 and 2/21 | | | |
| | Integrated | **XML-G●●●Q●●**: integrated quick connection *(4)* | | | |

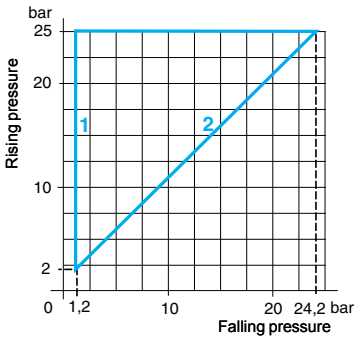
*(1) Other types of output (normally open PNP, NPN, etc.), please consult our Customer Care Centre.*
*(2) Other pressure ranges, please consult our Customer Care Centre.*
*(3) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(4) Phoenix Contact "Quickon" type integrated connection.*
*(5) Sold in lots of 25, minimum quantity 50.*
*(6) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from -15…+125°C*
*Component materials of units in contact with the fluid, see page 2/11.*
*Other fluid connections (G 1/4, 1/4 NPT, etc.), please consult our Customer Care Centre.*
*(7)* ***State the switching threshold settings when ordering.***

## Operating curves

**XML G010●●1**




**XML G025●●1**




1 Maximum differential
2 Minimum differential

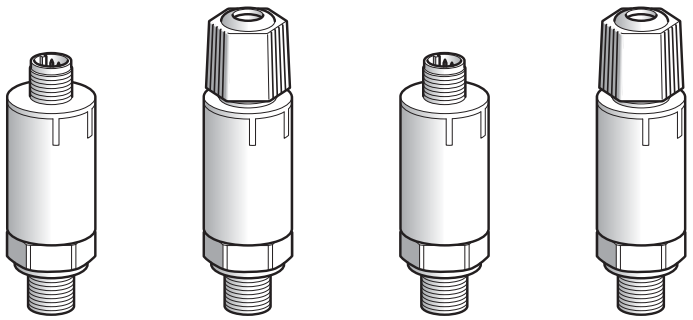
Accessories: page 2/20 Dimensions: page 2/21 Schemes: page 2/21

# Electronic pressure sensors

OsiSense XM, Pressure switches type XML G
Sizes 100 to 250 bar (1450 to 3625 psi)



**Units with solid-state output** *(1)*

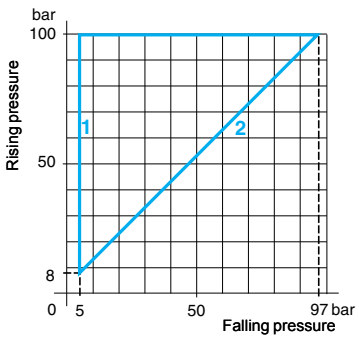


| | | | | | |
|---|---|---|---|---|---|
| **Adjustable range of switching point** (PH) Rising pressure *(2)* | | **8…100 bar (11.6…1450 psi)** | | **20…250 bar (29…3625 psi)** | |
| **Type of electrical connection** *(3)* | | M12 | Integrated quick connection *(4)* | M12 | Integrated quick connection *(4)* |
| **References** | | | | | |
| **Only sold in bulk packs** *(5)* | | | | | |
| | NPN output | **XML G100D31TQ** *(5)* | **XML G100Q31TQ** *(5)* | **XML G250D31TQ** *(5)* | **XML G250Q31TQ** *(5)* |
| | PNP output | **XML G100D41TQ** *(5)* | **XML G100Q41TQ** *(5)* | **XML G250D41TQ** *(5)* | **XML G250Q41TQ** *(5)* |
| **Fluid connection** *(6)* | | G 1/4 A (male) | | | |
| **Weight (kg)** | | 0.095 | 0.095 | 0.095 | 0.095 |
| **Complementary characteristics not shown under general characteristics** | | | | | |
| **Switching thresholds** *(7)* | | Factory set | | | |
| **Possible differential** | Min. at low setting | 3 bar (43.5 psi) | | 7.5 bar (108.8 psi) | |
| | Min. at high setting | 3 bar (43.5 psi) | | 7.5 bar (108.8 psi) | |
| | Max. at high setting | 95 bar (1377.5 psi) | | 237.5 bar (3443.7 psi) | |
| **Maximum permissible accidental pressure** | | 225 bar (3262.5 psi) | | 560 bar (8120 psi) | |
| **Destruction pressure** | | 250 bar (3625 psi) | | 625 bar (9062.5 psi) | |
| **Rated supply voltage** | | ⎓ 12/24 V | | | |
| **Voltage limits** | | ⎓ 8…33 V | | | |
| **Output** | | Solid-state, NPN or PNP, NC | | | |
| **Switching capacity** | | 150 mA | | | |
| **Current consumption** | | < 4 mA | | | |
| **Electrical connection** | By connector | **XML G●●●D●●**: M12, 3-pin male. For suitable female connectors, including pre-wired versions, see pages 2/20 and 2/21 | | | |
| | Integrated | **XML G●●●Q●●**: integrated quick connection *(4)* | | | |

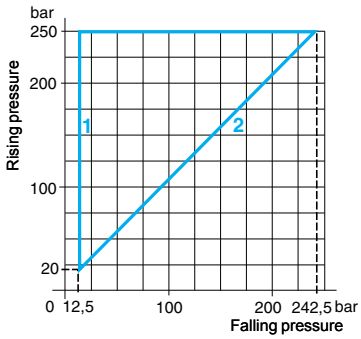
*(1) Other types of output (normally open PNP, NPN, etc.), please consult our Customer Care Centre.*
*(2) Other pressure ranges, please consult our Customer Care Centre.*
*(3) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(4) Phoenix Contact "Quickon" type integrated connection.*
*(5) Sold in lots of 25, minimum quantity 50.*
*(6) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from -15…+125°C*
*Component materials of units in contact with the fluid, see page 2/11.*
*Other fluid connections (G 1/4, 1/4 NPT, etc.), please consult our Customer Care Centre.*
***(7) State the switching threshold settings when ordering.***

## Operating curves

**XML G100●●1TQ**




**XML G250●●1TQ**




1 Maximum differential
2 Minimum differential

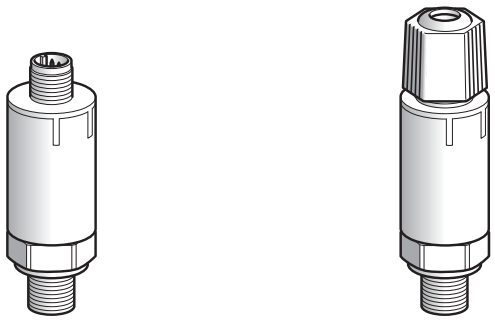
Accessories: page 2/20
Dimensions: page 2/21
Schemes: page 2/21

# Electronic pressure sensors

OsiSense XM, Pressure switches type XML G
Size 400 bar (5800 psi)



## Units with solid-state output *(1)*

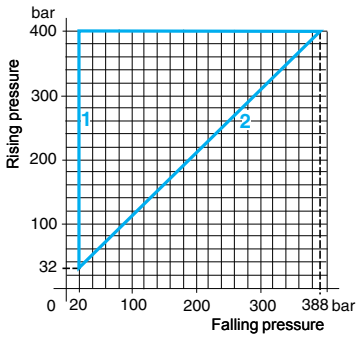


| | | | |
|---|---|---|---|
| **Adjustable range of switching point** (PH) Rising pressure *(2)* | | **32…400 bar (464…5800 psi)** | |
| **Type of electrical connection** *(3)* | | M12 | Integrated quick connection *(4)* |
| **References** | | | |
| **Only sold in bulk packs** *(5)* | | | |
| | NPN output | **XML G400D31TQ** *(5)* | **XML G400Q31TQ** *(5)* |
| | PNP output | **XML G400D41TQ** *(5)* | **XML G400Q41TQ** *(5)* |
| **Fluid connection** *(6)* | | G 1/4 A (male) | |
| **Weight (kg)** | | 0.095 | 0.095 |
| **Complementary characteristics not shown under general characteristics** | | | |
| **Switching thresholds** *(7)* | | Factory set | |
| **Possible differential** | Min. at low setting | 12 bar (174 psi) | |
| | Min. at high setting | 12 bar (174 psi) | |
| | Max. at high setting | 380 bar (5510 psi) | |
| **Maximum permissible accidental pressure** | | 800 bar (11,600 psi) | |
| **Destruction pressure** | | 900 bar (13,050 psi) | |
| **Rated supply voltage** | | ⎓ 12/24 V | |
| **Voltage limits** | | ⎓ 8…33 V | |
| **Output** | | Solid-state NPN or PNP, NC | |
| **Switching capacity** | | 150 mA | |
| **Current consumption** | | < 4 mA | |
| **Electrical connection** | By connector | **XML G●●●D●●:** M12, 3-pin male. For suitable female connectors, including pre-wired versions, see pages 2/20 and 2/21 | |
| | Integrated | **XML G●●●Q●●**: integrated quick connection *(4)* | |

*(1) Other types of output (normally open PNP, NPN, etc.), please consult our Customer Care Centre.*
*(2) Other pressure ranges, please consult our Customer Care Centre.*
*(3) Other connections (AMP connector, cable, etc.), please consult our Customer Care Centre.*
*(4) Phoenix Contact "Quickon" type integrated connection.*
*(5) Sold in lots of 25, minimum quantity 50.*
*(6) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from -15…+125°C*
*Component materials of units in contact with the fluid, see page 2/11.*
*Other fluid connections (G 1/4, 1/4 NPT, etc.), please consult our Customer Care Centre.*
***(7) State the switching threshold settings when ordering.***

## Operating curve

**XML G400●●1TQ**




1 Maximum differential
2 Minimum differential

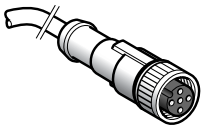
Accessories: page 2/20
Dimensions: page 2/21
Schemes: page 2/21

# Electronic pressure sensors

## OsiSense XM, Accessories and replacement parts for sensors type XML G

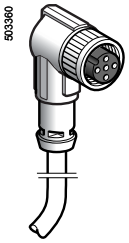


563352



*XZ CP1141L●*

503360



*XZ CP1241L●*

532711

*XZ CC12FCM40B*

532715

*XML GZ001*

### Connection accessories

| Description | | Length of cable m | Reference | Weight kg |
|---|---|---|---|---|
| **M12 female connector, metal clamping ring** *(1)* | Straight | – | **XZ CC12FDM40B** | 0.020 |
| | Elbowed | – | **XZ CC12FCM40B** | 0.020 |
| **Pre-wired M12 female connectors** | Straight | 2 | **XZ CP1141L2** | 0.090 |
| | | 5 | **XZ CP1141L5** | 0.190 |
| | | 10 | **XZ CP1141L10** | 0.370 |
| | Elbowed | 2 | **XZ CP1241L2** | 0.090 |
| | | 5 | **XZ CP1241L5** | 0.190 |
| | | 10 | **XZ CP1241L10** | 0.370 |

### Replacement part

| Description | Sold in lots of | Unit reference | Weight kg |
|---|---|---|---|
| **Quick connection** *(2)* | 10 | **XML GZ001** | 0.025 |

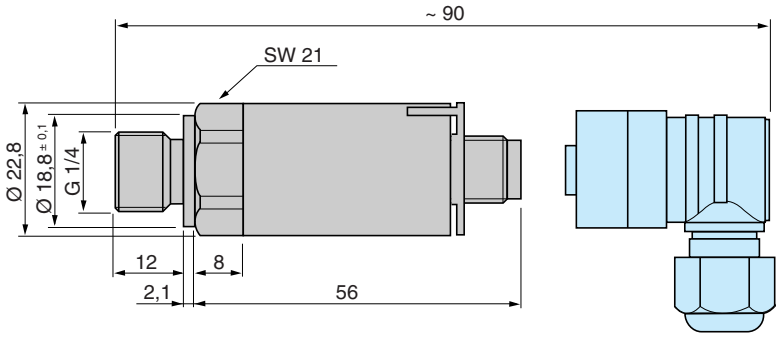
*(1) Connector with screw terminal connections.*
*(2) Phoenix Contact "Quickon" type connection.*

# Electronic pressure sensors
## OsiSense XM
Transmitters and Pressure switches type XML G
For control circuits

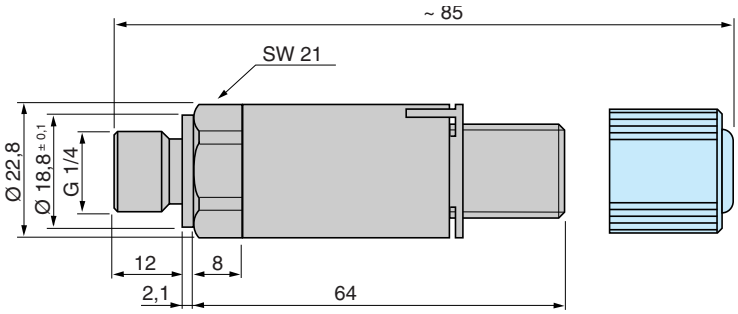


## Dimensions

**XML G●●●D●●, M12 x 1 connection**




**XML G●●●Q●●, integrated quick connection**

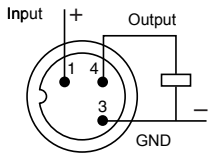



## Connector schemes (pressure sensor connector pin view)

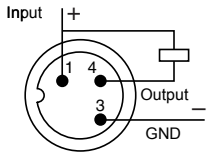
### Electronic pressure switches

**M12**

**3-wire technique (PNP)**

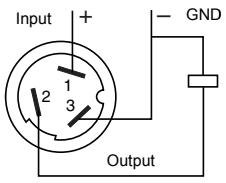



**3-wire technique (NPN)**

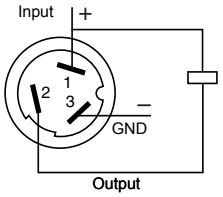



**Integrated quick connection**

**3-wire technique (PNP)**



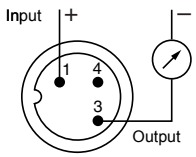

**3-wire technique (NPN)**



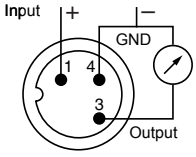

### Pressure transmitters

**M12**

**2-wire technique (4-20 mA)**

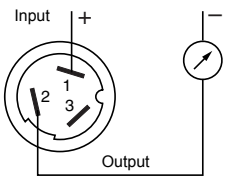



**3-wire technique (0-10 V)**

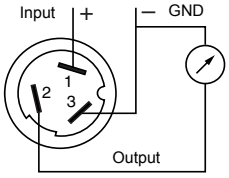



**Integrated quick connection**

**2-wire technique (4-20 mA)**

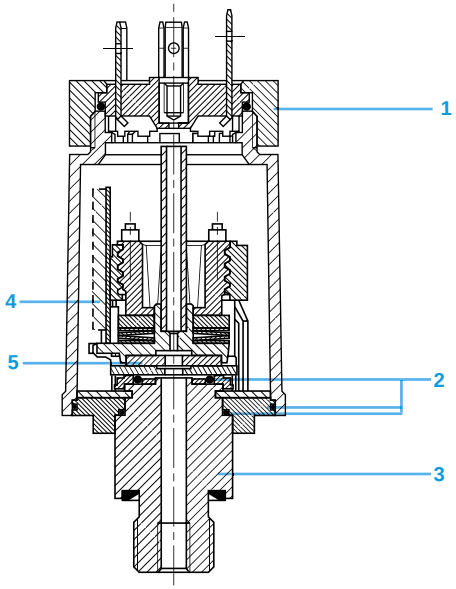



**3-wire technique (0-10 V)**



# Electronic pressure sensors
## OsiSense XM
## For control circuits, type XML K






### Presentation

Pressure transmitters type XML K are characterised by their ceramic pressure measuring cell. The deformation caused by the pressure is transmitted to the resistors of a Wheatstone bridge silk-screened on the ceramic. The change in resistance is then processed by the integrated electronics for providing an analogue output signal.

1 Electrical connection, for example: DIN 43650 A connector
2 Sealing gaskets
3 Threaded fluid connection
4 Hybrid electronics
5 Measuring load cell (ceramic technology)

### Functions

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

These compact products are available with various types of electrical connector and fluid connection.

As standard, versions are available calibrated in bar and psi.
The selling in lots option offers an excellent price/performance ratio. Electronic pressure sensors XML K are, therefore, mainly intended for pump manufacturers.

The sizes offered are suited to the pumping domain.

# Electronic pressure sensors
## OsiSense XM
## For control circuits, type XML K



### Environment characteristics

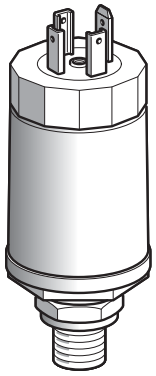
| | | | |
|---|---|---|---|
| **Conformity to standards** | | | CE<br>IEC/EN 60947-1, IEC/EN 60947-5-1<br>EN 50081-1, EN 50082-2, EN 61000-6-2 |
| **Product certifications** | | | UL, CSA |
| **Rated supply voltage** | | **V** | ⎓ 24 V |
| **Voltage limits** | | | 4…20 mA: ⎓ 8…33 V<br>0…10 V: ⎓ 16.2…33 V |
| **Current consumption** | | | 4…20 mA: < 20 mA<br>0…10 V: < 6 mA |
| **Output signal** | | | 4-20 mA, 0-10 V |
| **Protective treatment** | | | Standard version "TC" |
| **Ambient air temperature** | For operation | **°C** | 0…+ 80 |
| | For storage | **°C** | - 25…+ 80 |
| **Fluids or products controlled** | | | Air, fresh water (0…+ 80°C) |
| **Component materials in contact with fluid** | | | Stainless steel, type AISI 303<br>nitrile (NBR) |
| **Operating position** | | | All positions |
| **Vibration resistance** | | | 20 gn (9…2000 Hz) conforming to IEC 60068-2-6 |
| **Shock resistance** | | | 25 gn (half sine wave 11 ms) conforming to IEC 60068-2-27 |
| **Resistance to electromagnetic interference** | Electrostatic discharges | | Standard EN 61000-4-2, 8 kV in air, 6 kV on contact |
| | Radiated electromagnetic fields | | Standard EN 61000-4-3, >10 V/m, 80….1000 MHz |
| | Fast transients | | Standard EN 61000-4-4, 2 kV |
| | Surges | | Standard EN 61000-4-5, 500 V 12 Ω, 1 kV 42 Ω |
| | Conducted disturbances, induced by radio frequency fields | | Standard EN 61000-4-6, 10 V 0.15…80 MHz |
| | Magnetic fields | | Standard EN 61000-4-8, 30 A/m, 50 Hz |
| **Electrical protection** | | | Protected against reverse polarity and load short-circuit |
| **Rated impulse withstand voltage** | | **kV** | 0.5 |
| **Degree of protection** | | | IP 65 conforming to IEC/EN 60529, NEMA 4 |
| **Output response time** | | **ms** | < 2 |
| **Repeat accuracy** | | | ± 0.3% of the measuring range |
| **Precision (resolution)** | | | Combined sum of linearity, hysteresis and repeat accuracy < ± 0.5% of the measuring range |
| | | | Setting tolerance of zero point and measuring range limit < ± 1% of the measuring range |
| **Drift** | Of the zero point | | < ± 0.04 % of the measuring range/°K |
| | Of the sensitivity | | < ± 0.03% of the measuring range/°K |
| **Service life** | Operating cycles | | > 10 million |
| **Fluid connection** | | | G 1/4 A (BSP male) conforming to ISO 7, or 1/4"-18NPT male |
| **Electrical connection** | | | Connector, either: M12 or DIN 43650 A (DIN EN 175301-803-A) or Metri-Pack (Packard) |

# Electronic pressure sensors
## OsiSense XM
Pressure transmitters type XML K, bar version
With analogue output 4-20 mA
Sizes 0 to 25 bar (0 to 362 psi)

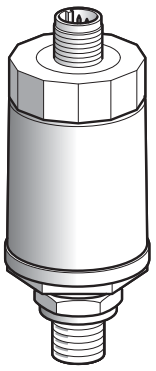


## Pressure transmitters type XML K, bar version, DIN 43650 A connector or M12 connector *(1)*

**DIN 43650 A connector**



**M12 connector**

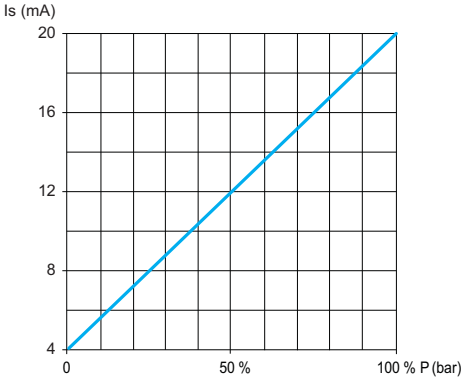


| | | | | | |
|---|---|---|---|---|---|
| **Pressure range** | | **0…6 bar (0…87 psi)** | **0…10 bar (0…145 psi)** | **0…16 bar (0…232 psi)** | **0…25 bar (0…362.5 psi)** |
| **References** | | | | | |
| **Pressure transmitters XML K, DIN 43650 A connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K006B2C21** | **XML K010B2C21** | **XML K016B2C21** | **XML K025B2C21** |
| | bulk *(2)* | **XML K006B2C21TQ** | **XML K010B2C21TQ** | **XML K016B2C21TQ** | **XML K025B2C21TQ** |
| **Pressure transmitters XML K, M12 connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K006B2D21** | **XML K010B2D21** | **XML K016B2D21** | **XML K025B2D21** |
| | bulk *(2)* | **XML K006B2D21TQ** | **XML K010B2D21TQ** | **XML K016B2D21TQ** | **XML K025B2D21TQ** |
| **Fluid connection** *(3)* | | G 1/4 A (male) | | | |
| **Weight (kg)** | | 0.110 | 0.110 | 0.110 | 0.110 |
| **Complementary characteristics not shown under general characteristics** | | | | | |
| **Rated supply voltage** | | ⎓ 24 V | | | |
| **Voltage limits** | | ⎓ 8…33 V | | | |
| **Output** *(4)* | | 4…20 mA, 2-wire technique | | | |
| **Current consumption** | | < 20 mA | | | |
| **Maximum permissible accidental pressure** | | 12 bar (174 psi) | 20 bar (290 psi) | 32 bar (464 psi) | 50 bar (725 psi) |
| **Destruction pressure** | | 18 bar (261 psi) | 30 bar (435 psi) | 48 bar (696 psi) | 75 bar (1087.5 psi) |
| **Electrical connection** | **DIN 43650 A connector** | EN 175301-803-A (male). For suitable female connector see accessories on page 2/28. | | | |
| | **M12 connector** | M12, 3-pin male. For suitable female connector, including pre-wired versions, see accessories on page 2/28. | | | |

*(1) Other types of electrical connection, please consult our Customer Care Centre.*
*(2) Sold in lots of 25, minimum quantity 50.*
*(3) Other types of fluid connection, please consult our Customer Care Centre.*
*(4) Other types of output, please consult our Customer Care Centre.*

## Output curve

**XML K0●●B2●21**

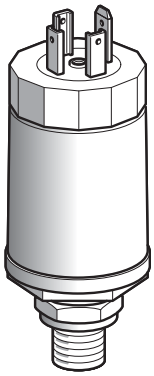


# Electronic pressure sensors
## OsiSense XM
Pressure transmitters type XML K, bar version
With analogue output 0-10 V
Sizes 0 to 25 bar (0 to 362 psi)

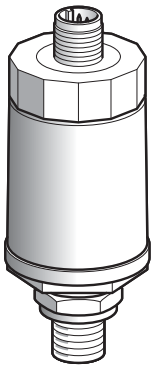


## Pressure transmitters type XML K, bar version, DIN 43650 A connector or M12 connector *(1)*

**DIN 43650 A connector**



**M12 connector**

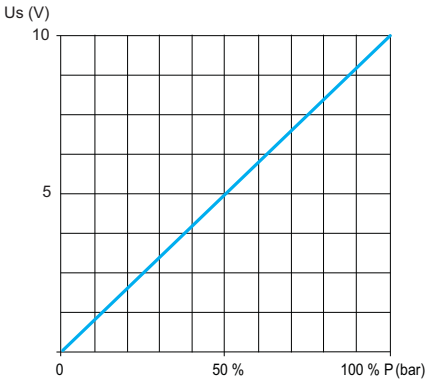


| | | | | | |
|---|---|---|---|---|---|
| **Pressure range** | | **0…6 bar (0…87 psi)** | **0…10 bar (0…145 psi)** | **0…16 bar (0…232 psi)** | **0…25 bar (0…362.5 psi)** |
| **References** | | | | | |
| **Pressure transmitters XML K, DIN 43650 A connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K006B2C71** | **XML K010B2C71** | **XML K016B2C71** | **XML K025B2C71** |
| | bulk *(2)* | **XML K006B2C71TQ** | **XML K010B2C71TQ** | **XML K016B2C71TQ** | **XML K025B2C71TQ** |
| **Pressure transmitters XML K, M12 connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K006B2D71** | **XML K010B2D71** | **XML K016B2D71** | **XML K025B2D71** |
| | bulk *(2)* | **XML K006B2D71TQ** | **XML K010B2D71TQ** | **XML K016B2D71TQ** | **XML K025B2D71TQ** |
| **Fluid connection** *(3)* | | G 1/4 A (male) | | | |
| Weight (kg) | | 0.110 | 0.110 | 0.110 | 0.110 |
| **Complementary characteristics not shown under general characteristics** | | | | | |
| **Rated supply voltage** | | ⎓ 24 V | | | |
| **Voltage limits** | | ⎓ 16.2…33 V | | | |
| **Output** *(4)* | | 0…10 V, 3-wire technique | | | |
| **Current consumption** | | < 6 mA | | | |
| **Maximum permissible accidental pressure** | | 12 bar (174 psi) | 20 bar (290 psi) | 32 bar (464 psi) | 50 bar (725 psi) |
| **Destruction pressure** | | 18 bar (261 psi) | 30 bar (435 psi) | 48 bar (696 psi) | 75 bar (1087.5 psi) |
| **Electrical connection** | **DIN 43650 A connector** | EN 175301-803-A (male). For suitable female connector see accessories on page 2/28. | | | |
| | **M12 connector** | M12, 3-pin male. For suitable female connector, including pre-wired versions, see accessories on page 2/28. | | | |

*(1) Other types of electrical connection, please consult our Customer Care Centre.*
*(2) Sold in lots of 25, minimum quantity 50.*
*(3) Other types of fluid connection, please consult our Customer Care Centre.*
*(4) Other types of output, please consult our Customer Care Centre.*

## Output curve

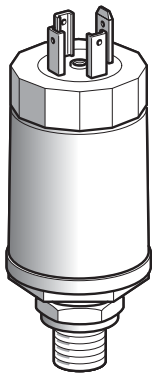
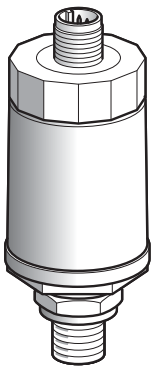
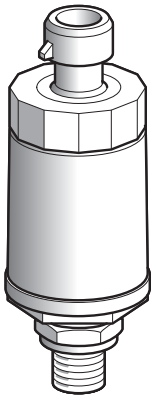
**XML K0●●B2●71**



# Electronic pressure sensors
## OsiSense XM
Pressure transmitters type XML K, PSI version
With analogue output 4-20 mA
Sizes 0 to 300 psi (0 to 20.7 bar)



## Pressure transmitters type XML K, PSI version, DIN 43650 A, M12 or Packard connector *(1)*

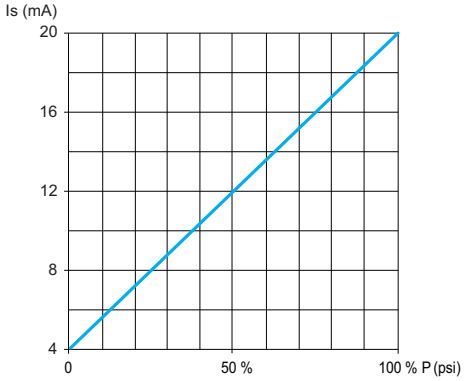
| | DIN 43650 A connector | M12 connector | Packard connector |
|---|---|---|---|
| |  |  |  |

| | | | | | |
|---|---|---|---|---|---|
| **Pressure range** | | **0…100 psi (0…6.9 bar)** | **0…150 psi (0…10.3 bar)** | **0…200 psi (0…13.8 bar)** | **0…300 psi (0….20.7 bar)** |
| **References** | | | | | |
| **Pressure transmitters XML K, DIN 43650 A connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K100P2C23** | **XML K150P2C23** | **XML K200P2C23** | **XML K300P2C23** |
| | bulk *(2)* | **XML K100P2C23TQ** | **XML K150P2C23TQ** | **XML K200P2C23TQ** | **XML K300P2C23TQ** |
| **Pressure transmitters XML K, M12 connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K100P2D23** | **XML K150P2D23** | **XML K200P2D23** | **XML K300P2D23** |
| | bulk *(2)* | **XML K100P2D23TQ** | **XML K150P2D23TQ** | **XML K200P2D23TQ** | **XML K300P2D23TQ** |
| **Pressure transmitters XML K, Packard connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K100P2P23** | **XML K150P2P23** | **XML K200P2P23** | **XML K300P2P23** |
| | bulk *(2)* | **XML K100P2P23TQ** | **XML K150P2P23TQ** | **XML K200P2P23TQ** | **XML K300P2P23TQ** |
| **Fluid connection (3)** | | 1/4"-18NPT male | | | |
| **Weight (kg)** | | 0.110 | 0.110 | 0.110 | 0.110 |
| **Complementary characteristics not shown under general characteristics** | | | | | |
| **Rated supply voltage** | | ⎓ 24 V | | | |
| **Voltage limits** | | ⎓ 8…33 V | | | |
| **Output (4)** | | 4…20 mA, 2-wire technique | | | |
| **Current consumption** | | < 20 mA | | | |
| **Maximum permissible accidental pressure** | | 200 psi (13.8 bar) | 300 psi (20.7 bar) | 400 psi (27.5 bar) | 600 psi (41 bar) |
| **Destruction pressure** | | 300 psi (20.7 bar) | 450 psi (31 bar) | 600 psi (41 bar) | 900 psi (62 bar) |
| **Electrical connection** | **DIN 43650 A connector** | EN 175301-803-A (male). For suitable female connector see accessories on page 2/28. | | | |
| | **M12 connector** | M12, 3-pin male. For suitable female connector, including pre-wired versions, see accessories on page 2/28. | | | |
| | **Packard connector** | 3-pin Delphi (Packard) Metri-Pack 150 series. | | | |

*(1) Other types of electrical connection, please consult our Customer Care Centre.*
*(2) Sold in lots of 25, minimum quantity 50.*
*(3) Other types of fluid connection, please consult our Customer Care Centre.*
*(4) Other types of output, please consult our Customer Care Centre.*

## Output curve

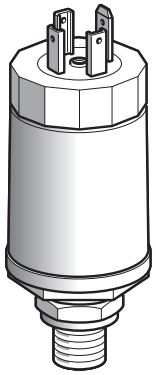
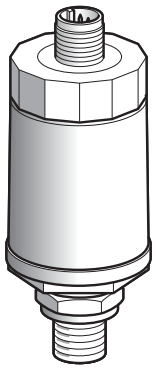
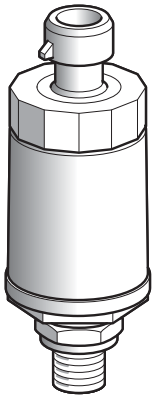
**XML K1●●P2●23**



# Electronic pressure sensors
## OsiSense XM
Pressure transmitters type XML K, PSI version
With analogue output 0-10 V
Sizes 0 to 300 psi (0 to 20.7 bar)



## Pressure transmitters type XML K, PSI version, DIN 43650 A, M12 or Packard connector *(1)*

| | DIN 43650 A connector | M12 connector | Packard connector |
|---|---|---|---|
| |  |  |  |

| | | | | | |
|---|---|---|---|---|---|
| **Pressure range** | | **0…100 psi (0…6.9 bar)** | **0…150 psi (0…10.3 bar)** | **0…200 psi (0…13.8 bar)** | **0…300 psi (0…20.7 bar)** |
| **References** | | | | | |
| **Pressure transmitters XML K, DIN 43650 A connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K100P2C73** | **XML K150P2C73** | **XML K200P2C73** | **XML K300P2C73** |
| | bulk *(2)* | **XML K100P2C73TQ** | **XML K150P2C73TQ** | **XML K200P2C73TQ** | **XML K300P2C73TQ** |
| **Pressure transmitters XML K, M12 connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K100P2D73** | **XML K150P2D73** | **XML K200P2D73** | **XML K300P2D73** |
| | bulk *(2)* | **XML K100P2D73TQ** | **XML K150P2D73TQ** | **XML K200P2D73TQ** | **XML K300P2D73TQ** |
| **Pressure transmitters XML K, Packard connector** | | | | | |
| **Sold in packs of:** | 1 | **XML K100P2P73** | **XML K150P2P73** | **XML K200P2P73** | **XML K300P2P73** |
| | bulk *(2)* | **XML K100P2P73TQ** | **XML K150P2P73TQ** | **XML K200P2P73TQ** | **XML K300P2P73TQ** |
| **Fluid connection (3)** | | 1/4"-18NPT male | | | |
| **Weight (kg)** | | 0.110 | 0.110 | 0.110 | 0.110 |

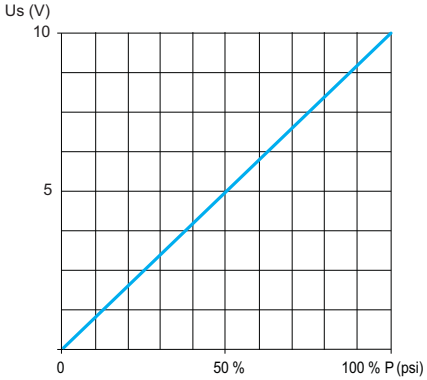
## Complementary characteristics not shown under general characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Rated supply voltage** | | ⎓ 24 V | | | |
| **Voltage limits** | | ⎓ 16.2…33 V | | | |
| **Output (4)** | | 0…10 V, 3-wire technique | | | |
| **Current consumption** | | < 6 mA | | | |
| **Maximum permissible accidental pressure** | | 200 psi (13.8 bar) | 300 psi (20.7 bar) | 400 psi (27.5 bar) | 600 psi (41 bar) |
| **Destruction pressure** | | 300 psi (20.7 bar) | 450 psi (31 bar) | 600 psi (41 bar) | 900 psi (62 bar) |
| **Electrical connection** | **DIN 43650 A connector** | EN 175301-803A (male). For suitable female connector see accessories on page 2/28. | | | |
| | **M12 connector** | M12, 3-pin male. For suitable female connector, including pre-wired versions, see accessories on page 2/28. | | | |
| | **Packard connector** | 3-pin Delphi (Packard) Metri-Pack 150 series. | | | |

*(1) Other types of electrical connection, please consult our Customer Care Centre.*
*(2) Sold in lots of 25, minimum quantity 50.*
*(3) Other types of fluid connection, please consult our Customer Care Centre.*
*(4) Other types of output, please consult our Customer Care Centre.*

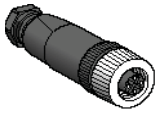
## Output curve

**XML K1●●P2●73**

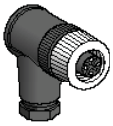


# Electronic pressure sensors
## Pressure transmitters type XML K
## Accessories



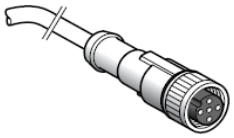


XZ CC12FDM40B

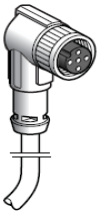


XZ CC12FCM40B

XZ CC43FCP40B



XZ CP1141L10



XZ CP1241L5

### Connection accessories

| Description | Type | Reference | Weight kg |
|---|---|---|---|
| **M12 female connector, metal clamping ring** *(1)* | Straight | **XZ CC12FDM40B** | 0.020 |
| | Elbowed | **XZ CC12FCM40B** | 0.020 |
| **DIN 43650 female connector** *(1)* | | **XZ CC43FCP40B** | 0.035 |

| Description | Length of cable | Reference | Weight kg |
|---|---|---|---|
| **Pre-wired M12, straight, female connectors** | 2 m | **XZ CP1141L2** | 0.090 |
| | 5 m | **XZ CP1141L5** | 0.190 |
| | 10 m | **XZ CP1141L10** | 0.370 |
| **Pre-wired M12, elbowed, female connectors** | 2 m | **XZ CP1241L2** | 0.090 |
| | 5 m | **XZ CP1241L5** | 0.190 |
| | 10 m | **XZ CP1241L10** | 0.370 |

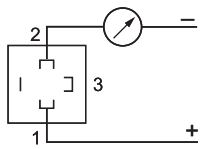
*(1) Connector with screw terminal connections.*

### Connector schemes (pressure sensor connector pin view)

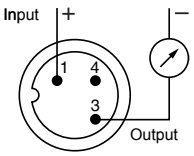
**Pressure transmitters XML K**

**2-wire technique (4-20 mA)**

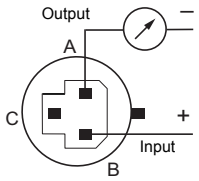
**DIN**




**M12**

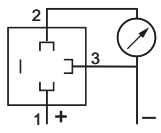



**Packard**

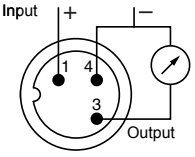



**3-wire technique (0-10 V)**

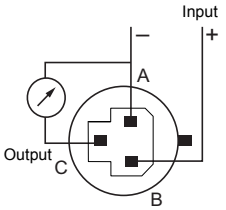
**DIN**




**M12**



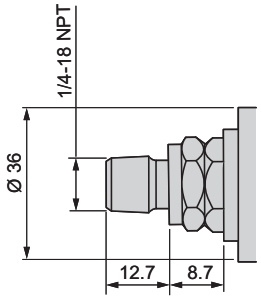

**Packard**



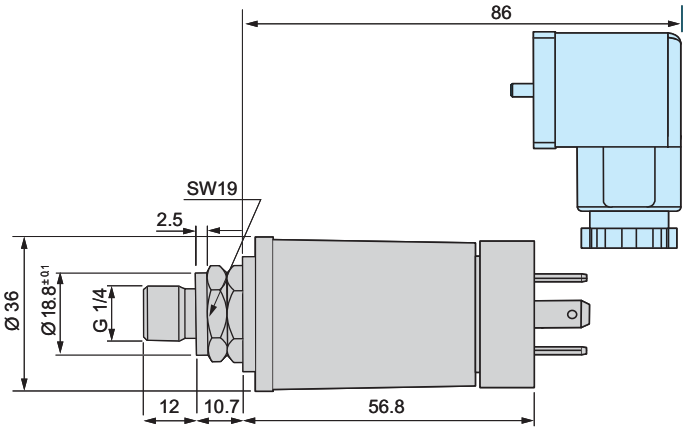
## Dimensions

### XML K, DIN connector

**NPT**

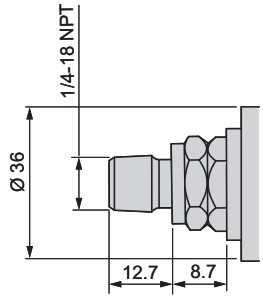



**G 1/4 A (male)**

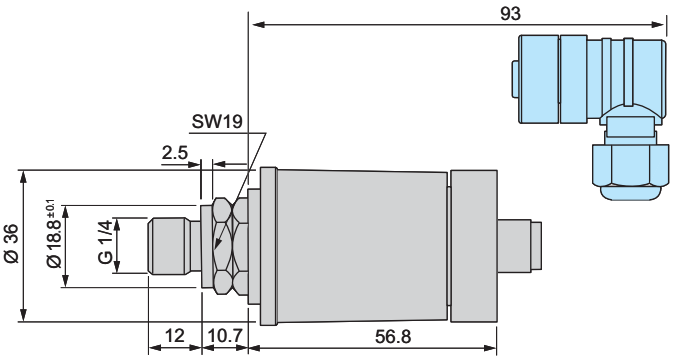



### XML K, M12 connector

**NPT**

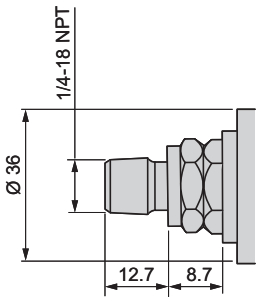



**G 1/4 A (male)**

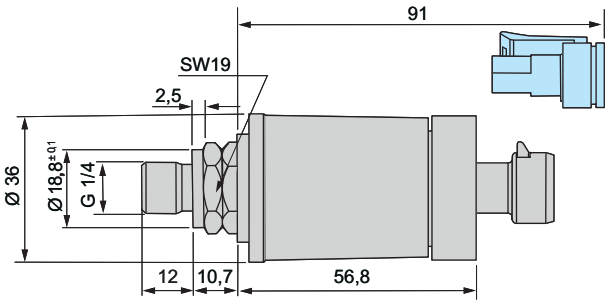



### XML K, Packard connector

**NPT**

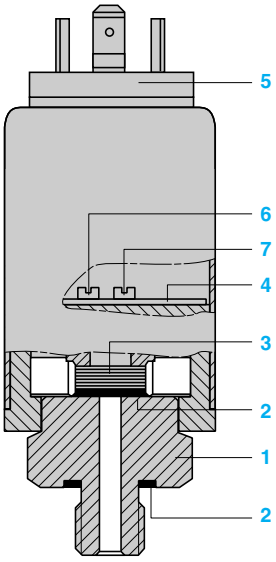



**G 1/4 A (male)**



# Electronic pressure sensors
## OsiSense XM, type XML E






### Presentation

Pressure switches and pressure transmitters type XML E are characterised by their ceramic pressure measuring cell.

1 Threaded fluid entry.

2 Sealing gaskets.

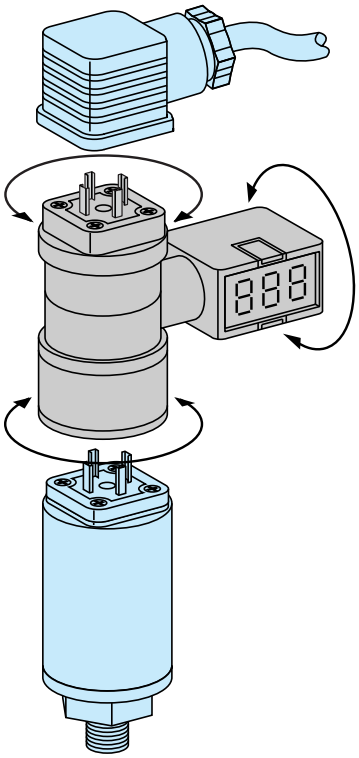
3 Measuring load cell (ceramic technology).

4 Electronic card.

5 Electrical connector.

6 Adjustment potentiometer for switching point PH (rising pressure). Only applicable to pressure switches.

7 Adjustment potentiometer for switching point PB (falling pressure). Only applicable to pressure switches.




### Operating principle

Pressure switches XML E incorporate a solid-state NPN or PNP NC output. Two potentiometers enable the setting of the PH (rising pressure) and PB (falling pressure) switching points.

Pressure transmitters XML E provide a 4-20 mA analogue output which is proportional to the measuring range.

A digital display unit can be directly plugged-in between the male and female DIN 43650 A connectors.
Simple unrestricted positioning of the display unit + sensor + connector.
The display can be adjusted to enable reading from any direction (360° orientation both vertically and horizontally).

# Electronic pressure sensors
OsiSense XM, type XML E

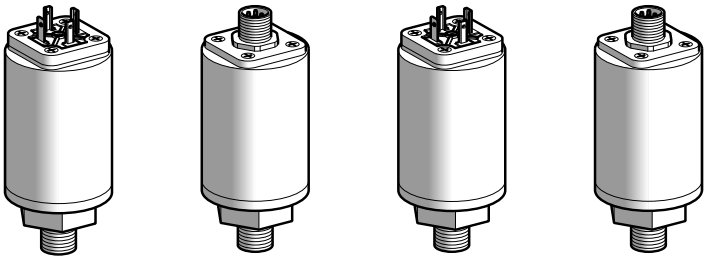


## Characteristics

| | | |
|---|---|---|
| **Conformity to standards** | | CE, EN 50081, EN 50082 |
| **Product certifications** | | UL, CSA |
| **Protective treatment** | | Standard version "TC" |
| **Ambient air temperature** | **°C** | For operation: - 15...+ 80 |
| **Fluids or products controlled** | | Hydraulic oils, air, fresh water, sea water, corrosive fluids from - 15…+ 80°C |
| **Component materials in contact with fluid** | | Stainless steel fluid entry type AISI 303, Viton gasket |
| **Operating position** | | All positions |
| **Vibration resistance** | **gn** | 5 (25…200 Hz) and 35 (60…2000 Hz) |
| **Shock resistance** | **gn** | 50 |
| **Electrical protection** | | Protected against reverse polarity, short-circuit and overload |
| **Degree of protection** | | IP 65 conforming to IEC/EN 60529 |
| **Operating rate** | **Hz** | 50 |
| **Response time** | **ms** | < 5 |
| **Service life** | **Op. cycles** | > 10 million |
| **Drift** | | Of the zero point: < ± 0.03% of the measuring range/°C<br>Of the sensitivity: < ± 0.015% of the measuring range/°C |
| **Precision** | | < ± 0.3% of the measuring range |
| **Fluid connection** | | G 1/4 A (BSP male) conforming to NF E 03-004, ISO 7 |
| **Electrical connection** | | DIN 43650 A or M12 connector |

# Electronic pressure sensors
## OsiSense XM
Transmitters without display, type XML E *(1)*
Sizes - 1 to 25 bar (- 14.5 to 362.5 psi)

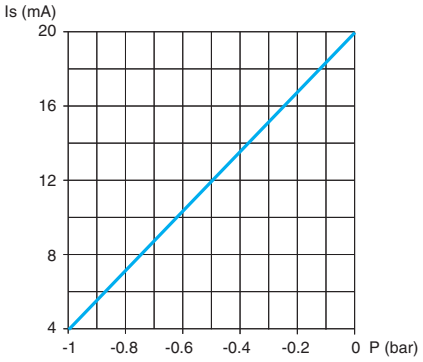


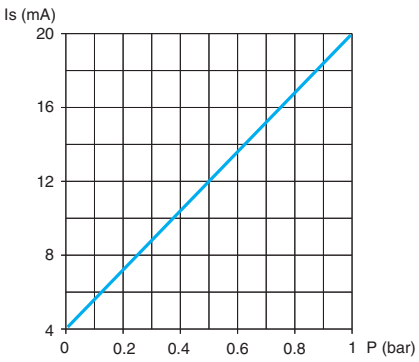
| Type | With analogue output, fluid connection G 1/4 A (male) | | | |
|---|---|---|---|---|
| |  | | | |
| **Pressure range** | **0…- 1 bar (0…- 14.5 psi)** | | **0…1 bar (0…14.5 psi)** | |
| **Electrical connector type** | DIN 43650 A | M12 | DIN 43650 A | M12 |
| **References** | | | | |
| **Fluids controlled** *(2)* Hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C | **XML EM01U1C21** | **XML EM01U1D21** | **XML E001U1C21** | **XML E001U1D21** |
| **Weight (kg)** | 0.250 | 0.300 | 0.250 | 0.300 |

| Complementary characteristics not shown under general characteristics (page 2/31) | | |
|---|---|---|
| **Maximum permissible accidental pressure** | 1 bar (14.5 psi) | 2 bar (29 psi) |
| **Destruction pressure** | 2 bar (29 psi) | 3 bar (43.5 psi) |
| **Rated supply voltage** | ⎓ **24 V** | |
| **Voltage limits** | ⎓ 11…33 V | |
| **Output** | Analogue, 4…20 mA, 2-wire technique | |
| **Current consumption** | < 20 mA | |
| **Electrical connection** | XML E●●●U1C21: DIN 43650A, 4-pin male connector. For suitable female connector, see page 2/40.<br>XML E●●●U1D21: M12, 5-pin male connector. For suitable female connector, see page 2/40. | |

*(1) Optional digital display for sensor, see page 2/40.*
*(2) Component materials of units in contact with the fluid, see page 2/31.*

## Output curves

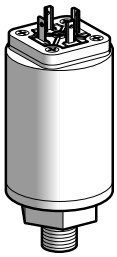



**Other versions** Pressure transmitters with 1/4" NPTF fluid connection. Please consult our Customer Care Centre.

Accessories: page 2/40
Dimensions: page 2/41
Schemes: page 2/41

## With analogue output, fluid connection G 1/4 A (male)




| 0…10 bar (0…145 psi) | | 0…25 bar (0…362.5 psi) | |
|---|---|---|---|
| DIN 43650 A | M12 | DIN 43650 A | M12 |

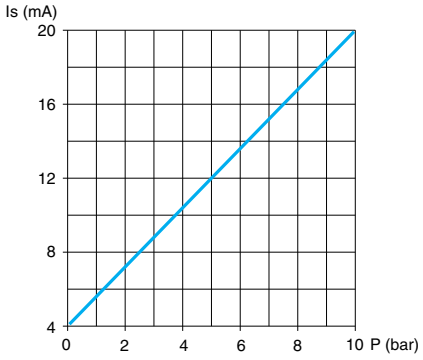
## References

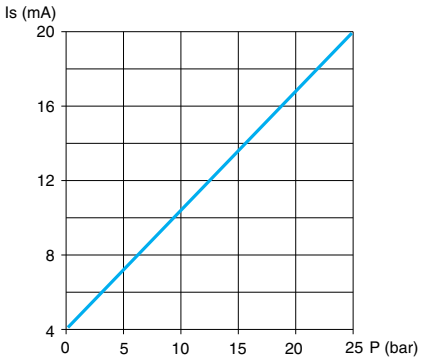
| XML E010U1C21 | XML E010U1D21 | XML E025U1C21 | XML E025U1D21 |
|---|---|---|---|
| 0.250 | 0.300 | 0.250 | 0.300 |

## Complementary characteristics not shown under general characteristics (page 2/31)

| | |
|---|---|
| 20 bar (290 psi) | 50 bar (725 psi) |
| 30 bar (435 psi) | 75 bar (1087.5 psi) |
| ⎓ 24 V | |
| ⎓ 11…33 V | |
| Analogue, 4…20 mA, 2-wire technique | |
| < 20 mA | |
| XML E●●●U1C21: DIN 43650A, 4-pin male connector. For suitable female connector, see page 2/40.<br>XML E●●●U1D21: M12, 5-pin male connector. For suitable female connector, see page 2/40. | |

## Output curves

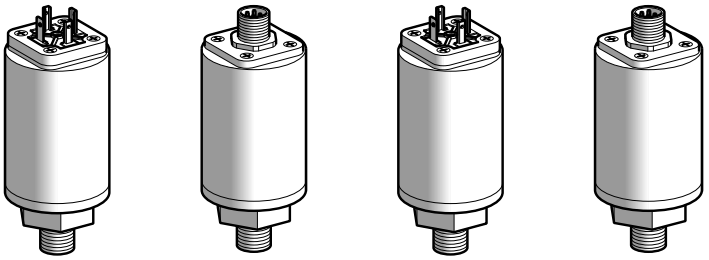



Accessories: page 2/40
Dimensions: page 2/41
Schemes: page 2/41

# Electronic pressure sensors
## OsiSense XM
Transmitters without display, type XML E *(1)*
Sizes 60 to 600 bar (870 to 8700 psi)



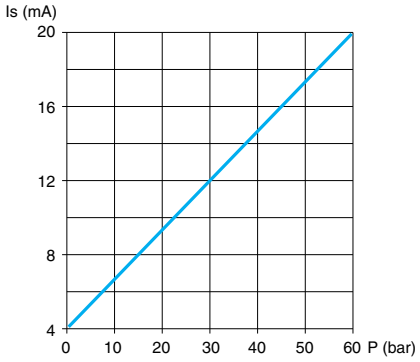
| Type | With analogue output, fluid connection G 1/4 A (male) | | | |
|---|---|---|---|---|
| |  | | | |
| **Pressure range** | **0…60 bar (0…870 psi)** | | **0…100 bar (0…1450 psi)** | |
| **Electrical connector type** | DIN 43650 A | M12 | DIN 43650 A | M12 |
| **References** | | | | |
| **Fluids controlled** *(2)* Hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C | **XML E060U1C21** | **XML E060U1D21** | **XML E100U1C21** | **XML E100U1D21** |
| **Weight (kg)** | 0.270 | 0.320 | 0.270 | 0.320 |

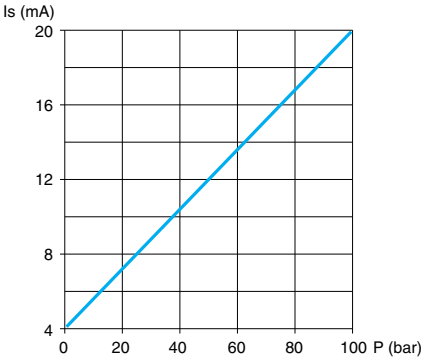
## Complementary characteristics not shown under general characteristics (page 2/31)

| | | |
|---|---|---|
| **Maximum permissible accidental pressure** | 120 bar (1740 psi) | 200 bar (2900 psi) |
| **Destruction pressure** | 180 bar (2610 psi) | 300 bar (4350 psi) |
| **Rated supply voltage** | ⎓ **24 V** | |
| **Voltage limits** | ⎓ 11…33 V | |
| **Output** | Analogue, 4…20 mA, 2-wire technique | |
| **Current consumption** | < 20 mA | |
| **Electrical connection** | XML E●●●U1C21: DIN 43650A, 4-pin male connector. For suitable female connector, see page 2/40.<br>XML E●●●U1D21: M12, 5-pin male connector. For suitable female connector, see page 2/40. | |

*(1) Optional digital display for sensor, see page 2/40.*
*(2) Component materials of units in contact with the fluid, see page 2/31.*

## Output curves

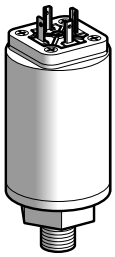


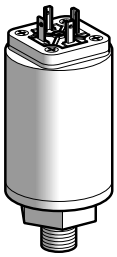
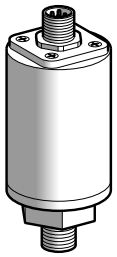




**Other versions** Pressure transmitters with 1/4" NPTF fluid connection. Please consult our Customer Care Centre.

Accessories: page 2/40
Dimensions: page 2/41
Schemes: page 2/41

## With analogue output, fluid connection G 1/4 A (male)



| 0…250 bar (0…3625 psi) | | 0…600 bar (0…8700 psi) | |
|---|---|---|---|
| DIN 43650 A | M12 | DIN 43650 A | M12 |

## References

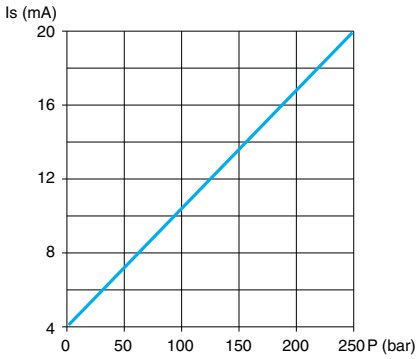
| XML E250U1C21 | XML E250U1D21 | XML E600U1C21 | XML E600U1D21 |
|---|---|---|---|
| 0.270 | 0.320 | 0.270 | 0.320 |

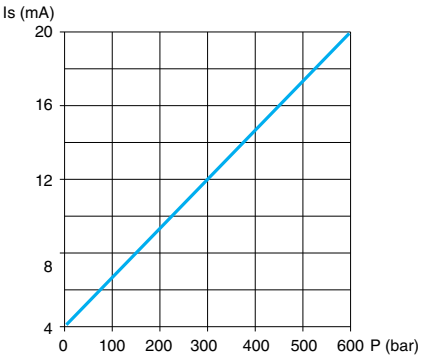
## Complementary characteristics not shown under general characteristics (page 2/31)

| | |
|---|---|
| 500 bar (7250 psi) | 1200 bar (17,400 psi) |
| 750 bar (10,875 psi) | 1800 bar (26,100 psi) |

| |
|---|
| ⎓ 24 V |
| ⎓ 11…33 V |
| Analogue, 4…20 mA, 2-wire technique |
| < 20 mA |
| XML E●●●U1C21: DIN 43650 A, 4-pin male connector. For suitable female connector, see page 2/40.<br>XML E●●●U1D21: M12, 5-pin male connector. For suitable female connector, see page 2/40. |

## Output curves



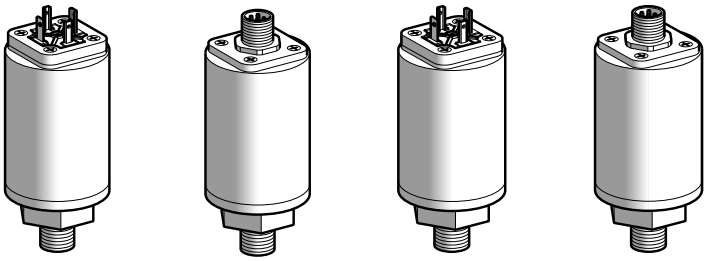

Accessories: page 2/40
Dimensions: page 2/41
Schemes: page 2/41

# Electronic pressure sensors

## OsiSense XM, type XML E

Vacuum and pressure switches without display *(1)*, with adjustable differential for regulation between 2 thresholds
Sizes - 1 to 25 bar (- 14.5 to 362.5 psi)



| **Type** | **With solid-state output, fluid connection G 1/4 A (male)** | | | |
|---|---|---|---|---|
| |  | | | |
| **Adjustable range of switching point (PH)** (Rising pressure) *(2)* | **- 0.07…- 1 bar (- 1.015…- 14.5 psi)** | | **0.07…1 bar (1015…14.5 psi)** | |
| **Electrical connector type** | DIN 43650 A | M12 | DIN 43650 A | M12 |

## References

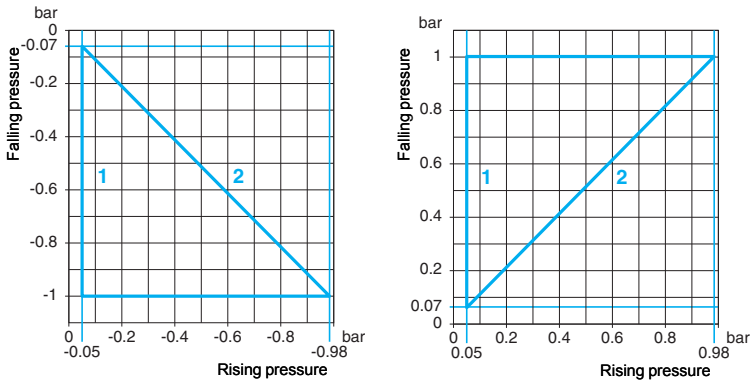
| **Fluids controlled** *(3)* | **Type of output** | | | | |
|---|---|---|---|---|---|
| Hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C | NPN | **XML EM01U1C31** | **XML EM01U1D31** | **XML E001U1C31** | **XML E001U1D31** |
| | PNP | **XML EM01U1C41** | **XML EM01U1D41** | **XML E001U1C41** | **XML E001U1D41** |
| **Weight (kg)** | | 0.250 | 0.300 | 0.250 | 0.300 |

## Complementary characteristics not shown under general characteristics (page 2/31)

| | | | |
|---|---|---|---|
| **Possible differential** | Min. at low setting | 0.02 bar (0.29 psi) | 0.02 bar (0.29 psi) |
| | Min. at high setting | 0.02 bar (0.29 psi) | 0.02 bar (0.29 psi) |
| | Max. at high setting | 0.95 bar (13.77 psi) (max. differential at low setting) | 0.95 bar (13.77 psi) |
| **Maximum permissible accidental pressure** | | 1 bar (14.5 psi) | 2 bar (29 psi) |
| **Destruction pressure** | | 2 bar (29 psi) | 3 bar (43.5 psi) |
| **Rated supply voltage** | | ⎓ **24 V** | |
| **Voltage limits** | | ⎓ 11…33 V | |
| **Output** | | Solid-state, NPN or PNP, NC | |
| **Switching capacity** | | 100 mA | |
| **Current consumption** | | < 15 mA | |
| **Electrical connection** | | XML E●●●U1C●1: DIN 43650 A, 4-pin male connector. For suitable female connector, see page 2/40.<br>XML E●●●U1D●1: M12, 4-pin male connector. For suitable female connector, see page 2/40. | |

*(1) Optional digital display for pressure switch, see page 2/40.*
*(2) For vacuum switches (size - 1 bar): adjustable range of switching point (PB) on falling pressure.*
*(3) Component materials of units in contact with the fluid, see page 2/31.*

## Operating curves

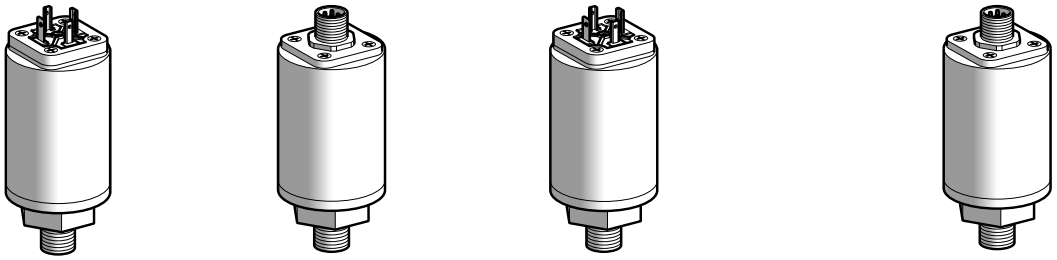



1 Maximum differential
2 Minimum differential

**Other versions** Pressure and vacuum switches with 1/4" NPTF fluid connection. Please consult our Customer Care Centre.

Accessories: page 2/40 Dimensions: page 2/41 Schemes: page 2/41

**With solid-state output, fluid connection G 1/4 A (male)**



| **0.7…10 bar (10.15…145 psi)** | | **1.75…25 bar (25.38…362.5 psi)** | |
|---|---|---|---|
| DIN 43650 A | M12 | DIN 43650 A | M12 |

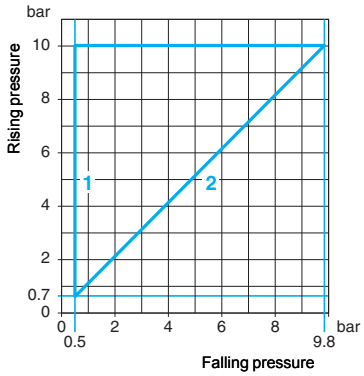
## References

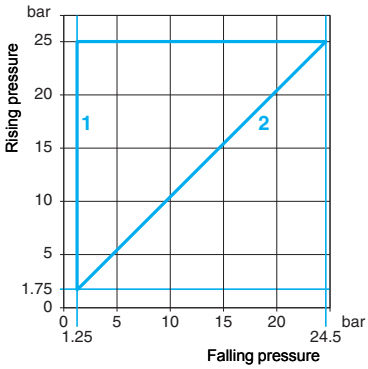
| | | | |
|---|---|---|---|
| **XML E010U1C31** | **XML E010U1D31** | **XML E025U1C31** | **XML E025U1D31** |
| **XML E010U1C41** | **XML E010U1D41** | **XML E025U1C41** | **XML E025U1D41** |
| 0.250 | 0.300 | 0.250 | 0.300 |

## Complementary characteristics not shown under general characteristics (page 2/31)

| | |
|---|---|
| 0.2 bar (2.9 psi) | 0.2 bar (2.9 psi) |
| 0.2 bar (2.9 psi) | 0.2 bar (2.9 psi) |
| 9.5 bar (137.7 psi) | 23.75 bar (344.37 psi) |
| 20 bar (290 psi) | 50 bar (725 psi) |
| 30 bar (435 psi) | 75 bar (1087.5 psi) |
| ⎓ **24 V** | |
| ⎓ 11…33 V | |
| Solid-state, NPN or PNP, NC | |
| 100 mA | |
| < 15 mA | |
| XML E●●●U1C●1: DIN 43650 A, 4-pin male connector. For suitable female connector, see page 2/40.<br>XML E●●●U1D●1: M12, 5-pin male connector. For suitable female connector, see page 2/40. | |

## Operating curves




1 Maximum differential
2 Minimum differential

Accessories: page 2/40
Dimensions: page 2/41
Schemes: page 2/41

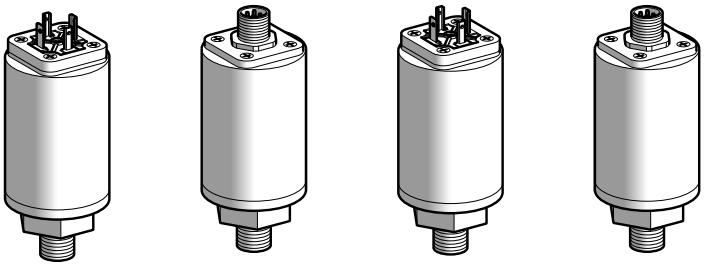
# Electronic pressure sensors

## OsiSense XM, type XML E

Pressure switches without display *(1)*, with adjustable differential for regulation between 2 thresholds
Sizes 60 to 600 bar (870 to 8700 psi)



| Type | With solid-state output, fluid connection G 1/4 A (male) | | | |
|---|---|---|---|---|



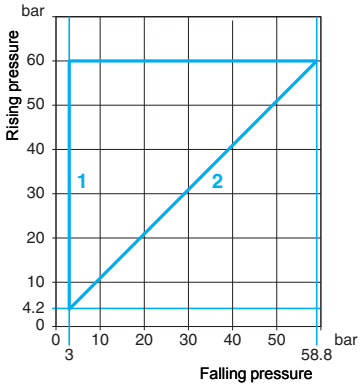
| | | | | | |
|---|---|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **4.2…60 bar (60.9…870 psi)** | | **7…100 bar (101.5…1450 psi)** | |
| **Electrical connector type** | | DIN 43650 A | M12 | DIN 43650 A | M12 |
| **References** | | | | | |
| **Fluids controlled** *(2)* | **Type of output** | | | | |
| Hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C | NPN | **XML E060U1C31** | **XML E060U1D31** | **XML E100U1C31** | **XML E100U1D31** |
| | PNP | **XML E060U1C41** | **XML E060U1D41** | **XML E100U1C41** | **XML E100U1D41** |
| **Weight (kg)** | | 0.270 | 0.320 | 0.270 | 0.320 |

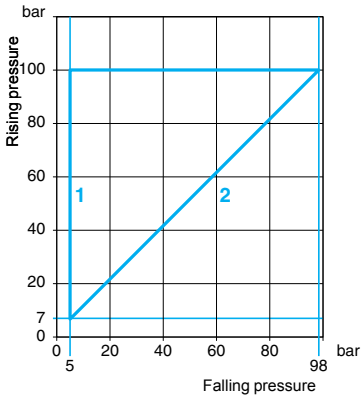
## Complementary characteristics not shown under general characteristics (page 2/31)

| | | | |
|---|---|---|---|
| **Possible differential** | Min. at low setting | 1.2 bar (17.4 psi) | 2 bar (29 psi) |
| | Min. at high setting | 1.2 bar (17.4 psi) | 2 bar (29 psi) |
| | Max. at high setting | 57 bar (826.5 psi) | 95 bar (1377.5 psi) |
| **Maximum permissible accidental pressure** | | 120 bar (1740 psi) | 200 bar (2900 psi) |
| **Destruction pressure** | | 180 bar (2610 psi) | 300 bar (4350 psi) |
| **Rated supply voltage** | | ⎓ **24 V** | |
| **Voltage limits** | | ⎓ 11…33 V | |
| **Output** | | Solid-state, NPN or PNP, NC | |
| **Switching capacity** | | 100 mA | |
| **Current consumption** | | < 15 mA | |
| **Electrical connection** | | XML E●●●U1C●1: DIN 43650 A, 4-pin male connector. For suitable female connector, see page 2/40.<br>XML E●●●U1D●1: M12, 5-pin male connector. For suitable female connector, see page 2/40. | |

*(1) Optional digital display for pressure switch, see page 2/40.*
*(2) Component materials of units in contact with the fluid, see page 2/41.*

## Operating curves



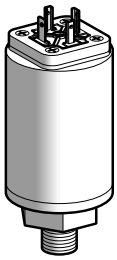



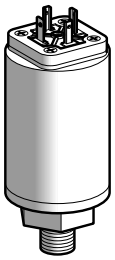
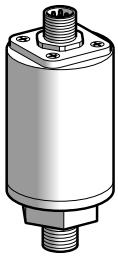

1 Maximum differential
2 Minimum differential

**Other versions** Pressure and vacuum switches with 1/4" NPTF fluid connection. Please consult our Customer Care Centre.

Accessories: page 2/40 Dimensions: page 2/41 Schemes: page 2/41

## With solid-state output, fluid connection G 1/4 A (male)



| 17.5…250 bar (253.7…3625 psi) | | 42…600 bar (609…8700 psi) | |
|---|---|---|---|
| DIN 43650 A | M12 | DIN 43650 A | M12 |

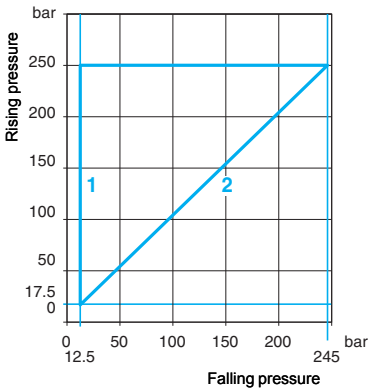
## References

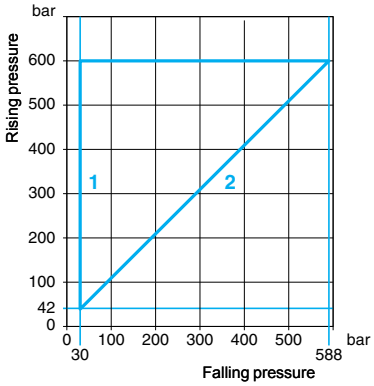
| | | | |
|---|---|---|---|
| **XML E250U1C31** | **XML E250U1D31** | **XML E600U1C31** | **XML E600U1D31** |
| **XML E250U1C41** | **XML E250U1D41** | **XML E600U1C41** | **XML E600U1D41** |
| 0.270 | 0.320 | 0.270 | 0.320 |

## Complementary characteristics not shown under general characteristics (page 2/31)

| | |
|---|---|
| 5 bar (72.5 psi) | 12 bar (174 psi) |
| 5 bar (72.5 psi) | 12 bar (174 psi) |
| 237.5 bar (3443.7 psi) | 570 bar (8265 psi) |
| 500 bar (7250 psi) | 1200 bar (17,400 psi) |
| 750 bar (10,875 psi) | 1800 bar (26,100 psi) |
| **⎓ 24 V** | |
| ⎓ 11…33 V | |
| Solid-state, NPN or PNP, NC | |
| 100 mA | |
| < 15 mA | |
| XML E●●●U1C●1: DIN 43650 A, 4-pin male connector. For suitable female connector, see page 2/40.<br>XML E●●●U1D●1: M12, 5-pin male connector. For suitable female connector, see page 2/40. | |

## Operating curves



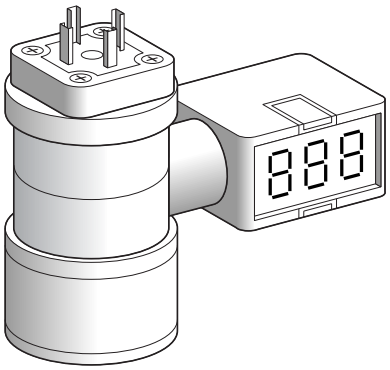




1 Maximum differential
2 Minimum differential

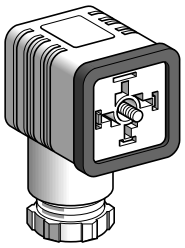
Accessories: page 2/40
Dimensions: page 2/41
Schemes: page 2/41

# Electronic pressure sensors
OsiSense XM, type XML E
Accessories

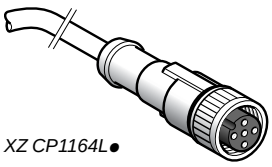




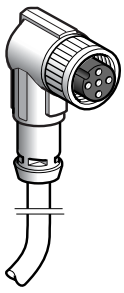

*XML EZ●●●●*



*XZ CC43FCP40B*



*XZ CP1164L●*



*XZ CP1264L●*

## Accessories

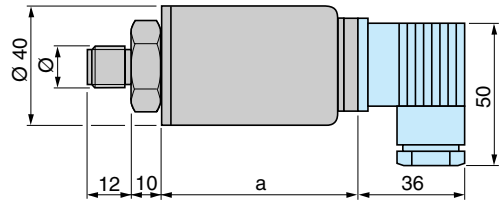
| Description | Sensor size | Reference | Weight |
|---|---|---|---|
| | bar | | kg |
| **Digital displays for analogue pressure sensors** | - 1…0 | **XML EZM01** | 0.100 |
| | 0…1 | **XML EZ001** | 0.100 |
| | 0…10 | **XML EZ010** | 0.100 |
| | 0…25 | **XML EZ025** | 0.100 |
| | 0…60 | **XML EZ060** | 0.100 |
| | 0…100 | **XML EZ100** | 0.100 |
| | 0…250 | **XML EZ250** | 0.100 |
| | 0…600 | **XML EZ600** | 0.100 |

## Connection accessories

| Description | Length of cable | Reference | Weight |
|---|---|---|---|
| | m | | kg |
| **Female DIN 43650 A connector** | – | **XZ CC43FCP40B** | 0.035 |
| **Pre-wired M12, straight, female connectors** | 2 m | **XZ CP1164L2** | 0.115 |
| | 5 m | **XZ CP1164L5** | 0.270 |
| | 10 m | **XZ CP1164L10** | 0.520 |
| **Pre-wired M12, elbowed, female connectors** | 2 m | **XZ CP1264L2** | 0.115 |
| | 5 m | **XZ CP1264L5** | 0.270 |
| | 10 m | **XZ CP1264L10** | 0.520 |

## Dimensions

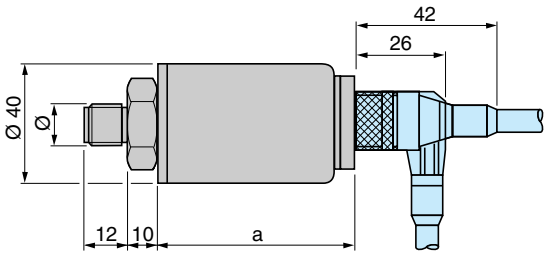
**XML E●●●U1C21, XML U1C31**




| XML E | a |
|---|---|
| **M01, 001, 010, 025** | 65 |
| **060, 250, 600** | 75 |

Ø: G 1/4 A (male)

**XML E●●●U1D31**

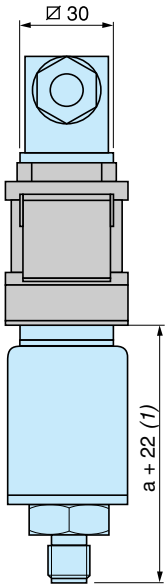


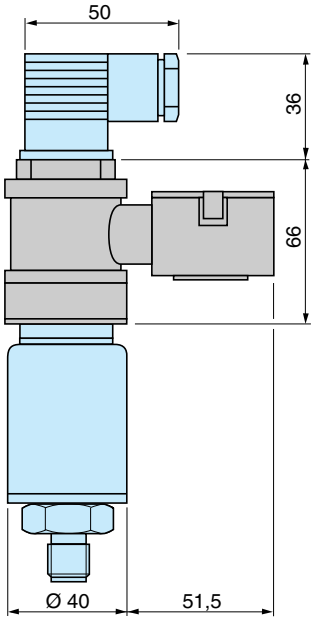

| XML E | a |
|---|---|
| **M01, 001, 010, 025** | 65 |
| **060, 250, 600** | 75 |

Ø: G 1/4 A (male)

### Digital displays

**XML EZ●●●**



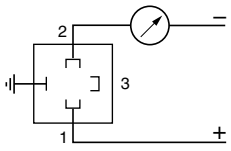




*(1) a = 65 or 75, see above.*

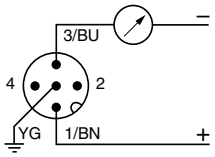
## Wiring schemes

**Pressure transmitters** *(1)*

**XML E●●●U1C21**



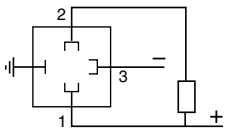

**XML E●●●U1D21**



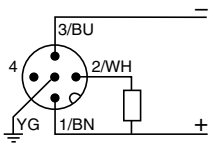

*(1) Sensor connector pin view*

**Electronic pressure switches** *(2)*

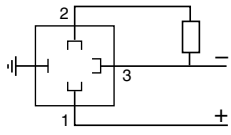
**XML E●●●U1C31**



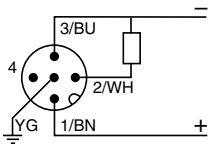

**XML E●●●U1D31**




**XML E●●●U1C41**



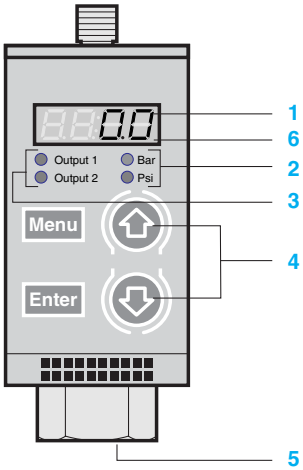

**XML E●●●U1D41**




*(2) Switch connector pin view*

# Electronic pressure sensors
## OsiSense XM
### For control circuits, type XML F






## Presentation

Electronic pressure sensors type XML F are used for pressure control of hydraulic oils, fresh water, sea water, air and corrosive fluids, between − 1 and 600 bar.

■ **Simplicity of setting-up**

Electronic pressure sensors type XML F are characterised by their ceramic pressure measuring cell.

1 Large 4-digit display indicating programming codes, parameter values or the measured pressure.
2 LED indicators for pressure unit of measurement selected (direct reading of bar or psi).
3 LED indicator(s) for providing status of pressure switch output(s).
4 Ergonomic keys for configuring the product via the pull-down menu.
5 Excellent resistance to overpressures.
6 Memorisation and possibility of reading pressure peaks within the installation.

□ Three menus enable the user to:
- configure ("PROG" menu) the various functions of the unit (access to all the parameters of the product),
- perform ("USER" menu) diagnostic operations and, for pressure switches, to set the switching point pressure values,
- read ("READ" menu) all the configuration details, together with the values set in the "PROG" and "USER" menus.

## Functions

■ Pressure transmitters **XML F●●●D2●1●** have a 4…20 mA or 0…10 V analogue output. In addition to having a manual diagnostic function (see below), they also incorporate a remote diagnostic function: a digital input connected, for example, to a PLC enables remote activation of the sensor's test function. When the sensor is operating correctly, the analogue output must, when testing, be close to 50% of the sensor size (12 mA or 5 V).

■ Universal sensors **XML F●●●D2●2●** are pressure switches with an adjustable differential, for regulation between 2 thresholds, featuring a solid-state output (configurable both for NPN or PNP and NO or NC), and a 4…20 mA or 0…10 V analogue output. They incorporate the manual diagnostic function (see below).

■ Pressure switches **XML F●●●D2●3●** are dual stage switches, with adjustable differential for each threshold, featuring 2 solid-state outputs (configurable both for NPN or PNP and NO or NC). They incorporate the manual diagnostic function (see below).

■ Pressure switches **XML F●●●E2●4●** for AC control are switches with adjustable differential, for regulation between 2 thresholds, featuring an ∿ 2.5 A relay output (configurable for NO or NC). They incorporate the manual diagnostic function (see below).

**Sensors type XML F feature:**

■ **Various configurable functions**

□ For the display:
- pressure unit of measurement (bar or psi),
- response time (slow: display refreshes in 1% steps of the units size, normal: display refreshes in 0.5% steps of the units size or fast: display refreshes every 10 ms).

□ For the analogue output:
- response time (adjustable from 5 to 500 ms, in steps of 1 ms),
- maximum pressure of the output curve (adjustable from 75 to 125% of the units size).

□ For each solid-state output:
- PNP or NPN logic,
- NO or NC output,
- time delay both on trip and on reset (adjustable from 0 to 50 s, in steps of 1 s),
- response time (adjustable from 5 to 500 ms, in steps of 1 ms).

□ For the AC relay output models:
- NO or NC contact,
- time delay both on trip and on reset (adjustable from 0 to 50 s, in steps of 1 s),
- response time (adjustable from 5 to 500 ms, in steps of 1 ms).

■ **Manual diagnostic function enabling:**
- checking correct operation of sensor,
- reading the value of the maximum pressure peak that has occurred since the last reset to zero and also, deleting this value for a fresh reset.

# Electronic pressure sensors
## OsiSense XM
### For control circuits, type XML F

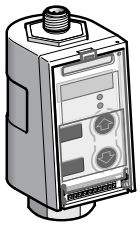


## Environment characteristics

| | | |
|---|---|---|
| **Conformity to standards** | | CE,<br>IEC/EN 60947-1,<br>IEC/EN 60947-5-1,<br>EN 50081, EN 50082, EN 61000-6-2, EN 61000-4-2/3/4/5/6/8/11 |
| **Product certifications** | | UL, CSA |
| **Protective treatment** | | Standard version "TC" |
| **Ambient air temperature** | For operation | - 25…+ 80°C (DC models) |
| | | - 25…+ 75°C (AC models) |
| **Fluids or products controlled** | | Hydraulic oils, air, fresh water, sea water, corrosive fluids from - 15…+ 80°C |
| **Component materials in contact with fluid** | | Stainless steel fluid entry type AISI 303, viton gasket |
| **Operating position** | | All positions |
| **Vibration resistance** | | 5 gn (25…200 Hz) and 35 gn (60…2000 Hz), conforming to IEC 68-2-6 |
| **Shock resistance** | | 50 gn, conforming to IEC 68-2-27 |
| **Electrical protection** | | Protected against reverse polarity, short-circuit, overload and connection faults |
| **Resistance to electromagnetic interference** | Electrostatic discharges | Standard EN 61000-4-2 contact 4kV, air 8 kV |
| | Radiated electromagnetic fields | Standard EN 61000-4-3 10 V/m |
| | Fast transients | Standard EN 61000-4-4 2 kV |
| | Surges | Standard EN 61000-4-5 (AC) 1 kV, (DC) 0.5 kV |
| | Conducted disturbances, induced by radio frequency fields | Standard EN 61000-4-6 10 V |
| **Degree of protection** | | IP 67 conforming to IEC/EN 60529, NEMA 4/6/12/13 |
| **Operating rate** | | < 50 Hz |
| **Output response time** | | Adjustable from 5 to 500 ms, in steps of 1 ms |
| **Service life** | In millions of operating cycles | > 10 |
| **Drift** | Of the zero point | < ± 0.1% of the measuring range/°C |
| | Of the sensitivity | < ± 0.03% of the measuring range/°C |
| **Precision** | Analogue output | ≤ 0.6% of the measuring range, output offset < 200 mV |
| | Solid-state output | ≤ 0.6% of the measuring range |
| **Repeat accuracy** | | ≤ 0.5 % of the measuring range |
| **Display response time** | | Adjustable; 3 options:<br>- slow (1% of the units size),<br>- normal (0.5% of the units size), or<br>- fast (refreshed every 10 ms) |
| **Fluid connection** | | G 1/4 (BSP female) conforming to NF E 03-004 and ISO 7 or 1/4" NPT female, depending on model |
| **Electrical connection** | | M12 or SAE 7/8"-16UN connector, depending on model |

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size - 1 bar (- 14.5 psi)

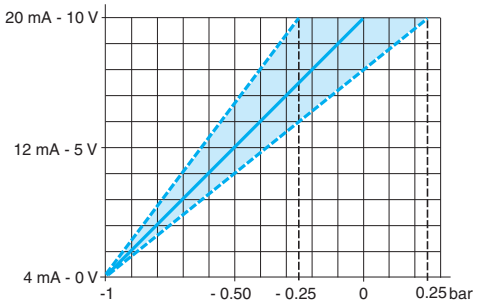


| Type | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|
| |  | |  | |
| **Adjustable range of switching point (PB)** (Falling pressure) | – | | **- 0.08…- 1 bar (- 1.16…- 14.5 psi)** | |
| **Analogue output** | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | |
| **Fluid connection** *(2) (3)* G 1/4 female | **XML FM01D2015** | **XML FM01D2115** | **XML FM01D2025** | **XML FM01D2125** |
| 1/4" NPT female | **XML FM01D2016** | **XML FM01D2116** | **XML FM01D2026** | **XML FM01D2126** |
| **Weight (kg)** | 0.480 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | |
| **Possible differential** (add to PB to give PH) Min. at low and high setting | – | | 0.03 bar (0.44 psi) | |
| Max. at low setting | – | | 0.95 bar (13.77 psi) | |
| **Maximum permissible accidental pressure** | 3 bar (43.5 psi) | | | |
| **Destruction pressure** | 5 bar (72.5 psi) | | | |
| **Rated supply voltage** | ⎓ **24 V** | | | |
| **Voltage limits** | ⎓ 17…33 V | | | |
| **Current consumption** | 80 mA | | | |
| **Output** | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | – | | 200 mA | |
| **Analogue output** | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between - 0.25 and 0.25 bar (- 3.62 and 3.62 psi) | | | |
| **Electrical connection** | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

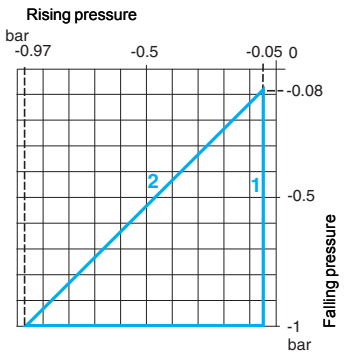
*(1) Vacuum sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Curves

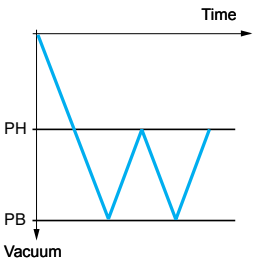
**Analogue output curve**




**Vacuum switch operating curves**




1 Maximum differential
2 Minimum differential

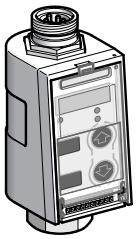
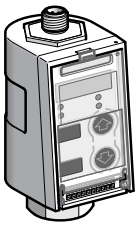



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size - 1 bar (- 14.5 psi)



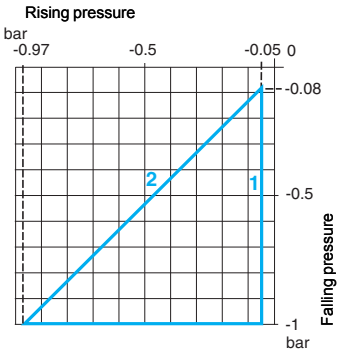
| Type | | Vacuum switches with adjustable differential and relay output *(1)* | Dual stage adjustable vacuum switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PB or PB1 and PB2)** (Falling pressure) | | **- 0.08…- 1 bar (- 1.16…- 14.5 psi)** | |
| **References** | | | |
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML FM01E2045** | **XML FM01D2035** |
| | 1/4" NPT female | **XML FM01E2046** | **XML FM01D2036** |
| **Weight (kg)** | | 0.590 | 0.480 |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | |
| **Possible differential** (add to: - PB to give PH - PB1 & PB2 to give PH1 & PH2) | Min. at low and high setting | 0.03 bar (0.44 psi) | For each stage: min. at low and high setting: 0.03 bar (0.44 psi) max. at low setting: 0.95 bar (13.77 psi) |
| | Max. at low setting | 0.95 bar (13.77 psi) | |
| **Maximum permissible accidental pressure** | | 3 bar (43.5 psi) | |
| **Destruction pressure** | | 5 bar (72.5 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page. 2/71 |

*(1) Vacuum switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Vacuum switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

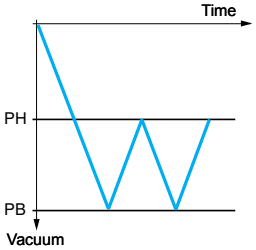
## Vacuum switch operating curves

(Curve for each stage for dual stage vacuum switches)

**Vacuum switches with relay output**

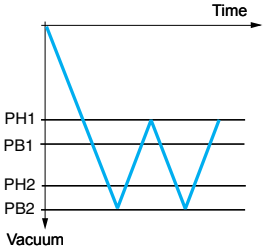



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage vacuum switches**

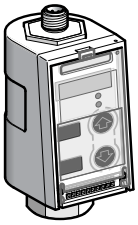



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 1 bar (14.5 psi)

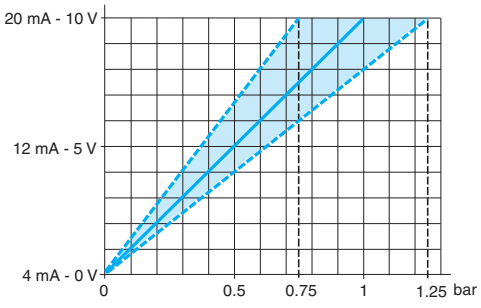


| Type | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|
| |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | – | | **0.08…1 bar (1.16…14.5 psi)** | |
| **Analogue output** | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | |
| **Fluid connection** *(2) (3)* G 1/4 female | **XML F001D2015** | **XML F001D2115** | **XML F001D2025** | **XML F001D2125** |
| 1/4" NPT female | **XML F001D2016** | **XML F001D2116** | **XML F001D2026** | **XML F001D2126** |
| **Weight (kg)** | 0.480 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | |
| **Possible differential** (subtract from PH to give PB) Min. at low and high setting | – | | 0.03 bar (0.44 psi) | |
| Max. at high setting | – | | 0.95 bar (13.77 psi) | |
| **Maximum permissible accidental pressure** | 4 bar (58 psi) | | | |
| **Destruction pressure** | 6 bar (87 psi) | | | |
| **Rated supply voltage** | ⎓ **24 V** | | | |
| **Voltage limits** | ⎓ 17…33 V | | | |
| **Current consumption** | 80 mA | | | |
| **Output** | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | – | | 200 mA | |
| **Analogue output** | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 0.75 and 1.25 bar (10.88 and 18.12 psi) | | | |
| **Electrical connection** | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

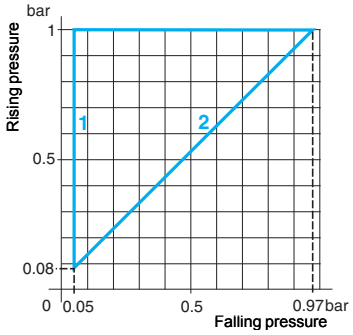
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Curves

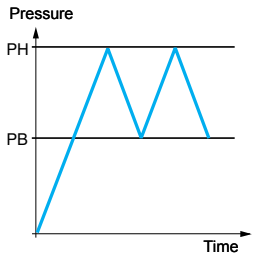
**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

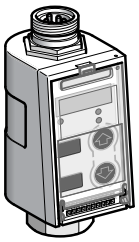
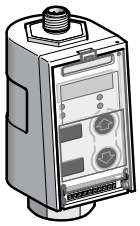



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 1 bar (14.5 psi)



| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **0.08…1 bar (1.16…14.5 psi)** | |

## References

| | | | |
|---|---|---|---|
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F001E2045** | **XML F001D2035** |
| | 1/4" NPT female | **XML F001E2046** | **XML F001D2036** |
| **Weight (kg)** | | 0.590 | 0.480 |

## Complementary characteristics not shown under general characteristics (page 2/43)

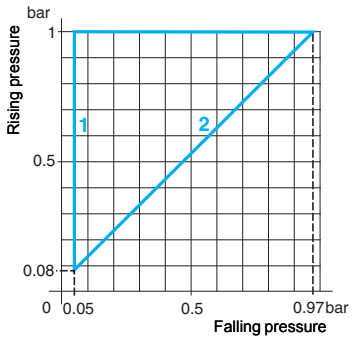
| | | | |
|---|---|---|---|
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 0.03 bar (0.44 psi) | For each stage: min. at low and high setting: 0.03 bar (0.44 psi) max. at high setting: 0.95 bar (13.77 psi) |
| | Max. at high setting | 0.95 bar (13.77 psi) | |
| **Maximum permissible accidental pressure** | | 4 bar (58 psi) | |
| **Destruction pressure** | | 6 bar (87 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

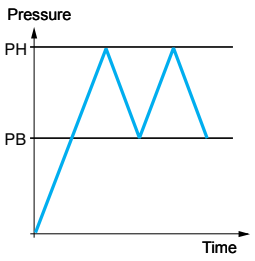
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

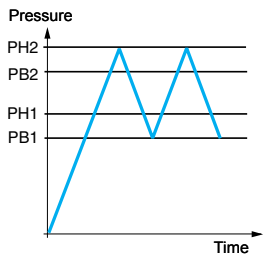



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

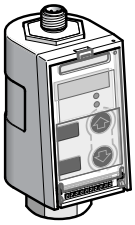
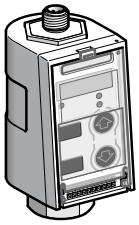



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 2.5 bar (36.25 psi)

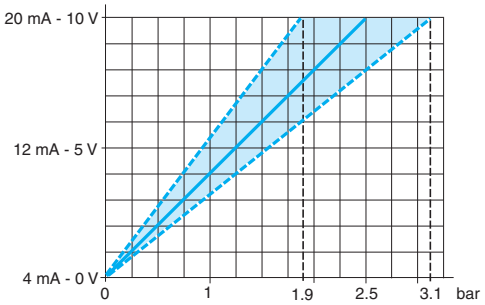


| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **0.20…2.5 bar (2.9…36.25 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F002D2015** | **XML F002D2115** | **XML F002D2025** | **XML F002D2125** |
| | 1/4" NPT female | **XML F002D2016** | **XML F002D2116** | **XML F002D2026** | **XML F002D2126** |
| **Weight (kg)** | | 0.480 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | | 0.08 bar (1.09 psi) | |
| | Max. at high setting | – | | 2.38 bar (34.51 psi) | |
| **Maximum permissible accidental pressure** | | 10 bar (145 psi) | | | |
| **Destruction pressure** | | 15 bar (217.5 psi) | | | |
| **Rated supply voltage** | | ⎓ 24 V | | | |
| **Voltage limits** | | ⎓ 17…33 V | | | |
| **Current consumption** | | 80 mA | | | |
| **Output** | | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | – | | 200 mA | |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 1.9 and 3.1 bar (27.5 and 44.9 psi) | | | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

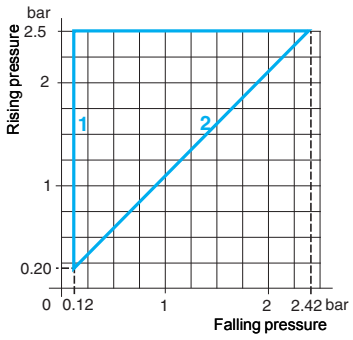
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Curves

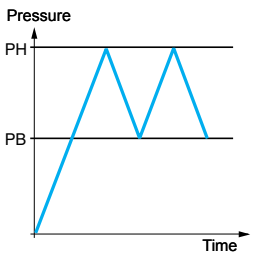
**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

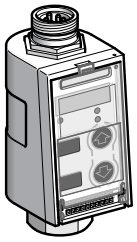
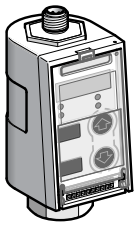



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 2.5 bar (36.25 psi)



| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **0.20…2.5 bar (2.9…36.25 psi)** | |

## References

| | | | |
|---|---|---|---|
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F002E2045** | **XML F002D2035** |
| | 1/4" NPT female | **XML F002E2046** | **XML F002D2036** |
| **Weight (kg)** | | 0.590 | 0.480 |

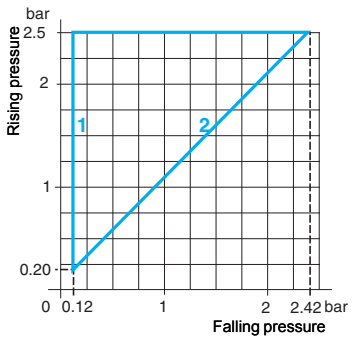
## Complementary characteristics not shown under general characteristics (page 2/43)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 0.08 bar (1.09 psi) | For each stage: min. at low and high setting: 0.08 bar (1.09 psi) max. at high setting: 2.38 bar (34.51 psi) |
| | Max. at high setting | 2.38 bar (34.51 psi) | |
| **Maximum permissible accidental pressure** | | 10 bar (145 psi) | |
| **Destruction pressure** | | 15 bar (217.5 psi) | |
| **Rated supply voltage** | | ∿ 120 V | ⎓ 24 V |
| **Voltage limits** | | ∿ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

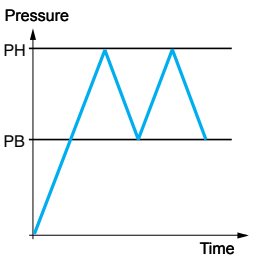
*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Pressure switch operating curves (Curve for each stage for dual stage pressure switches)

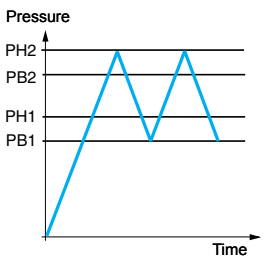
| | Pressure switches with relay output | Dual stage pressure switches |
|---|---|---|




1 Maximum differential
2 Minimum differential




–– Adjustable value

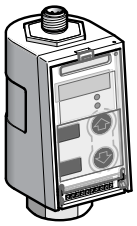



–– Adjustable value

Accessories: page 2/70 | Dimensions: page 2/71 | Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 10 bar (145 psi)

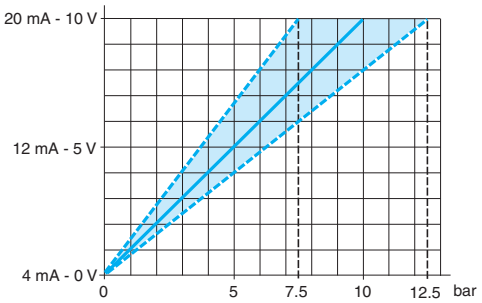


| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **0.8…10 bar (11.6…145 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F010D2015** | **XML F010D2115** | **XML F010D2025** | **XML F010D2125** |
| | 1/4" NPT female | **XML F010D2016** | **XML F010D2116** | **XML F010D2026** | **XML F010D2126** |
| **Weight (kg)** | | 0.480 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | | 0.3 bar (4.4 psi) | |
| | Max. at high setting | – | | 9.5 bar (137.75 psi) | |
| **Maximum permissible accidental pressure** | | 40 bar (580 psi) | | | |
| **Destruction pressure** | | 60 bar (870 psi) | | | |
| **Rated supply voltage** | | ⎓ **24 V** | | | |
| **Voltage limits** | | ⎓ 17…33 V | | | |
| **Current consumption** | | 80 mA | | | |
| **Output** | | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | – | | 200 mA | |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 7.5 and 12.5 bar (108.75 and 181.25 psi) | | | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

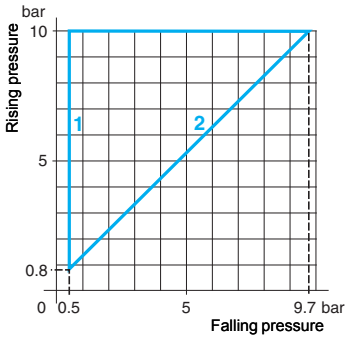
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Curves

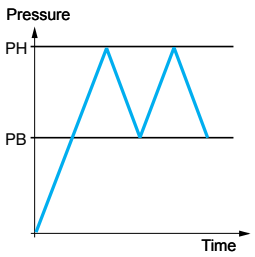
**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

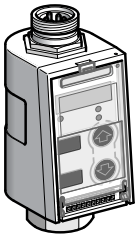
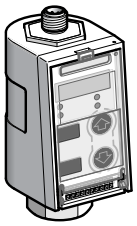



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 10 bar (145 psi)



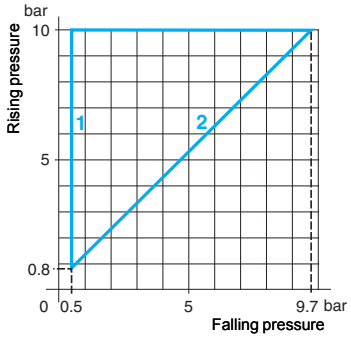
| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **0.8…10 bar (11.6…145 psi)** | |
| **References** | | | |
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F010E2045** | **XML F010D2035** |
| | 1/4" NPT female | **XML F010E2046** | **XML F010D2036** |
| **Weight (kg)** | | 0.590 | 0.480 |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | |
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 0.3 bar (4.4 psi) | For each stage: min. at low and high setting: 0.3 bar (4.4 psi) max. at high setting: 9.5 bar (137.75 psi) |
| | Max. at high setting | 9.5 bar (137.75 psi) | |
| **Maximum permissible accidental pressure** | | 40 bar (580 psi) | |
| **Destruction pressure** | | 60 bar (870 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

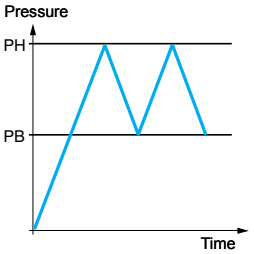
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

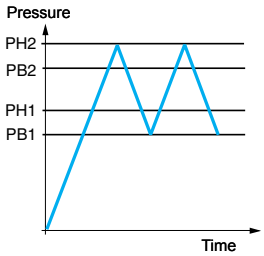



1 Maximum differential
2 Maximum differential




–– Adjustable value

**Dual stage pressure switches**

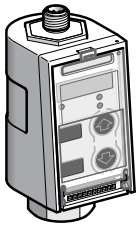



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 16 bar (232 psi)



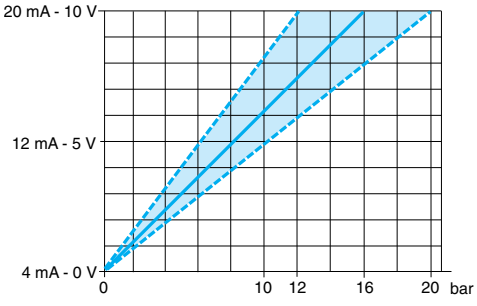
| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **1.28…16 bar (18.56…232 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2)* | G 1/4 female | **XML F016D2015** | **XML F016D2115** | **XML F016D2025** | **XML F016D2125** |
| | 1/4" NPT female | **XML F016D2016** | **XML F016D2116** | **XML F016D2026** | **XML F016D2126** |
| | SAE 7/16-20UNF | **XML F016D2019** | **XML F016D2119** | **XML F016D2029** | **XML F016D2129** |
| **Weight (kg)** | | 0.480 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | | 0.48 bar (6.96 psi) | |
| | Max. at high setting | – | | 15.2 bar (220.4 psi) | |
| **Maximum permissible accidental pressure** | | 64 bar (928 psi) | | | |
| **Destruction pressure** | | 96 bar (1392 psi) | | | |
| **Rated supply voltage** | | ⎓ **24 V** | | | |
| **Voltage limits** | | ⎓ 17…33 V | | | |
| **Current consumption** | | 80 mA | | | |
| **Output** | | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | – | | 200 mA | |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 12 and 20 bar (174 and 290 psi) | | | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*

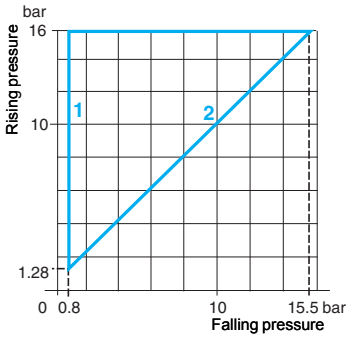
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*

## Curves

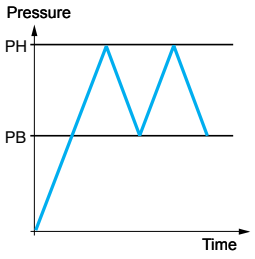
**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

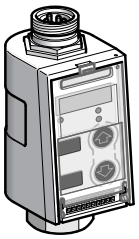
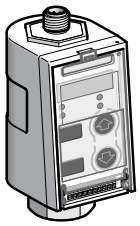



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 16 bar (232 psi)



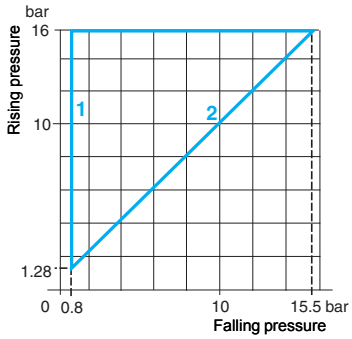
| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **1.28…16 bar (18.56…232 psi)** | |
| **References** | | | |
| **Fluid connection** *(3)* | G 1/4 female | **XML F016E2045** | **XML F016D2035** |
| | 1/4" NPT female | **XML F016E2046** | **XML F016D2036** |
| | SAE 7/16-20UNF | **XML F016E2049** | **XML F016D2039** |
| **Weight (kg)** | | 0.590 | 0.480 |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | |
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 0.48 bar (6.96 psi) | For each stage: min. at low and high setting: 0.48 bar (6.96 psi) max. at high setting: 15.2 bar (220.4 psi) |
| | Max. at high setting | 15.2 bar (220.4 psi) | |
| **Maximum permissible accidental pressure** | | 64 bar (928 psi) | |
| **Destruction pressure** | | 96 bar (1392 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*

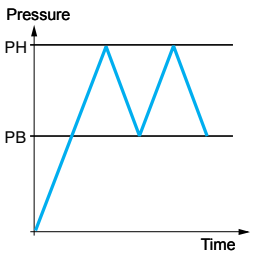
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

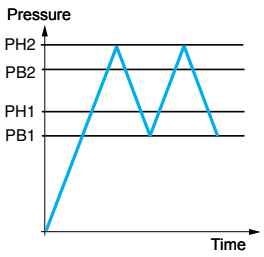



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

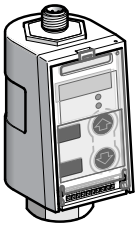



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 25 bar (362.5 psi)



| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **2…25 bar (29…362.5 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F025D2015** | **XML F025D2115** | **XML F025D2025** | **XML F025D2125** |
| | 1/4" NPT female | **XML F025D2016** | **XML F025D2116** | **XML F025D2026** | **XML F025D2126** |
| **Weight (kg)** | | 0.480 | | | |

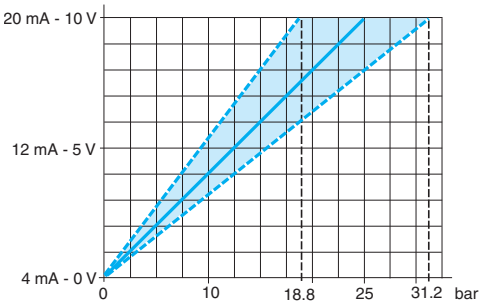
## Complementary characteristics not shown under general characteristics (page 2/43)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | 0.75 bar (10.9 psi) |
| | Max. at high setting | – | 23.8 bar (345.1 psi) |
| **Maximum permissible accidental pressure** | | 100 bar (1450 psi) | |
| **Destruction pressure** | | 150 bar (2175 psi) | |
| **Rated supply voltage** | | ⎓ **24 V** | |
| **Voltage limits** | | ⎓ 17…33 V | |
| **Current consumption** | | 80 mA | |
| **Output** | | – | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | – | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second |
| **Switching capacity** | | – | 200 mA |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 18.8 and 31.2 bar (272.6 and 452.4 psi) | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | |

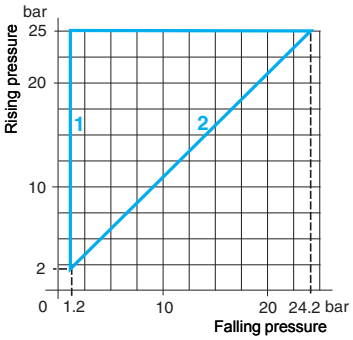
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Curves

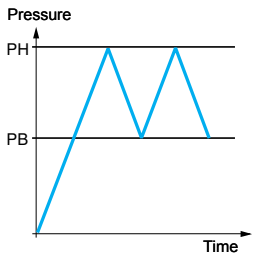
**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

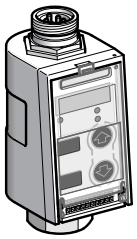
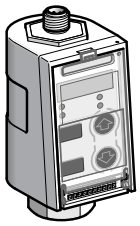



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 25 bar (362.5 psi)



| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **2…25 bar (29…362.5 psi)** | |

## References

| | | | |
|---|---|---|---|
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F025E2045** | **XML F025D2035** |
| | 1/4" NPT female | **XML F025E2046** | **XML F025D2036** |
| **Weight (kg)** | | 0.590 | 0.480 |

## Complementary characteristics not shown under general characteristics (page 2/43)

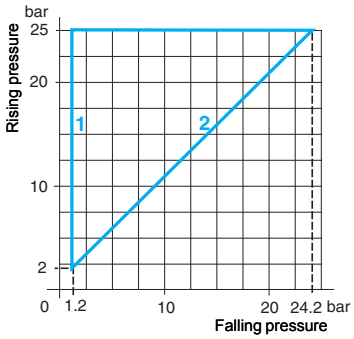
| | | | |
|---|---|---|---|
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 0.75 bar (10.9 psi) | For each stage: min. at low and high setting: 0.75 bar (10.9 psi) max. at high setting: 23.8 bar (345.1 psi) |
| | Max. at high setting | 23.8 bar (345.1 psi) | |
| **Maximum permissible accidental pressure** | | 100 bar (1450 psi) | |
| **Destruction pressure** | | 150 bar (2175 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

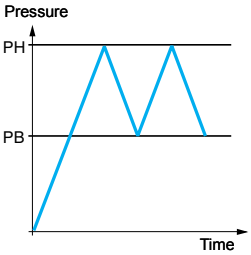
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

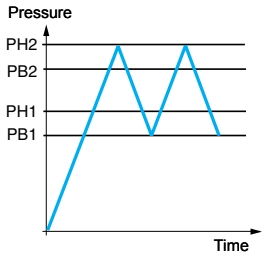



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

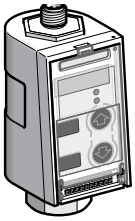



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 40 bar (580 psi)

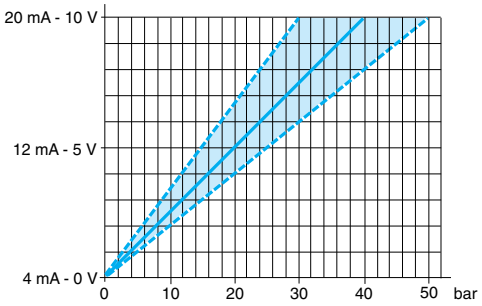


| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **3.2…40 bar (46.4…580 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F040D2015** | **XML F040D2115** | **XML F040D2025** | **XML F040D2125** |
| | 1/4" NPT female | **XML F040D2016** | **XML F040D2116** | **XML F040D2026** | **XML F040D2126** |
| **Weight (kg)** | | 0.500 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | | 1.2 bar (17.4 psi) | |
| | Max. at high setting | – | | 38 bar (551 psi) | |
| **Maximum permissible accidental pressure** | | 160 bar (2320 psi) | | | |
| **Destruction pressure** | | 240 bar (3480 psi) | | | |
| **Rated supply voltage** | | ⎓ **24 V** | | | |
| **Voltage limits** | | ⎓ 17…33 V | | | |
| **Current consumption** | | 80 mA | | | |
| **Output** | | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | – | | 200 mA | |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 30 and 50 bar (435 and 725 psi) | | | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

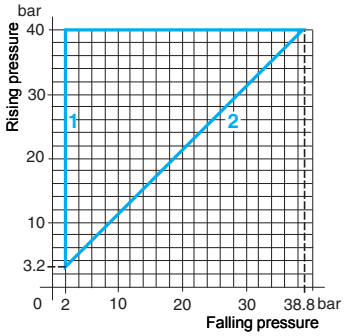
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Curves

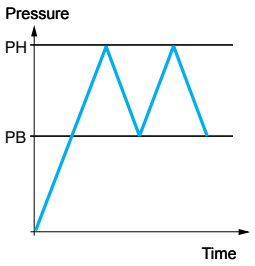
**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

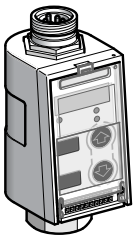
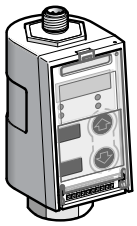



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 40 bar (580 psi)



| Type | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|
| |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | **3.2…40 bar (46.4…580 psi)** | |

## References

| | | | |
|---|---|---|---|
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F040E2045** | **XML F040D2035** |
| | 1/4" NPT female | **XML F040E2046** | **XML F040D2036** |
| **Weight (kg)** | | 0.610 | 0.500 |

## Complementary characteristics not shown under general characteristics (page 2/43)

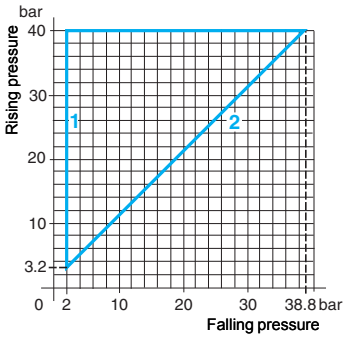
| | | | |
|---|---|---|---|
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 1.2 bar (17.4 psi) | For each stage: min. at low and high setting: 1.2 bar (17.4 psi) max. at high setting: 38 bar (551 psi) |
| | Max. at high setting | 38 bar (551 psi) | |
| **Maximum permissible accidental pressure** | | 160 bar (2320 psi) | |
| **Destruction pressure** | | 240 bar (3480 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

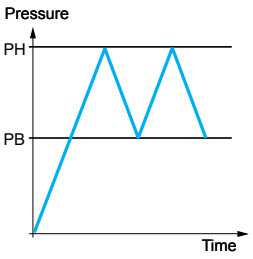
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

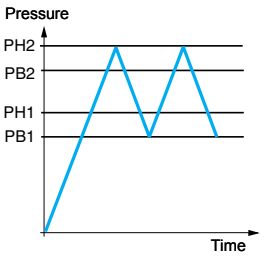



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

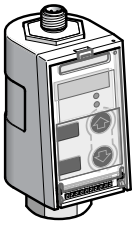
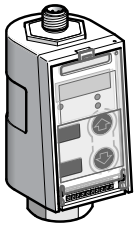



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 70 bar (1015 psi)

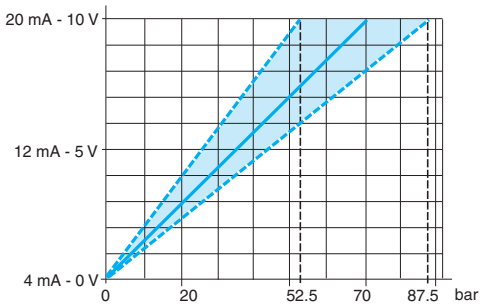


| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **5.6…70 bar (81.2…1015 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F070D2015** | **XML F070D2115** | **XML F070D2025** | **XML F070D2125** |
| | 1/4" NPT female | **XML F070D2016** | **XML F070D2116** | **XML F070D2026** | **XML F070D2126** |
| **Weight (kg)** | | 0.500 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | | 2.1 bar (30.5 psi) | |
| | Max. at high setting | – | | 66.5 bar (964.2 psi) | |
| **Maximum permissible accidental pressure** | | 280 bar (4060 psi) | | | |
| **Destruction pressure** | | 420 bar (6090 psi) | | | |
| **Rated supply voltage** | | ⎓ **24 V** | | | |
| **Voltage limits** | | ⎓ 17…33 V | | | |
| **Current consumption** | | 80 mA | | | |
| **Output** | | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | – | | 200 mA | |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 52.5 and 87.5 bar (761.3 and 1268.7 psi) | | | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

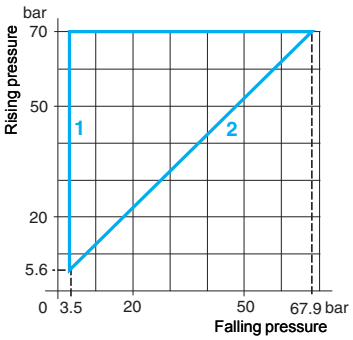
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Curves

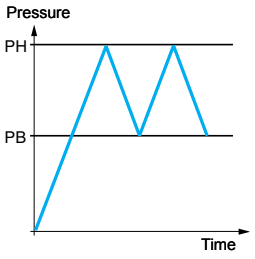
**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

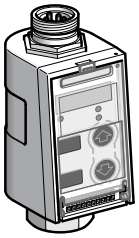
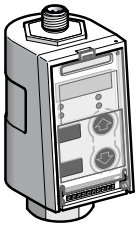



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 70 bar (1015 psi)



| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **5.6…70 bar (81.2…1015 psi)** | |

## References

| | | | |
|---|---|---|---|
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F070E2045** | **XML F070D2035** |
| | 1/4" NPT female | **XML F070E2046** | **XML F070D2036** |
| **Weight (kg)** | | 0.610 | 0.500 |

## Complementary characteristics not shown under general characteristics (page 2/43)

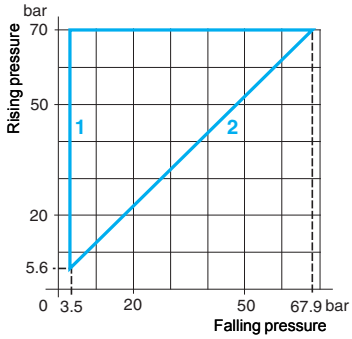
| | | | |
|---|---|---|---|
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 2.1 bar (30.5 psi) | For each stage: min. at low and high setting: 2.1 bar (30.5 psi) max. at high setting: 66.5 bar (964.2 psi) |
| | Max. at high setting | 66.5 bar (964.2 psi) | |
| **Maximum permissible accidental pressure** | | 280 bar (4060 psi) | |
| **Destruction pressure** | | 420 bar (6090 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

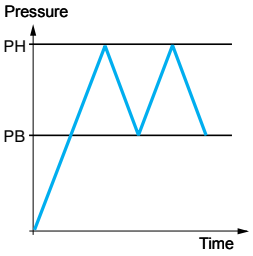
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

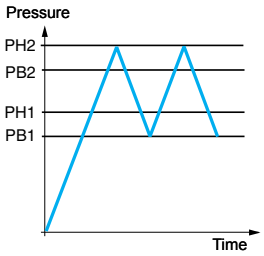



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

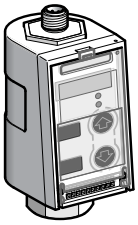
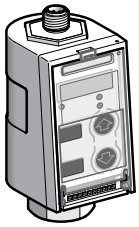



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 100 bar (1450 psi)

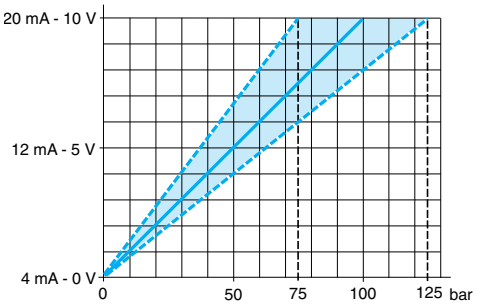


| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **8…100 bar (116…1450 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F100D2015** | **XML F100D2115** | **XML F100D2025** | **XML F100D2125** |
| | 1/4" NPT female | **XML F100D2016** | **XML F100D2116** | **XML F100D2026** | **XML F100D2126** |
| **Weight (kg)** | | 0.500 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | | 3 bar (43.5 psi) | |
| | Max. at high setting | – | | 95 bar (1377.5 psi) | |
| **Maximum permissible accidental pressure** | | 400 bar (5800 psi) | | | |
| **Destruction pressure** | | 600 bar (8700 psi) | | | |
| **Rated supply voltage** | | ⎓ **24 V** | | | |
| **Voltage limits** | | ⎓ 17…33 V | | | |
| **Current consumption** | | 80 mA | | | |
| **Output** | | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | – | | 200 mA | |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 75 and 125 bar (1087.5 and 1812.5 psi) | | | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

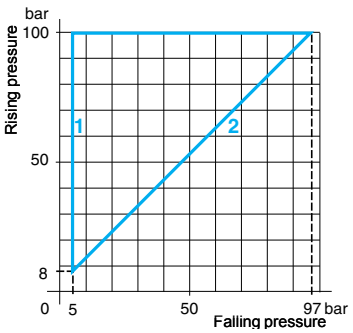
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Curves

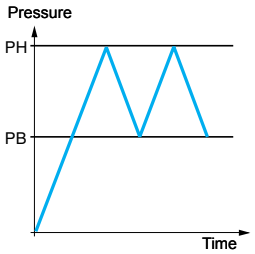
**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

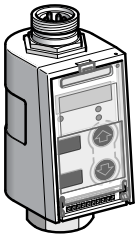



–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 100 bar (1450 psi)



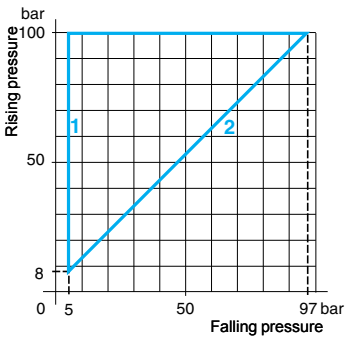
| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **8…100 bar (116…1450 psi)** | |
| **References** | | | |
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F100E2045** | **XML F100D2035** |
| | 1/4" NPT female | **XML F100E2046** | **XML F100D2036** |
| **Weight (kg)** | | 0.610 | 0.500 |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | |
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 3 bar (43.5 psi) | For each stage: min. at low and high setting: 3 bar (43.5 psi) max. at high setting: 95 bar (1377.5 psi) |
| | Max. at high setting | 95 bar (1377.5 psi) | |
| **Maximum permissible accidental pressure** | | 400 bar (5800 psi) | |
| **Destruction pressure** | | 600 bar (8700 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

## Pressure switch operating curves

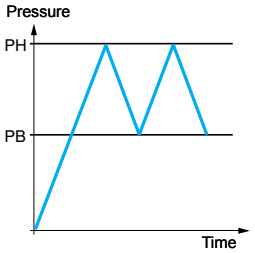
(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

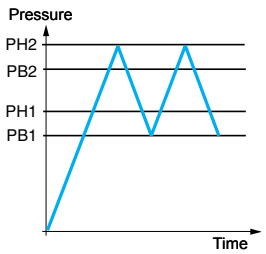



1 Maximum differential
2 Minimum differential

**Dual stage pressure switches**




–– Adjustable value

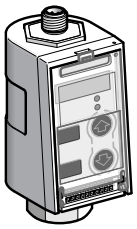
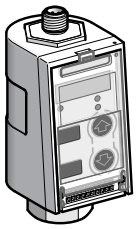



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 160 bar (2320 psi)

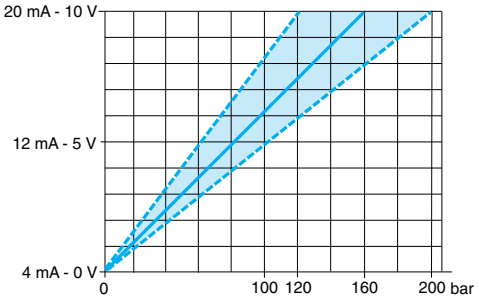


| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **12.8…160 bar (185.6…2320 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F160D2015** | **XML F160D2115** | **XML F160D2025** | **XML F160D2125** |
| | 1/4" NPT female | **XML F160D2016** | **XML F160D2116** | **XML F160D2026** | **XML F160D2126** |
| **Weight (kg)** | | 0.590 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | | 4.8 bar (69.6 psi) | |
| | Max. at high setting | – | | 152 bar (2204 psi) | |
| **Maximum permissible accidental pressure** | | 640 bar (9280 psi) | | | |
| **Destruction pressure** | | 960 bar (13 920 psi) | | | |
| **Rated supply voltage** | | ⎓ **24 V** | | | |
| **Voltage limits** | | ⎓ 17…33 V | | | |
| **Current consumption** | | 80 mA | | | |
| **Output** | | – | | Programmable, NPN or PNP and NO or NC | |
| **Time delay** | | – | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | – | | 200 mA | |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 120 and 200 bar (1740 and 2900 psi) | | | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | | | |

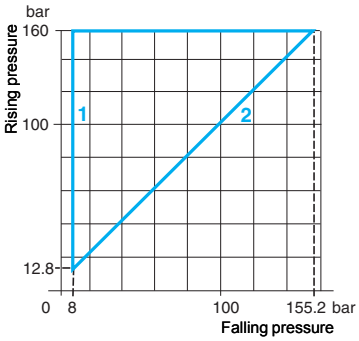
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

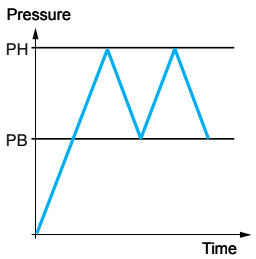
## Curves

**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

–– Adjustable value

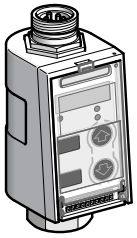
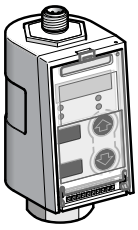
Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71



Schneider Electric

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 160 bar (2320 psi)



| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **12.8…160 bar (185.6…2320 psi)** | |

## References

| | | | |
|---|---|---|---|
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F160E2045** | **XML F160D2035** |
| | 1/4" NPT female | **XML F160E2046** | **XML F160D2036** |
| **Weight (kg)** | | 0.700 | 0.590 |

## Complementary characteristics not shown under general characteristics (page 2/43)

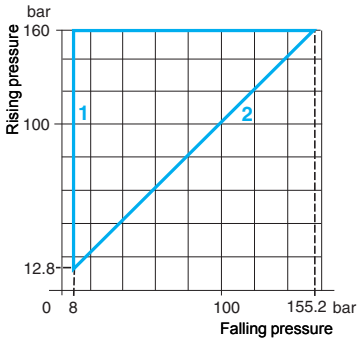
| | | | |
|---|---|---|---|
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 4.8 bar (69.6 psi) | For each stage: Min. at low and high setting: 4.8 bar (69.6 psi) Max. at high setting: 152 bar (2204 psi) |
| | Max. at high setting | 152 bar (2204 psi) | |
| **Maximum permissible accidental pressure** | | 640 bar (9280 psi) | |
| **Destruction pressure** | | 960 bar (13 920 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

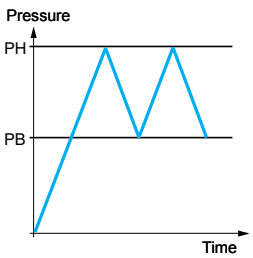
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

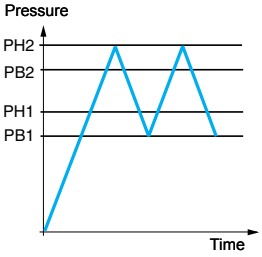



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

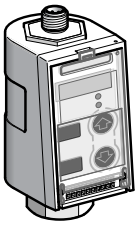
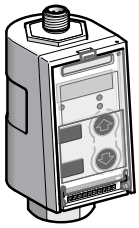



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 250 bar (3625 psi)



| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **20…250 bar (290…3625 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F250D2015** | **XML F250D2115** | **XML F250D2025** | **XML F250D2125** |
| | 1/4" NPT female | **XML F250D2016** | **XML F250D2116** | **XML F250D2026** | **XML F250D2126** |
| **Weight (kg)** | | 0.590 | | | |

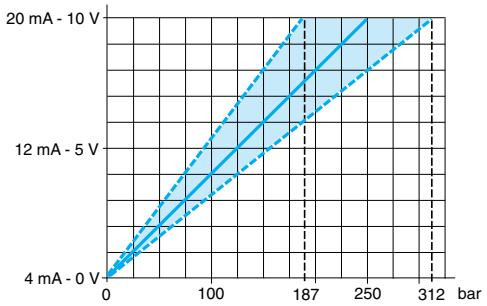
## Complementary characteristics not shown under general characteristics (page 2/43)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | 7.5 bar (108.8 psi) |
| | Max. at high setting | – | 237.5 bar (3443.7 psi) |
| **Maximum permissible accidental pressure** | | 1000 bar (14 500 psi) | |
| **Destruction pressure** | | 1500 bar (21 750 psi) | |
| **Rated supply voltage** | | ⎓ **24 V** | |
| **Voltage limits** | | ⎓ 17…33 V | |
| **Current consumption** | | 80 mA | |
| **Output** | | – | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | – | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second |
| **Switching capacity** | | – | 200 mA |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 187 and 312 bar (2711 and 4524 psi) | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | |

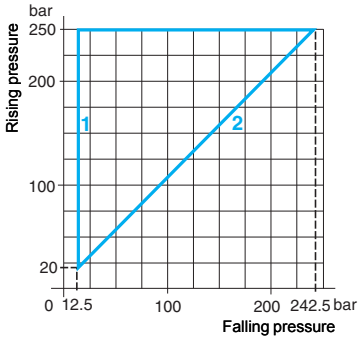
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

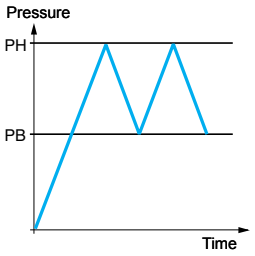
## Curves

**Analogue output curve**




**Pressure sensor operating curves**



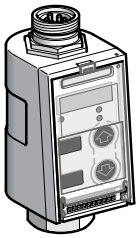
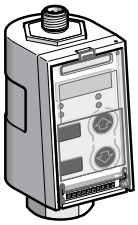

1 Maximum differential
2 Minimum differential

–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 250 bar (3625 psi)



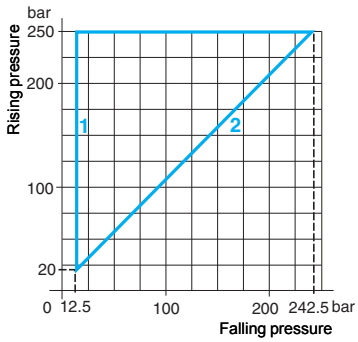
| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **20…250 bar (290…3625 psi)** | |
| **References** | | | |
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F250E2045** | **XML F250D2035** |
| | 1/4" NPT female | **XML F250E2046** | **XML F250D2036** |
| **Weight (kg)** | | 0.700 | 0.590 |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | |
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 7.5 bar (108.8 psi) | For each stage: Min. at low and high setting: 7.5 bar (108.8 psi) Max. at high setting: 237.5 bar (3443.7 psi) |
| | Max. at high setting | 237.5 bar (3443.7 psi) | |
| **Maximum permissible accidental pressure** | | 1000 bar (14 500 psi) | |
| **Destruction pressure** | | 1500 bar (21 750 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

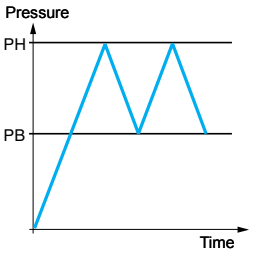
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

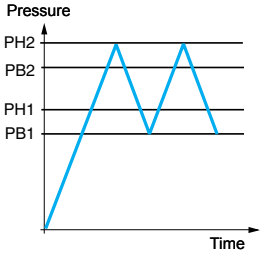



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

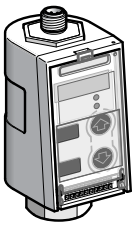
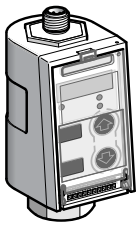



–– Adjustable value

Accessories: page 2/70 Dimensions: page 2/71 Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 400 bar (5800 psi)



| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **32…400 bar (464…5800 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F400D2015** | **XML F400D2115** | **XML F400D2025** | **XML F400D2125** |
| | 1/4" NPT female | **XML F400D2016** | **XML F400D2116** | **XML F400D2026** | **XML F400D2126** |
| **Weight (kg)** | | 0.590 | | | |

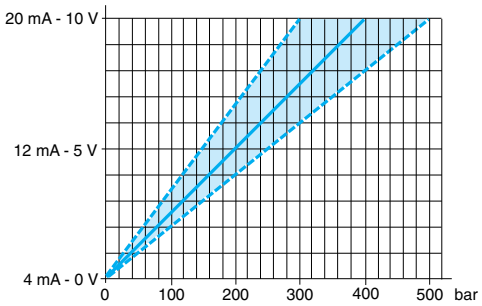
## Complementary characteristics not shown under general characteristics (page 2/43)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | 12 bar (174 psi) |
| | Max. at high setting | – | 380 bar (5510 psi) |
| **Maximum permissible accidental pressure** | | 1200 bar (17 400 psi) | |
| **Destruction pressure** | | 1800 bar (26 100 psi) | |
| **Rated supply voltage** | | ⎓ **24 V** | |
| **Voltage limits** | | ⎓ 17…33 V | |
| **Current consumption** | | 80 mA | |
| **Output** | | – | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | – | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second |
| **Switching capacity** | | – | 200 mA |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 300 and 500 bar (4350 and 7250 psi) | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | |

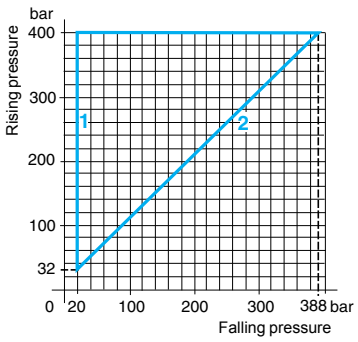
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

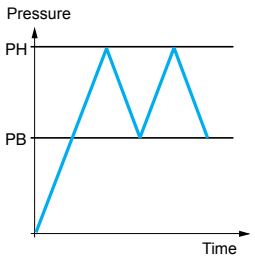
## Curves

**Analogue output curve**




**Pressure sensor operating curves**




1 Maximum differential
2 Minimum differential

–– Adjustable value

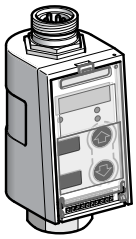
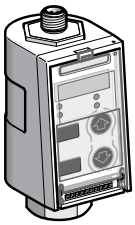
Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71



Schneider Electric

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 400 bar (5800 psi)



| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **32…400 bar (464…5800 psi)** | |

## References

| | | | |
|---|---|---|---|
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F400E2045** | **XML F400D2035** |
| | 1/4" NPT female | **XML F400E2046** | **XML F400D2036** |
| **Weight (kg)** | | 0.700 | 0.590 |

## Complementary characteristics not shown under general characteristics (page 2/43)

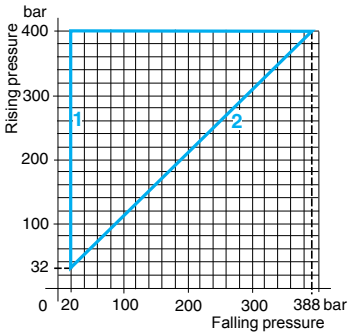
| | | | |
|---|---|---|---|
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 12 bar (174 psi) | For each stage: Min. at low and high setting: 12 bar (174 psi) Max. at high setting: 380 bar (5510 psi) |
| | Max. at high setting | 380 bar (5510 psi) | |
| **Maximum permissible accidental pressure** | | 1200 bar (17 400 psi) | |
| **Destruction pressure** | | 1800 bar (26 100 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

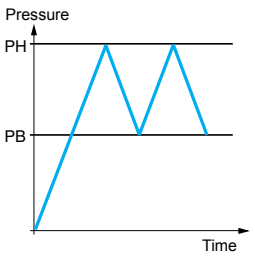
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

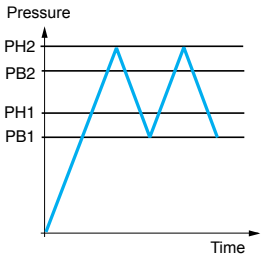



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

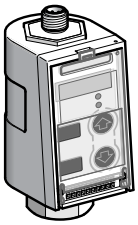



–– Adjustable value

Accessories: page 2/70 | Dimensions: page 2/71 | Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 600 bar (8700 psi)



| Type | | Pressure transmitters | | Universal sensors with adjustable differential. Solid-state and analogue outputs *(1)* | |
|---|---|---|---|---|---|
| | |  | |  | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | – | | **48…600 bar (696…8700 psi)** | |
| **Analogue output** | | 4-20 mA | 0-10 V | 4-20 mA | 0-10 V |
| **References** | | | | | |
| **Fluid connection** *(2) (3)* | G 1/4 female | **XML F600D2015** | **XML F600D2115** | **XML F600D2025** | **XML F600D2125** |
| | 1/4" NPT female | **XML F600D2016** | **XML F600D2116** | **XML F600D2026** | **XML F600D2126** |
| **Weight (kg)** | | 0.590 | | | |

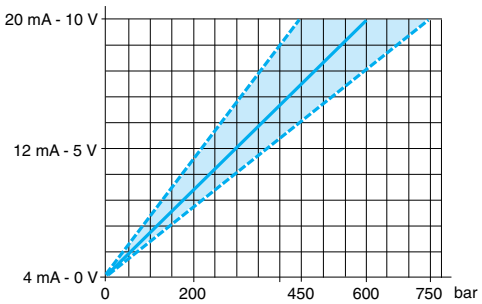
## Complementary characteristics not shown under general characteristics (page 2/43)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low and high setting | – | 18 bar (261 psi) |
| | Max. at high setting | – | 570 bar (8265 psi) |
| **Maximum permissible accidental pressure** | | 1200 bar (17 400 psi) | |
| **Destruction pressure** | | 1800 bar (26 100 psi) | |
| **Rated supply voltage** | | **⎓ 24 V** | |
| **Voltage limits** | | ⎓ 17…33 V | |
| **Current consumption** | | 80 mA | |
| **Output** | | – | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | – | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second |
| **Switching capacity** | | – | 200 mA |
| **Analogue output** | | 4…20 mA or 0…10 V, depending on model. Maximum signal level adjustable between 450 and 750 bar (6525 and 10 875 psi) | |
| **Electrical connection** | | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 | |

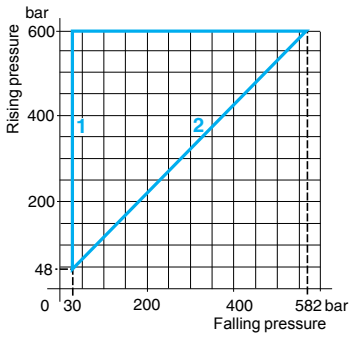
*(1) Pressure sensors with adjustable differential for regulation between 2 thresholds. Solid-state and analogue outputs.*
*(2) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(3) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

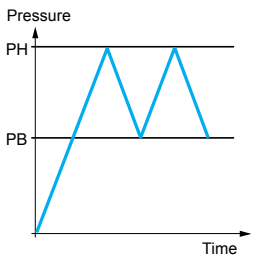
## Curves

**Analogue output curve**




**Pressure sensor operating curves**



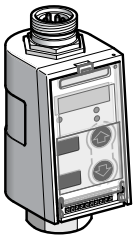
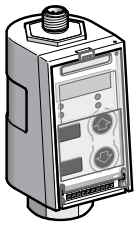

1 Maximum differential
2 Minimum differential

–– Adjustable value

Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
## Size 600 bar (8700 psi)



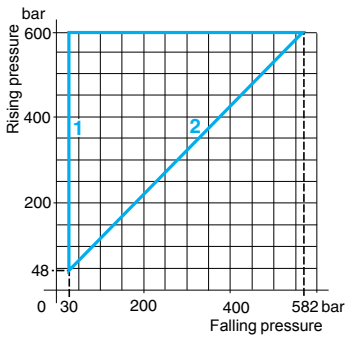
| Type | | Pressure switches with adjustable differential and relay output *(1)* | Dual stage adjustable pressure switches with solid-state outputs *(2)* |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point(s) (PH or PH1 and PH2)** (Rising pressure) | | **48…600 bar (696…8700 psi)** | |
| **References** | | | |
| **Fluid connection** *(3) (4)* | G 1/4 female | **XML F600E2045** | **XML F600D2035** |
| | 1/4" NPT female | **XML F600E2046** | **XML F600D2036** |
| **Weight (kg)** | | 0.700 | 0.590 |
| **Complementary characteristics not shown under general characteristics** (page 2/43) | | | |
| **Possible differential** (subtract from: - PH to give PB - PH1 & PH2 to give PB1 & PB2) | Min. at low and high setting | 18 bar (261 psi) | For each stage: Min. at low and high setting: 18 bar (261 psi) Max. at high setting: 570 bar (8265 psi) |
| | Max. at high setting | 570 bar (8265 psi) | |
| **Maximum permissible accidental pressure** | | 1200 bar (17 400 psi) | |
| **Destruction pressure** | | 1800 bar (26 100 psi) | |
| **Rated supply voltage** | | **~ 120 V** | **⎓ 24 V** |
| **Voltage limits** | | ~ 102…132 V | ⎓ 17…33 V |
| **Current consumption** | | 32 mA | 80 mA |
| **Output** | | Relay | Programmable, NPN or PNP and NO or NC |
| **Time delay** | | Adjustable time delay on trip and on reset from 0 to 50 s, in steps of 1 second | |
| **Switching capacity** | | 2.5 A, AC-15, C300 (120 V - 1.5 A) | 200 mA |
| **Electrical connection** | | SAE 7/8-16UN, 5-pin male connector. For suitable female pre-wired connectors, see page 2/70. | M12, 4-pin male connector. For suitable female connectors, including pre-wired versions, see page 2/70 |

*(1) Pressure switches with adjustable differential for regulation between 2 thresholds. Relay output.*
*(2) Pressure switches with 2 adjustable stages and adjustable differential for each threshold. Solid-state outputs.*
*(3) Fluids controlled: hydraulic oils, fresh water, sea water, air, corrosive fluids, from - 15 to + 80°C. Component materials of units in contact with the fluid, see page 2/43.*
*(4) For SAE 7/16-20UNF and other threads, please consult our Customer Care Centre.*

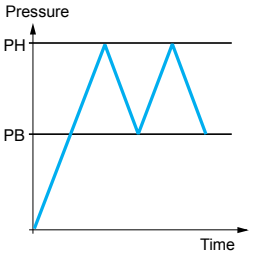
## Pressure switch operating curves

(Curve for each stage for dual stage pressure switches)

**Pressure switches with relay output**

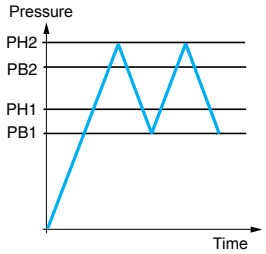



1 Maximum differential
2 Minimum differential




–– Adjustable value

**Dual stage pressure switches**

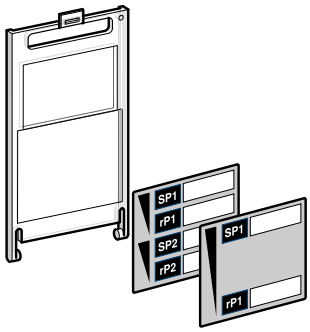



–– Adjustable value

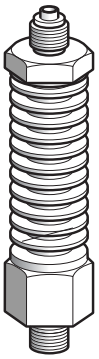
Accessories: page 2/70
Dimensions: page 2/71
Schemes: page 2/71

# Electronic pressure sensors
## OsiSense XM, type XML F
### Accessories and replacement parts



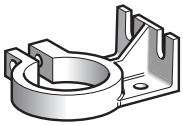



XML ZL007

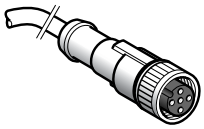


XML ZL009

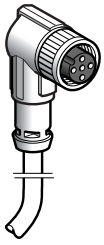
XML ZL010



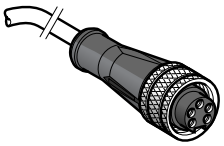
XML ZL008



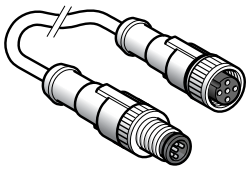
XZ CP1141L●



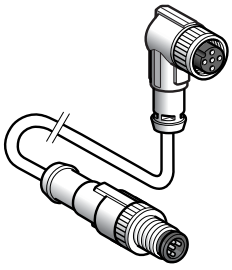
XZ CP1241L●



XZ CP1764L●



XZ CR1511041C●



XZ CR1512041C●

## References

### Replacement parts

| Description | | Reference | Weight kg |
|---|---|---|---|
| **Transparent cover with legends** | | **XML ZL007** | 0.020 |
| **Sealing gasket** | All sizes (XML F) | **XML ZL010** | 0.015 |

### Accessories

| Description | | Length of cable | Reference | Weight kg |
|---|---|---|---|---|
| **Fixing bracket** | | – | **XML ZL008** | 0.037 |
| **Cooler for versions with G 1/4 A (male) fluid connection** *(1)* Usage temperature: 150°C for the fluid, 50°C for the ambient air | | – | **XML ZL009** | 0.370 |
| **Pre-wired M12, straight, female connectors** | | 2 m | **XZ CP1141L2** | 0.115 |
| | | 5 m | **XZ CP1141L5** | 0.270 |
| | | 10 m | **XZ CP1141L10** | 0.520 |
| **Pre-wired M12, elbowed, female connectors** | | 2 m | **XZ CP1241L2** | 0.115 |
| | | 5 m | **XZ CP1241L5** | 0.270 |
| | | 10 m | **XZ CP1241L10** | 0.520 |
| **Pre-wired 7/8"-16UN, straight, female connectors** | | 2 m | **XZ CP1764L2** | 0.185 |
| | | 5 m | **XZ CP1764L5** | 0.460 |
| | | 10 m | **XZ CP1764L10** | 0.900 |
| **M12 - M12 jumper cables** with straight male connector, for splitter box | Straight female connector | 1 m | **XZ CR1511041C1** | 0.065 |
| | | 2 m | **XZ CR1511041C2** | 0.095 |
| | Elbowed female connector | 1 m | **XZ CR1512041C1** | 0.065 |
| | | 2 m | **XZ CR1512041C2** | 0.095 |

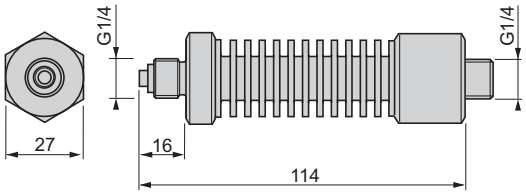
*(1) Available with other fluid connections (1/4" NPT AND SAE 7/16-20 UNF. Please consult our Customer Care Centre.*

# Electronic pressure sensors
## OsiSense XM, type XML F
### Accessories and replacement parts

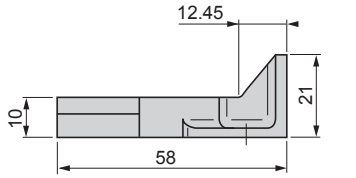


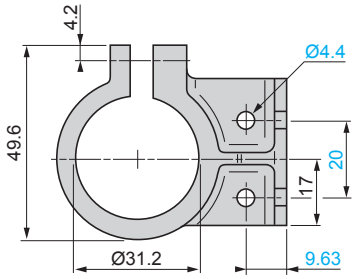
## Dimensions

### XML ZL009

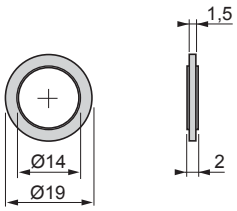



### XML ZL008

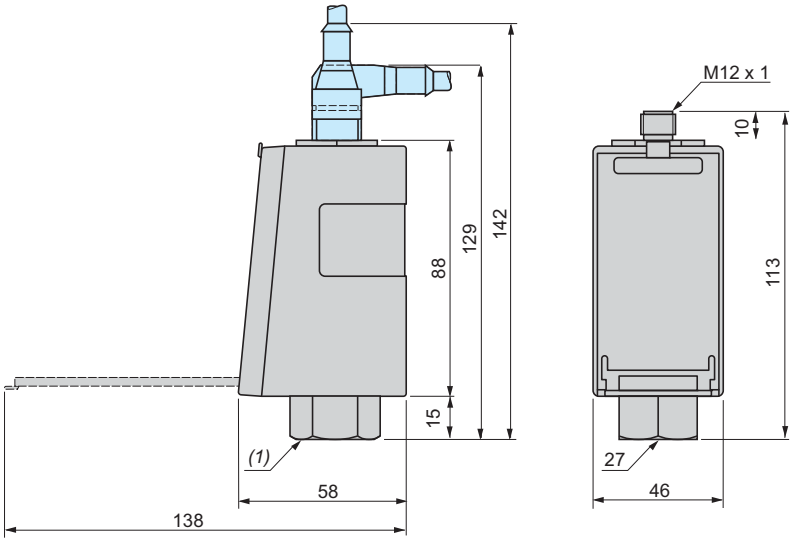



### XML ZL010

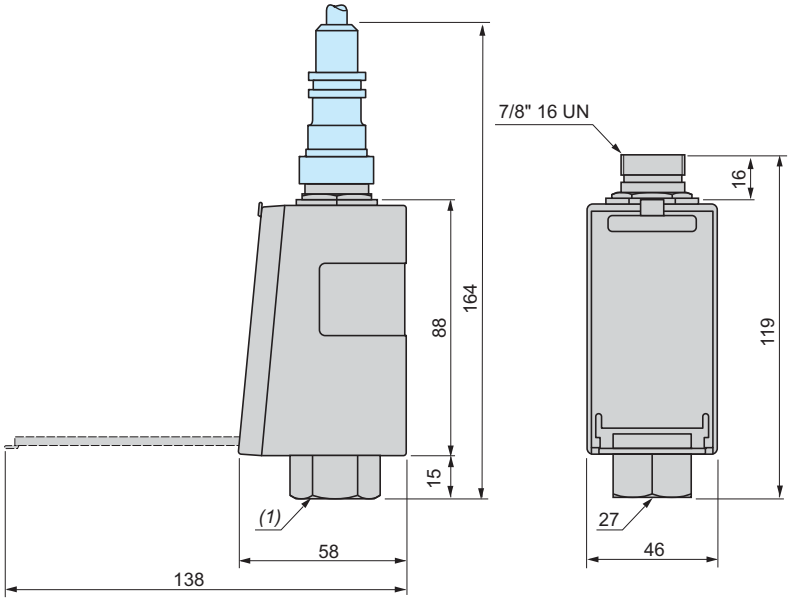



### XML F●●●D2●●●




*(1) Female fluid entry*
*XML F●●●D2●●5: G 1/4 A*
*XML F●●●D2●●6: 1/4" NPT*

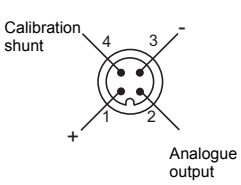
### XML F●●●E2●●●



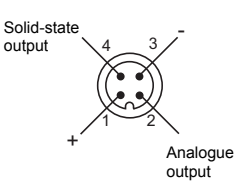

*(1) Female fluid entry*
*XML F●●●E2●●5: G 1/4 A*
*XML F●●●E2●●6: 1/4" NPT*

## Connections (pressure sensor connector pin view)

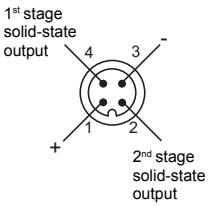
### XML F●●●D201●, F●●●D211●



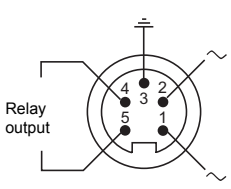

### XML F●●●D202●, F●●●D212●




### XML F●●●D203●




### XML F●●●E204●



# Electronic pressure sensors
## OsiSense XM
## For control circuits



## Functions

### Pressure transmitters

The function of pressure transmitters is the control and measurement of pressure or vacuum levels in hydraulic or pneumatic systems.
They transform the pressure into an electrical signal which is proportional to the pressure measured.
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

The function of electronic pressure and vacuum switches is the control or regulation of pressure or vacuum levels in hydraulic or pneumatic systems.
They transform the pressure change into a digital output signal when the preset pressure or vacuum points are reached. The very wide adjustment range for the setting points characterise these electronic switches.
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.

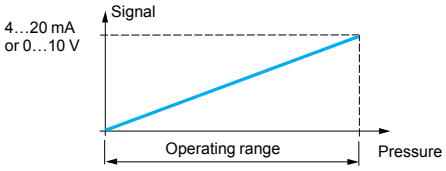
### Universal sensors

Universal sensors are electronic pressure and vacuum switches which include an analogue output, identical to that of the pressure transmitters.

## Operating principle

### Pressure transmitters

The electrical signal from the pressure transmitter (signal proportional to the pressure being monitored) is amplified, calibrated and output as a standard 4 to 20 mA or 0 to 10 V (depending on model) analogue signal.

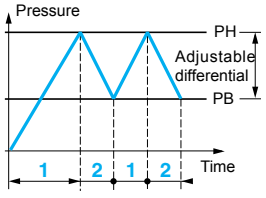



### Pressure and vacuum switches

Designed for regulation between 2 thresholds (adjustable differential), these switches have both a high point setting (PH) and a low point setting (PB). Both of these points can be independently adjusted.
The difference (differential) between the two setting points can be little or considerable, thus enabling small or large differentials to be set.
Being electronic, the switches have no mechanical moving parts.

### Operating principle with solid-state NC outputs

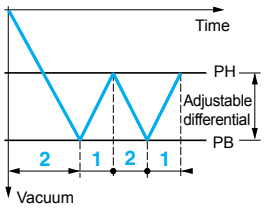
**Pressure switches with digital output**




–– Adjustable value
PH = high point
PB = low point

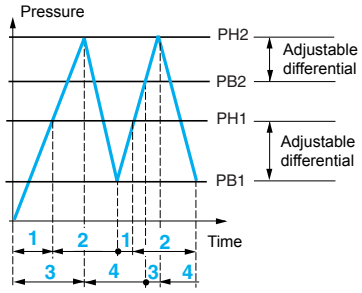
1 Output on
2 Output off

**Vacuum switches with digital output**




1 Output on
2 Output off

**Dual stage pressure switches**




–– Adjustable value
PH1 = high point 1st stage
PB1 = low point 1st stage
PH2 = high point 2nd stage
PB2 = low point 2nd stage
1 Output 1st stage on
2 Output 1st stage off
3 Output 2nd stage on
4 Output 2nd stage off

# Electronic pressure sensors
OsiSense XM
For control circuits



## Terminology

### Measuring range

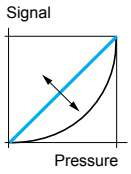
The measuring range (MR) of a pressure sensor corresponds to the difference between the upper and lower values measured by the load cell. It is comprised between 0 bar and the pressure corresponding to the size of the sensor.

### Operating range

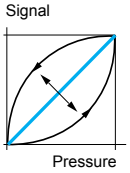
**The operating range of a pressure transmitter** corresponds to its measuring range. Within this range, its analogue output signal varies between 4 and 20 mA or 0 and 10 V and is proportional to the measured pressure.
**The operating range of a pressure or vacuum switch** is the difference between the minimum low point (PB) and the maximum high point (PH) setting values.

### Precision

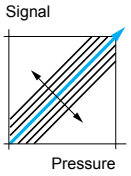
This comprises linearity, hysteresis, repeat accuracy and setting tolerances.
It is expressed as a % of the measuring range (MR) of the load cell (% MR).



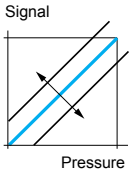

**The linearity** is the maximum deviation between the real transmitted curve and the ideal curve.

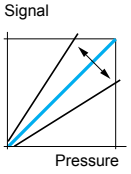



**The hysteresis** is the maximum deviation between the rising pressure curve and the falling pressure curve.




**The repeat accuracy** is the maximum drift encountered at varying pressures under given conditions.

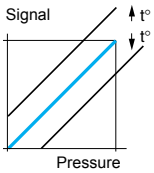


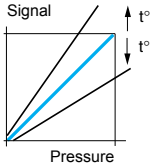

**The setting tolerances** are the manufacturer's tolerances regarding the zero point and sensitivity (gradient of output signal curve from the pressure transmitter).

### Temperature drift

The precision of a pressure sensor is always susceptible to variation due to the operating temperature.




**Zero point drift**
This is proportional to the temperature and is expressed as % MR/°C.




**Sensitivity drift**
This is proportional to the temperature and is expressed as % MR/°C.

# Electronic pressure sensors
OsiSense XM
For control circuits



## Terminology (continued)

**Switching point on rising pressure (PH)**

The upper pressure setting at which the output of the electronic pressure or vacuum switch changes state on rising pressure.

**Switching point on falling pressure (PB)**

The lower pressure setting at which the output of the electronic pressure or vacuum switch changes state on falling pressure.

**Differential**

The difference between the switching point on rising pressure (PH) and the switching point on falling pressure (PB). The low point can be set at the values indicated on the operating curves shown on the product pages.

**Repeat accuracy**

The variation of the operating point of the pressure or vacuum switch between several successive operations.

**Size**

**Pressure transmitters and pressure switches**
This is the maximum value of the operating range.
**Vacuum transmitters and vacuum switches**
This is the minimum value of the operating range.

**Maximum permissible accidental pressure**

The maximum pressure (excluding pressure surges) that the sensor can occasionally withstand without permanent damage.

**Destruction pressure**

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

## Load resistance of pressure transmitters

The supply voltage and load resistance of a pressure transmitter must be selected according to the formula:

$$R_{load} = \frac{U_{supply} - U_{supply\ min.}}{0.02\ A}$$ ($U_{supply\ min.}$ = 11 V for XML E and 17 V for XML F)

# Electronic pressure sensors
OsiSense XM
For control circuits



## Features of pressure sensors XML F

Pressure sensors type XML F (see page 2/42) feature numerous configuration possibilities with regards to the display (response time, choice of bar or psi units of measurement), analogue output signal operation (maximum signal output adjustable between 75% and 125% of the units size), solid-state output operation (PNP or NPN, NO or NC, time delay on opening or on closing, response time) and status signalling (see below).
A diagnostic function is incorporated which enables verification, at any time, of the sensors correct operation (see below) and also, to provide information regarding pressure peak values.

### Self-test function (calibration shunt)

All pressure sensors XML F incorporate a diagnostic function which can be used, at any time, to check the correct operation of the unit. It comprises an internal system which enables automatic monitoring of all the sensor circuits, including the ceramic pressure measuring load cell.
For all models, this function is manually activated and the result of the test is indicated on the display (DONE or ERR).
For pressure transmitters, this function can also be remotely activated via a digital input connected to a PLC, thus enabling automatic verification without the need of intervention by an operator. In this instance, the self-test also generates an analogue output signal which is equivalent to 50% of the sensors size (12 mA or 5 V) which, in turn, can be verified by the PLC.
The unit can be considered as defective if the difference between the signal transmitted and the standard theoretical value is too great.

### Operational status signalling

Pressure and vacuum switches XML F feature status LED indicators for the digital outputs. Indication can be configured for 2 modes:
- "hysteresis" mode: indicator illuminated when output activated (output off for NC configuration or output on for NO configuration).
- "window" mode: indicator illuminated when the pressure being measured is between the high and low set point values.

## Selection of switch size

**Size selection is made according to the maximum pressure of the system to be controlled.**

### Adherence to pressure

Select a size whereby the nominal pressure is higher than the maximum pressure of the system to be controlled.

### Precision, repeat accuracy

The precision and repeat accuracy are expressed as a percentage of the measuring range and better detection is achieved when the size of the sensor is close to that of the maximum pressure of the system to be controlled. As a general rule, avoid working towards the bottom limit of the measuring range.

### Minimum differential of a pressure or vacuum switch

The minimum differential for each switch size is 2% for XML E and 3% for XML F of its operating range.

### Selection example for a pressure switch

Maximum pressure of system = 11 bar
PH = 7 bar
PB = 6 bar
2 alternative choices:
XML ●010●●●●● (10 bar) or
XML ●025●●●●● (25 bar)
Advantages:
XML ●010●●●●●: maximum repeat accuracy and precision
XML ●025●●●●●: withstand to overpressure.

# Electromechanical pressure and vacuum switches

## OsiSense XM

For control circuits, type XML



## Presentation

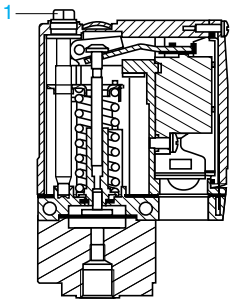
Pressure and vacuum switches type **XML** are switches for control circuits.
They are used to control the pressure of hydraulic oils, fresh water, sea water, air, steam, corrosive fluids or viscous products, up to 500 bar.

**XML A** pressure and vacuum switches have a fixed differential and are for detection of a single threshold. They incorporate a 1 CO single-pole contact.
**XML B** pressure and vacuum switches have an adjustable differential and are for regulation between 2 thresholds. They incorporate a 1 CO single-pole contact.
**XML C** pressure and vacuum switches have an adjustable differential and are for regulation between 2 thresholds. They incorporate 2 CO single-pole contacts.
**XML D** pressure and vacuum switches are dual stage switches, each stage with a fixed differential, and are for detection at each threshold. They incorporate 2 CO single-pole contacts (one per stage).

## Setting

When setting pressure and vacuum switches XML, adjust the switching point on rising pressure (PH) first and then the switching point on falling pressure (PB).

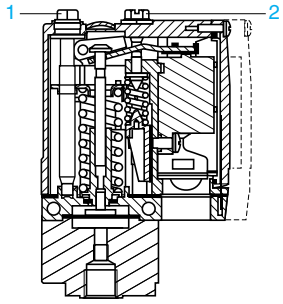
### Pressure and vacuum switches with fixed differential, type XML A




**Switching point on rising pressure**
The switching point on rising pressure (PH) is set by adjusting the red screw 1.

**Switching point on falling pressure**
The switching point on falling pressure (PB) is not adjustable.
The difference between the tripping and resetting points of the contact is the natural differential of the switch (contact differential, friction, etc.).

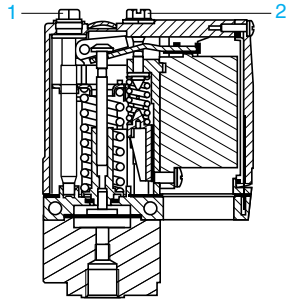
### Pressure and vacuum switches with adjustable differential, types XML B and XML C




**Switching point on rising pressure**
The switching point on rising pressure (PH) is set by adjusting the red screw 1.

**Switching point on falling pressure**
The switching point on falling pressure (PB) is set by adjusting the green screw 2.

### Dual stage pressure and vacuum switches with fixed differential for each threshold, type XML D




**Switching point on rising pressure of stage 1 and stage 2**
The first stage switching point on rising pressure (PH1) is set by adjusting the red screw 1.
The second stage switching point on rising pressure (PH2) is set by adjusting the blue screw 2.

**Switching point on falling pressure**
The switching points on falling pressure (PB1 and PB2) are not adjustable.
The difference between the tripping and resetting points of each contact is the natural differential of the switch (contact differential, friction, etc.).

# Electromechanical pressure and vacuum switches

## OsiSense XM

For control circuits, type XML



## Environment characteristics

| | | |
|---|---|---|
| **Conformity to standards** | | CE, IEC/EN 60947-5-1, UL 508, CSA C22-2 n° 14 |
| **Product certifications** | | UL, CSA, CCC, BV, LROS, RINA, GL, DNV, VIT-SEPRO |
| **Protective treatment** | | Standard version "TC". Special version "TH" |
| **Ambient air temperature** | **°C** | For operation: - 25...+ 70. For storage: - 40...+ 70 |
| **Fluids or products controlled** | | Hydraulic oils, air, fresh water, sea water (0…+ 160°C), depending on model<br>Steam, corrosive fluids, viscous products (0…+ 160°C), depending on model |
| **Materials** | | Case: zinc alloy<br>Component materials in contact with fluid: see pages *2/136 and 2/137* |
| **Operating position** | | All positions |
| **Vibration resistance** | | 4 gn (30...500 Hz) conforming to IEC 68-2-6 except **XML ●L35●●●●●**,<br>**XML ●001●●●●●** and **XML BM03●●●●●**: 2 gn |
| **Shock resistance** | | 50 gn conforming to IEC 68-2-27 except **XML ●L35●●●●●**, **XML ●001●●●●●** and **XML BM03●●●●●**: 30 gn |
| **Electric shock protection** | | Class I conforming to IEC 1140, IEC 536 and NF C 20-030 |
| **Degree of protection** | | Screw terminal models: IP 66 conforming to IEC/EN 60529<br>Connector models: IP 65 conforming to IEC/EN 60529 |
| **Operating rate** | **Op. cycles/ min** | Piston version switches: ≤ 60 (for temperature > 0°C)<br>Diaphragm version switches: ≤ 120 (for temperature > 0°C) |
| **Repeat accuracy** | | < 2% |
| **Fluid connection** | | G 1/4 (BSP female) conforming to NF E 03-005, ISO 228 or 1/4" NPTF (consult our Customer Care Centre) |
| **Electrical connection** | | Screw terminal models: ISO M20 x 1.5 tapped entry<br>For an entry tapped for n° 13 (DIN Pg 13.5) cable gland, replace the last number of the reference by 1 (example: **XML A010A2S12** becomes **XML A010A2S11**)<br>For an entry tapped 1/2" NPT, please consult our Customer Care Centre<br>Connector models (either type DIN 43650 A or M12): please consult our Customer Care Centre |

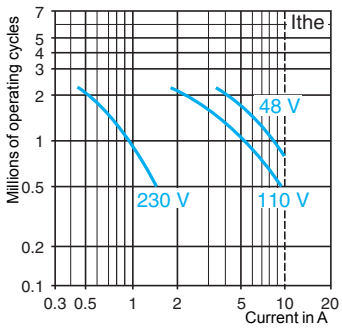
## Contact block characteristics

| | | |
|---|---|---|
| **Rated operational characteristics** | | ∿ AC-15; B300 (Ue = 240 V, Ie = 1.5 A - Ue = 120 V, Ie = 3 A)<br>⎓ DC-13; R300 (Ue = 250 V, Ie = 0.1 A) conforming to IEC 947-5-1 Appendix A, EN 60 947-5-1 |
| **Rated insulation voltage** | | Ui = 500 V conforming to IEC/EN 60947-1<br>Ui = 300 V conforming to UL 508, CSA C22-2 n° 14 |
| **Rated impulse withstand voltage** | | U imp = 6 kV conforming to IEC/EN 60947-1 |
| **Type of contacts** | | Silver tipped contacts<br>**XML A** and **XML B**: 1 CO single-pole contact (4 terminal), snap action<br>**XML C**: 2 CO single-pole contacts (8 terminal), simultaneous, snap action<br>**XML D**: 2 CO single-pole contacts (8 terminal), staggered, snap action |
| **Resistance across terminals** | **mΩ** | < 25 conforming to NF C 93-050 method A or IEC 255-7 category 3 |
| **Terminal referencing** | | Conforming to CENELEC EN 50013 |
| **Short-circuit protection** | | 10 A cartridge fuse type gG (gl) |
| **Connection** | | Screw clamp terminals.<br>Minimum clamping capacity: 1 x 0.2 mm², max: 2 x 2.5 mm² |

**Electrical durability**
Conforming to IEC/EN 60947-5-1 Appendix C
Utilisation categories AC-15 and DC-13

Operating rate: 3600 operating cycles/hour
Load factor: 0.5

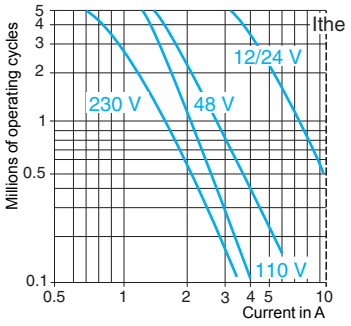
**XML A** and **XML B**
**AC supply** ∿ 50/60 Hz
Inductive circuit, Ithe = 10 A




**DC supply** ⎓
Power broken in W
for 1 million operating cycles

| Voltage | V | 24 | 48 | 120 |
|---|---|---|---|---|
| | W | 31 | 29 | 26 |

**XML C** and **XML D**
**AC supply** ∿ 50/60 Hz
Inductive circuit, Ithe = 10 A




**DC supply** ⎓
Power broken in W
for 5 million operating cycles

| Voltage | V | 24 | 48 | 120 |
|---|---|---|---|---|
| | W | 10 | 7 | 4 |

# Electromechanical vacuum switches

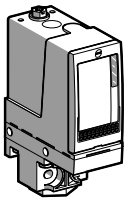
## OsiSense XM, type XML

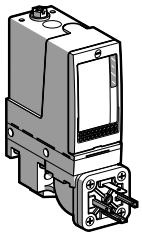
Size - 1 bar (- 14.5 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Vacuum switches type XML A**

**With setting scale**

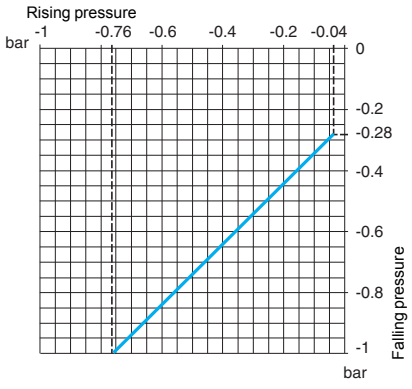


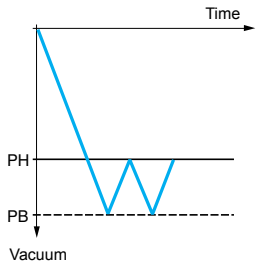


| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PB)** (Falling pressure) | | **- 0.28…- 1 bar (- 4.06…- 14.5 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML AM01V2S12** | **XML AM01V2C11** |
| | Hydraulic oils, fresh water, sea water, air, corrosive fluids, up to + 160°C | **XML AM01T2S12** | **XML AM01T2C11** |
| **Weight (kg)** | | 0.685 | 0.715 |
| **Complementary characteristics not shown under general characteristics** (page 2/77) | | | |
| **Natural differential** (add to PB to give PH) | At low setting *(3)* | 0.24 bar (3.48 psi) | |
| | At high setting *(3)* | 0.24 bar (3.48 psi) | |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) | |
| | Accidental | 9 bar (130.5 psi) | |
| **Destruction pressure** | | 18 bar (261 psi) | |
| **Mechanical life** | | 3 x $10^6$ operating cycles | |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 | |
| **Vacuum switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML AM01V2S12** becomes **XML AM01V2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.05 bar (± 0.72 psi).*

## Operating curves



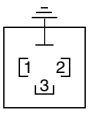

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Vacuum switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Vacuum switches with alternative tapped cable entries: NPT etc.
Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

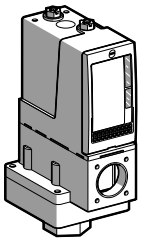
# Electromechanical vacuum switches

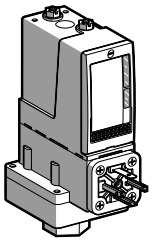
## OsiSense XM, type XML

Size - 1 bar (- 14.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Vacuum switches type XML B** | **With setting scale**





| | | |
|---|---|---|
| **Adjustable range of switching point (PB)** (Falling pressure) | **- 0.14…- 1 bar (- 2.03…- 14.5 psi)** | |
| **Electrical connection** | Terminals | DIN connector |

## References *(1)*

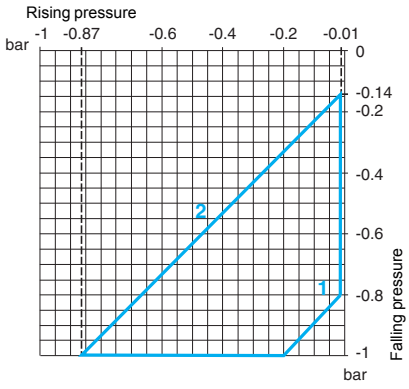
| | | | |
|---|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML BM02V2S12** | **XML BM02V2C11** |
| | Hydraulic oils, fresh water, sea water, air, corrosive fluids, up to + 160°C | **XML BM02T2S12** | **XML BM02T2C11** |
| **Weight (kg)** | | 1.015 | 1.030 |

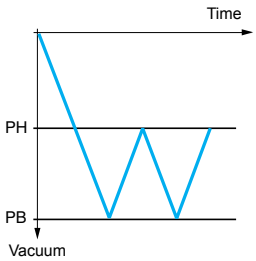
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (add to PB to give PH) | Min. at low setting *(3)* | 0.13 bar (1.88 psi) |
| | Min. at high setting *(3)* | 0.13 bar (1.88 psi) |
| | Max. at high setting | 0.8 bar (11.6 psi) |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) |
| | Accidental | 9 bar (130.5 psi) |
| **Destruction pressure** | | 18 bar (261 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Vacuum switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML BM02V2S12** becomes **XML BM02V2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.02 bar (± 0.29 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

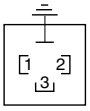
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Vacuum switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Vacuum switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

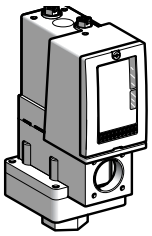
# Electromechanical vacuum switches

## OsiSense XM, type XML

Size - 1 bar (- 14.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Vacuum switches type XML C** | **With setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of switching point (PB)** (Falling pressure) | | **- 0.14…- 1 bar (- 2.03…- 14.5 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

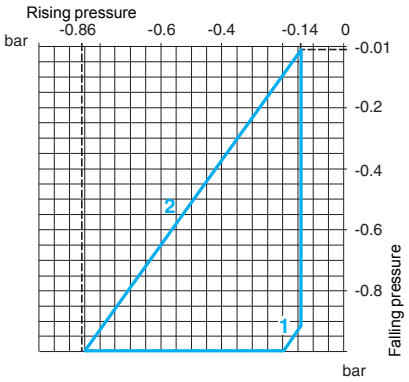
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML CM02V2S12** |
| | Hydraulic oils, fresh water, sea water, air, corrosive fluids, up to + 160°C | **XML CM02T2S12** |
| **Weight (kg)** | | 1.015 |

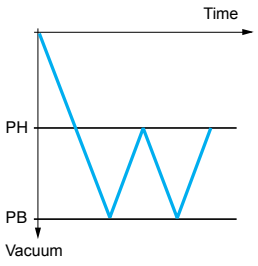
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (add to PB to give PH) | Min. at low setting *(3)* | 0.13 bar (1.89 psi) |
| | Min. at high setting *(3)* | 0.14 bar (2.03 psi) |
| | Max. at high setting | 0.8 bar (11.6 psi) |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) |
| | Accidental | 9 bar (130.5 psi) |
| **Destruction pressure** | | 18 bar (261 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Vacuum switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML CM02V2S12** becomes **XML CM02V2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.02 bar (± 0.29 psi).*

## Operating curves



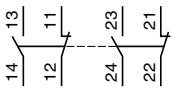




**1** Maximum differential
**2** Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Vacuum switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

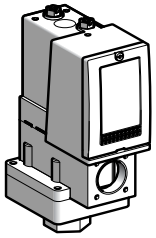
# Electromechanical vacuum switches

## OsiSense XM, type XML

Size - 1 bar (- 14.5 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Vacuum switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Falling pressure) | 2nd stage switching point (PB2) | **- 0.12…- 1 bar (- 1.74…- 14.5 psi)** |
| | 1st stage switching point (PB1) | **- 0.10…- 0.98 bar (- 1.45…- 14.21 psi)** |
| **Spread between 2 stages (PB2 - PB1)** | | **0.02…0.88 bar (0.29…12.76 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML DM02V1S12** |
| | Hydraulic oils, fresh water, sea water, air, corrosive fluids, up to + 160°C | **XML DM02T1S12** |
| **Weight (kg)** | | 1.015 |

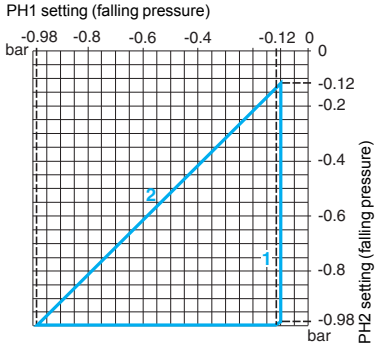
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (add to PB1/PB2 to give PH1/PH2) | At low setting *(3)* | 0.1 bar (1.45 psi) |
| | At high setting *(4)* | 0.1 bar (1.45 psi) |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) |
| | Accidental | 9 bar (130.5 psi) |
| **Destruction pressure** | | 18 bar (261 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Vacuum switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML DM02V1S12** becomes **XML DM02V1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.035 bar (± 0.51 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.02 bar (± 0.29 psi).*

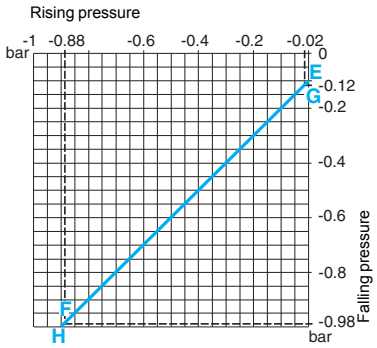
## Operating curves

**High setting tripping points of contacts 1 and 2**

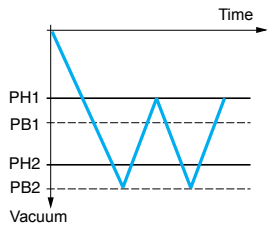



1 Maximum differential
2 Minimum differential

**Natural differential of contacts 1 and 2**



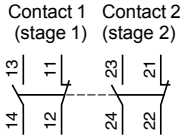

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**




| | |
|---|---|
| **Other versions** | Vacuum switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

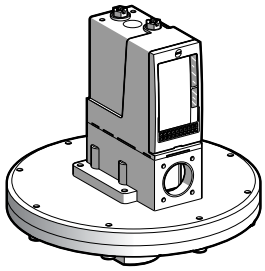
# Electromechanical vacuum switches

## OsiSense XM, type XML

Size - 200 mbar (- 2.9 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Vacuum switches type XML B** | **With setting scale**



| | |
|---|---|
| **Adjustable range of switching point (PB)** (Falling pressure) | **- 20…- 200 mbar (- 0.29…- 2.9 psi)** |
| **Electrical connection** | Terminals |

## References *(1)*

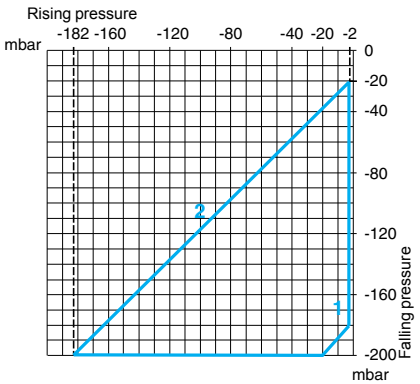
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML BM03R2S12** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML BM03S2S12** |
| **Weight (kg)** | | 3.310 |

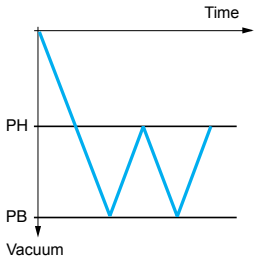
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (add to PB to give PH) | Min. at low setting *(3)* | 18 mbar (0.26 psi) |
| | Min. at high setting *(3)* | 18 mbar (0.26 psi) |
| | Max. at high setting | 180 mbar (2.6 psi) |
| **Maximum permissible pressure** | Per cycle | 1 bar (14.5 psi) |
| | Accidental | 2 bar (29 psi) |
| **Destruction pressure** | | 3.5 bar (50.75 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Vacuum switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML BM03R2S12** becomes **XML BM03R2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 2 mbar (± 0.29 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**


**Other versions**

Vacuum switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

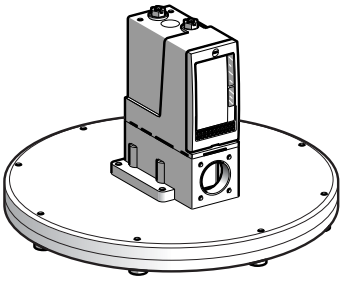
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 50 mbar (0.72 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML B** — **With setting scale**



| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **2.6…50 mbar (0.038…0.72 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

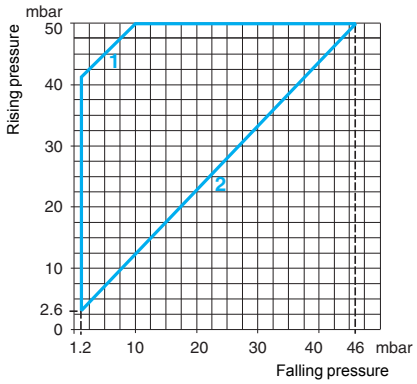
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML BL05R2S12** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML BL05S2S12** |
| **Weight (kg)** | | 2.420 |

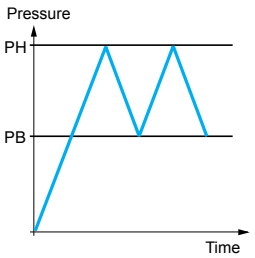
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 1.4 mbar (0.02 psi) |
| | Min. at high setting *(4)* | 4 mbar (0.06 psi) |
| | Max. at high setting | 40 mbar (0.58 psi) |
| **Maximum permissible pressure** | Per cycle | 62.5 mbar (0.90 psi) |
| | Accidental | 112.5 mbar (1.63 psi) |
| **Destruction pressure** | | 225 mbar (3.26 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML BL05R2S12** becomes **XML BL05R2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: - 0.8 mbar, + 1.1 mbar (- 0.01 psi, + 0.02 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 1.4 mbar, (+ 0.02 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**


**Other versions**

Pressure switches with DIN 43650 A connector or with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

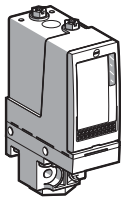
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

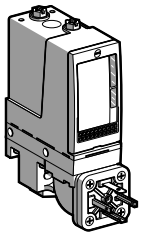
# Electromechanical vacu-pressure switches

OsiSense XM, type XML. Size 5 bar (72.5 psi).
Adjustable differential, for regulation between 2 thresholds.
Switches with 1 CO single-pole contact.
Fluid connection G 1/4 (female)



| **Vacu-pressure switches type XML B** | **With setting scale** |
|---|---|





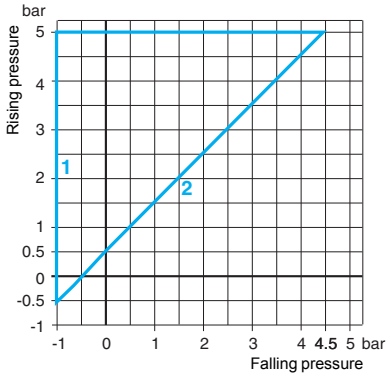
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **- 0.5…5 bar (- 7.25…72.5 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML BM05A2S12** | **XML BM05A2C11** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML BM05B2S12** | **XML BM05B2C11** |
| | Corrosive fluids, up to + 160°C | **XML BM05C2S12** | **XML BM05C2C11** |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML BM05P2S12** | **XML BM05P2C11** |
| **Weight (kg)** | | 0.685 | 0.715 |

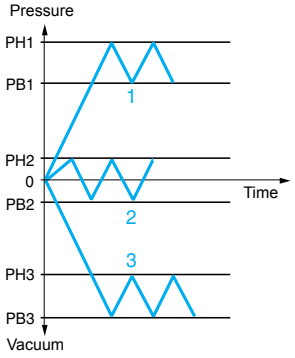
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.5 bar (7.25 psi) |
| | Min. at high setting *(3)* | 0.5 bar (7.25 psi) |
| | Max. at high setting | 6 bar (87 psi) |
| **Maximum permissible pressure** | Per cycle | 6.25 bar (90.62 psi) |
| | Accidental | 11.25 bar (163.12 psi) |
| **Destruction pressure** | | 23 bar (333.5 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Vacu-pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML BM05A2S12** becomes **XML BM05A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.05 bar (± 0.72 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

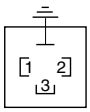
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Vacu-pressure switch pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Vacu-pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

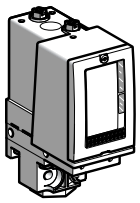
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electro-mechanical vacu-pressure switches

OsiSense XM, type XML. Size 5 bar (72.5 psi).
Adjustable differential, for regulation between 2 thresholds.
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **- 0.55…5 bar (- 7.97…72.5 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

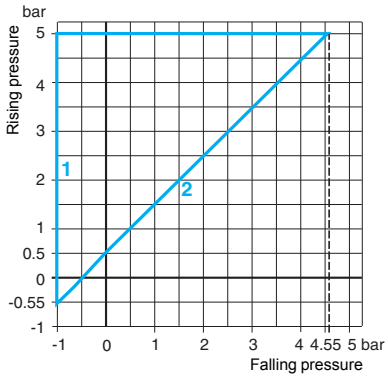
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML CM05A2S12** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML CM05B2S12** |
| | Corrosive fluids, up to + 160°C | **XML CM05C2S12** |
| **Weight (kg)** | | 0.685 |

## Complementary characteristics not shown under general characteristics (page 2/77)

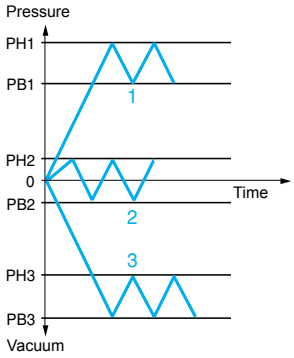
| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.45 bar (6.52 psi) |
| | Min. at high setting *(3)* | 0.45 bar (6.52 psi) |
| | Max. at high setting | 6 bar (87 psi) |
| **Maximum permissible pressure** | Per cycle | 6.25 bar (90.62 psi) |
| | Accidental | 11.25 bar (163.12 psi) |
| **Destruction pressure** | | 23 bar (333.5 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Vacu-pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML CM05A2S12** becomes **XML CM05A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.1 bar (± 1.45 psi).*

## Operating curves



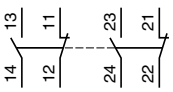

1 Maximum differential
2 Minimum differential




–– Adjustable value

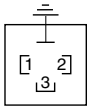
## Connection

### Terminal model




### Connector model

**Vacu-pressure switch pin view**



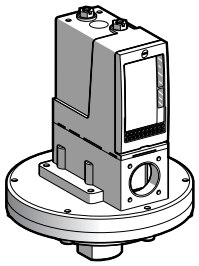
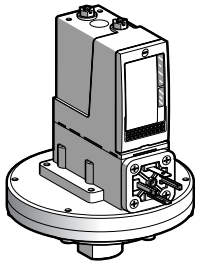

1 → 11 and 13
2 → 12
3 → 14

| | |
|---|---|
| **Other versions** | Vacu-pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

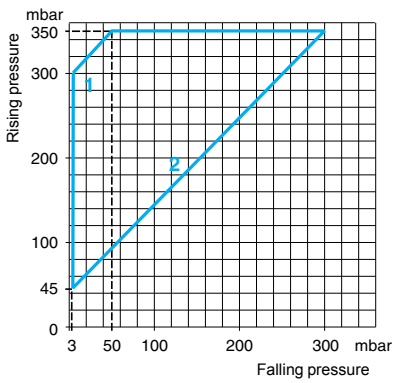
# Electromechanical pressure switches
## OsiSense XM, type XML
Size 350 mbar (5.07 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



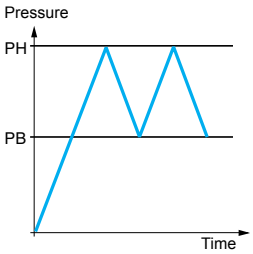
| **Pressure switches type XML B** | | **With setting scale** | |
|---|---|---|---|
| | |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | | **45…350 mbar (0.65…5.07 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML BL35R2S12** | **XML BL35R2C11** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML BL35S2S12** | **XML BL35S2C11** |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML BL35P2S12** | **XML BL35P2C11** |
| **Weight (kg)** | | 2.575 | 2.590 |
| **Complementary characteristics not shown under general characteristics** (page 2/77) | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 42 mbar (0.60 psi) | |
| | Min. at high setting *(4)* | 50 mbar (0.72 psi) | |
| | Max. at high setting | 300 mbar (4.35 psi) | |
| **Maximum permissible pressure** | Per cycle | 1.25 bar (18.12 psi) | |
| | Accidental | 2.25 bar (32.62 psi) | |
| **Destruction pressure** | | 4.5 bar (65.25 psi) | |
| **Mechanical life** | | 4 million operating cycles | |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML BL35R2S12** becomes **XML BL35R2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: - 8 mbar, + 3 mbar (- 0.12 psi, + 0.04 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 8 mbar (± 0.11 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential



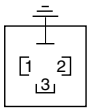

–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

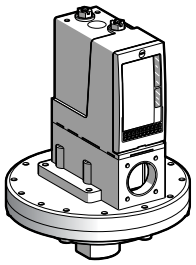
Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches
## OsiSense XM, type XML
Size 350 mbar (5.07 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



| | |
|---|---|
| **Pressure switches type XML B** | **30 bar (435 psi) overpressure**<br>**With setting scale** |



| | |
|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | **42…330 mbar (0.61…4.78 psi)** |
| **Electrical connection** | Terminals |

## References *(1)*

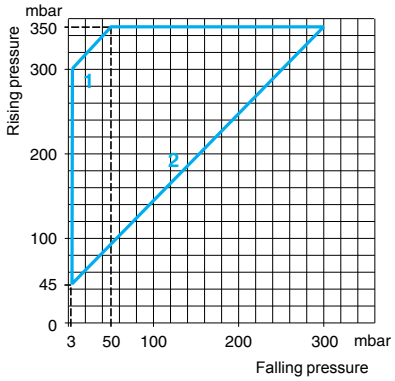
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML BS35R2S12** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | – |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | – |
| **Weight (kg)** | | 3.500 |

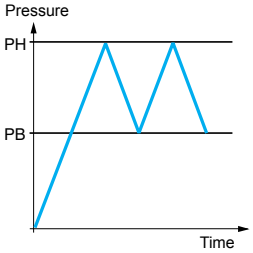
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 33 mbar (0.48 psi) |
| | Min. at high setting *(4)* | 58 mbar (0.84 psi) |
| | Max. at high setting | 250 mbar (3.62 psi) |
| **Maximum permissible pressure** | Per cycle | 30 bar (435 psi) |
| | Accidental | 37.5 bar (543.75 psi) |
| **Destruction pressure** | | 67.5 bar (978.75 psi) |
| **Mechanical life** | | 2 million operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML BS35R1S12** becomes **XML BS35R1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: - 8 mbar, + 3 mbar (- 0.12 psi, + 0.04 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 8 mbar (± 0.11 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

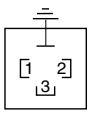
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

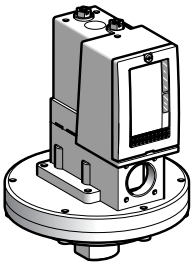
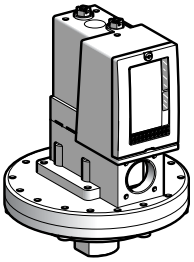
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 350 mbar (5.07 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| Pressure switches type XML C | With setting scale | 30 bar (435 psi) overpressure<br>With setting scale |
|---|---|---|
| |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **45…350 mbar (0.65…5.07 psi)** | **42…330 mbar (0.61…4.78 psi)** |
| **Electrical connection** | Terminals | |

## References *(1)*

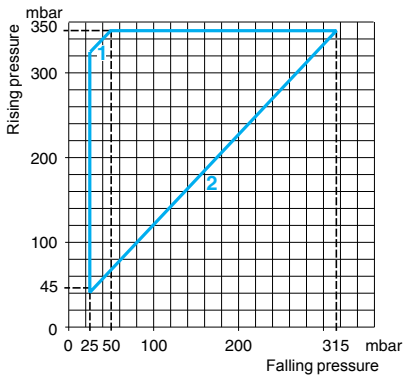
| | | | |
|---|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML CL35R2S12** | **XML CS35R2S12** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML CL35S2S12** | – |
| **Weight (kg)** | | 2.575 | 3.500 |

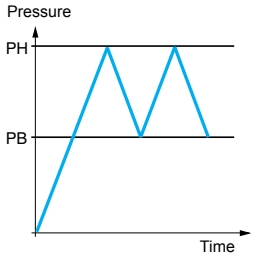
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 20 mbar (0.29 psi) | 40 mbar (0.58 psi) |
| | Min. at high setting *(3)* | 35 mbar (0.51 psi) | 88 mbar (1.27 psi) |
| | Max. at high setting | 300 mbar (4.35 psi) | 230 mbar (3.33 psi) |
| **Maximum permissible pressure** | Per cycle | 1.25 bar (18.12 psi) | 30 bar (435 psi) |
| | Accidental | 2.25 bar (32.62 psi) | 37.5 bar (543.75 psi) |
| **Destruction pressure** | | 4.5 bar (65.25 psi) | 67.5 bar (978.75 psi) |
| **Mechanical life** | | 4 million operating cycles | 2 million operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML CL35R2S12** becomes **XML CL35R2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 20 mbar (± 0.29 psi).*

## Operating curves



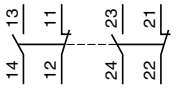




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

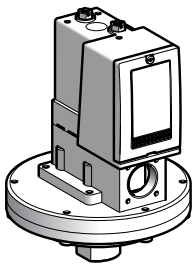
Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches
## OsiSense XM, type XML
Size 350 mbar (5.07 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Pressure switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **58…350 mbar (0.84…5.07 psi)** |
| | 1st stage switching point (PH1) | **33…325 mbar (0.48…4.71 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **25…310 mbar (0.36…4.50 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML DL35R1S12** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML DL35S1S12** |
| **Weight (kg)** | | 2.575 |

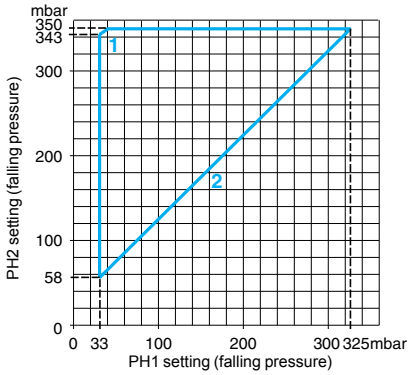
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 30 mbar (0.44 psi) |
| | At high setting *(4)* | 30 mbar (0.44 psi) |
| **Maximum permissible pressure** | Per cycle | 1.25 bar (18.12 psi) |
| | Accidental | 2.25 bar (32.62 psi) |
| **Destruction pressure** | | 4.5 bar (65.25 psi) |
| **Mechanical life** | | 4 million operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XMLDL35R1S12** becomes **XMLDL35R1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 10 mbar (± 0.15 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 8 mbar (± 0.11 psi).*

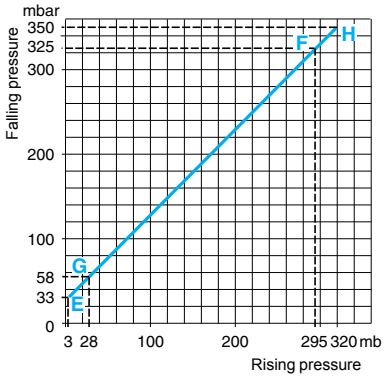
## Operating curves

### High setting tripping points of contacts 1 and 2

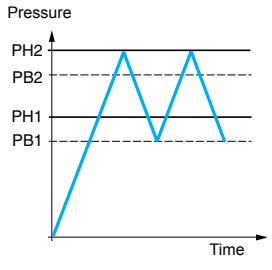



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



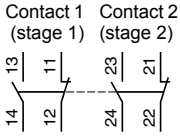

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**




| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

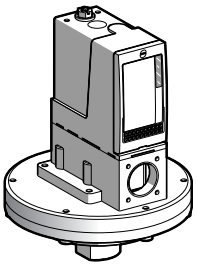
# Electromechanical pressure switches

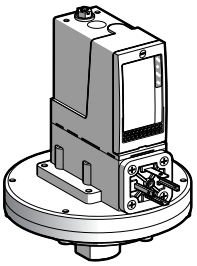
## OsiSense XM, type XML

Size 1 bar (14,5 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** | **With setting scale**





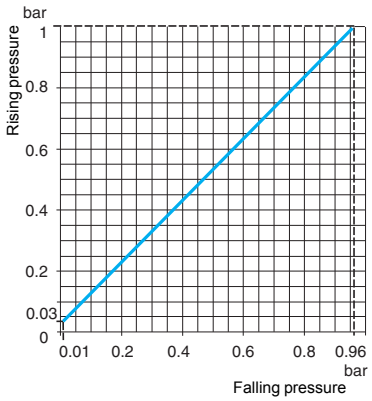
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **0.03…1 bar (0.435…14.5 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML A001R2S12** | **XML A001R2C11** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML A001S2S12** | **XML A001S2C11** |
| **Weight (kg)** | | 2.555 | 2.570 |

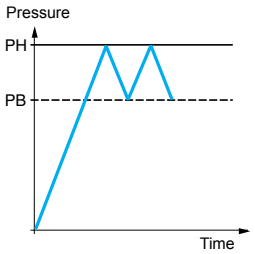
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 0.02 bar (0.29 psi) |
| | At high setting *(3)* | 0.04 bar (0.58 psi) |
| **Maximum permissible pressure** | Per cycle | 1.25 bar (18.12 psi) |
| | Accidental | 2.25 bar (32.62 psi) |
| **Destruction pressure** | | 4.5 bar (65.25 psi) |
| **Mechanical life** | | 4 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A001R2S12** becomes **XML A001R2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.01 bar (± 0.14 psi).*

## Operating curves



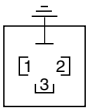

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

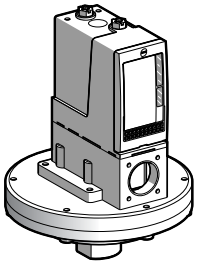
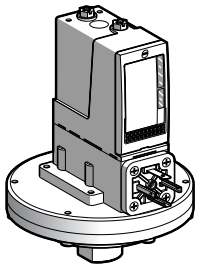
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 1 bar (14.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



| **Pressure switches type XML B** | **With setting scale** | |
|---|---|---|
| |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **0.05…1 bar (0.72…14.5 psi)** | |
| **Electrical connection** | Terminals | DIN connector |

## References *(1)*

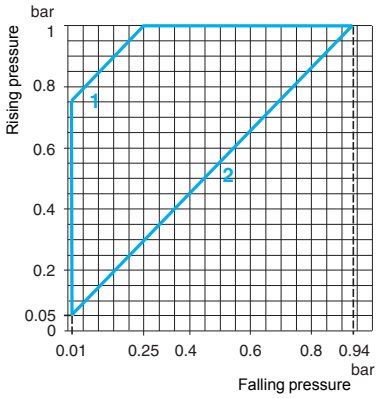
| | | | |
|---|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML B001R2S12** | **XML B001R2C11** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML B001S2S12** | **XML B001S2C11** |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML B001P2S12** | **XML B001P2C11** |
| **Weight (kg)** | | 2.575 | 2.590 |

## Complementary characteristics not shown under general characteristics (page 2/77)

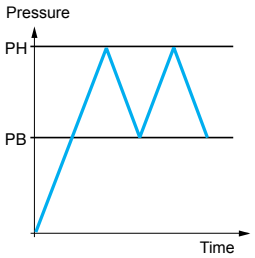
| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.04 bar (0.58 psi) |
| | Min. at high setting *(4)* | 0.06 bar (0.87 psi) |
| | Max. at high setting | 0.75 bar (10.87 psi) |
| **Maximum permissible pressure** | Per cycle | 1.25 bar (18.12 psi) |
| | Accidental | 2.25 bar (32.62 psi) |
| **Destruction pressure** | | 4.5 bar (65.25 psi) |
| **Mechanical life** | | 4 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B001R2S12** becomes **XML B001R2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 10 mbar (± 0.14 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 20 mbar (± 0.29 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential



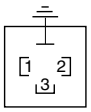

–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

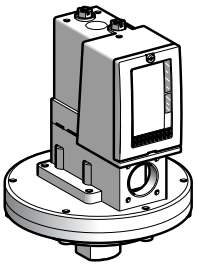
| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches
## OsiSense XM, type XML
Size 1 bar (14.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



**Pressure switches type XML C** | **With setting scale**



| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **0.05…1 bar (0.725…14.5 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

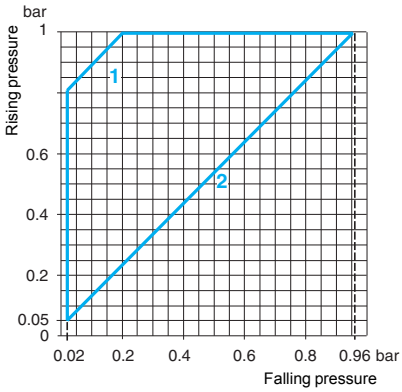
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML C001R2S12** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML C001S2S12** |
| **Weight (kg)** | | 2.555 |

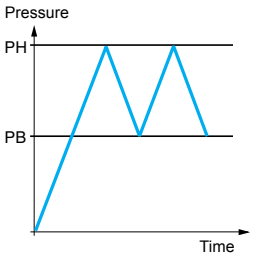
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.03 bar (0.43 psi) |
| | Min. at high setting *(4)* | 0.04 bar (0.58 psi) |
| | Max. at high setting | 0.8 bar (11.6 psi) |
| **Maximum permissible pressure** | Per cycle | 1.25 bar (18.12 psi) |
| | Accidental | 2.25 bar (32.62 psi) |
| **Destruction pressure** | | 4.5 bar (65.25 psi) |
| **Mechanical life** | | 4 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C001R2S12** becomes **XML C001R2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.01 bar (± 0.14 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.03 bar (± 0.43 psi).*

## Operating curves



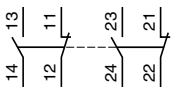




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

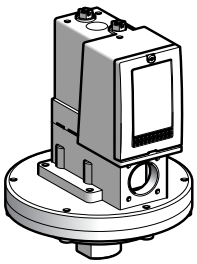
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 1 bar (14.5 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Pressure switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **0.12…1 bar (1.74…14.5 psi)** |
| | 1st stage switching point (PH1) | **0.04…0.92 bar (0.58…13.34 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **0.08…0.73 bar (1.16…10.59 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, air, up to + 160°C | **XML D001R1S12** |
| | Fresh water, sea water, corrosive fluids, up to + 160°C | **XML D001S1S12** |
| **Weight (kg)** | | 2.575 |

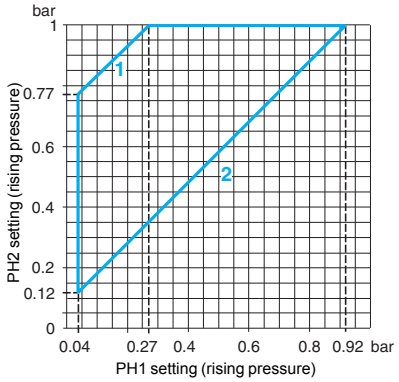
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 0.03 bar (0.44 psi) |
| | At high setting *(4)* | 0.07 bar (1.02 psi) |
| **Maximum permissible pressure** | Per cycle | 1.25 bar (18.12 psi) |
| | Accidental | 2.25 bar (32.62 psi) |
| **Destruction pressure** | | 4.5 bar (65.25 psi) |
| **Mechanical life** | | 4 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D001R1S12** becomes **XML D001R1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.01 bar (± 0.14 psi).*
(4) Deviation of the differential at high setting point for switches of the same size: ± 0.04 bar (± 0.58 psi).

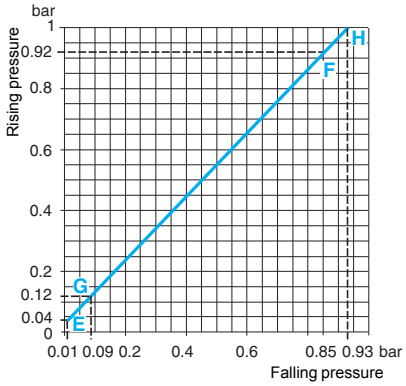
## Operating curves

### High setting tripping points of contacts 1 and 2

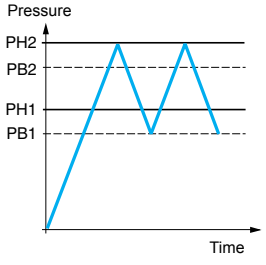



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



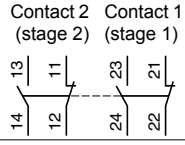

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**




| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

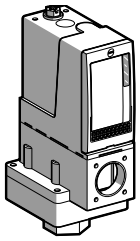
# Electromechanical pressure switches

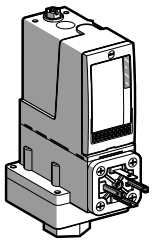
## OsiSense XM, type XML

Size 2.5 bar (36.25 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** | **With setting scale**





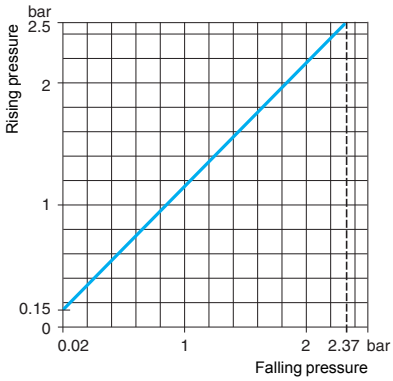
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **0.15…2.5 bar (2.17…36.25 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML A002A2S12** | **XML A002A2C11** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML A002B2S12** | **XML A002B2C11** |
| | Corrosive fluids, up to + 160°C | **XML A002C2S12** | **XML A002C2C11** |
| **Weight (kg)** | | 0.995 | 1.010 |

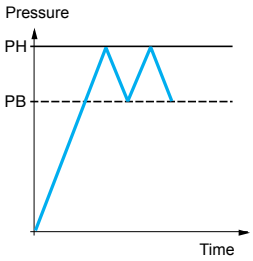
### Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 0.13 bar (1.88 psi) |
| | At high setting *(3)* | 0.13 bar (1.88 psi) |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) |
| | Accidental | 9 bar (130.5 psi) |
| **Destruction pressure** | | 18 bar (261 psi) |
| **Mechanical life** | | 8 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A002A2S12** becomes **XML A002A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.03 bar (± 0.43 psi).*

### Operating curves



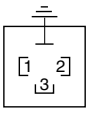

–– Adjustable value
--- Non adjustable value

### Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

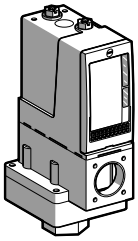
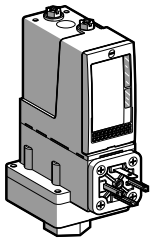
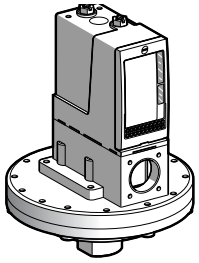
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

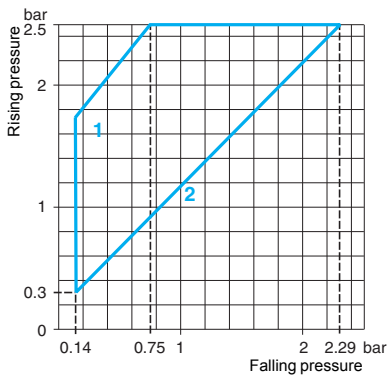
Size 2.5 bar (36.25 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)

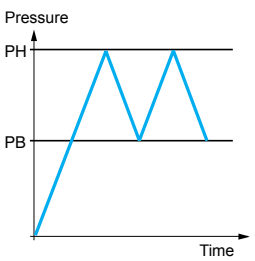


| **Pressure switches type XML B** | **With setting scale** | | **30 bar (435 psi) overpressure With setting scale** |
|---|---|---|---|
| |  |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **0.3…2.5 bar (4.35…36.25 psi)** | | |
| **Electrical connection** | Terminals | DIN connector | Terminals |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* — Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML B002A2S12** | **XML B002A2C11** | – |
| Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML B002B2S12** | **XML B002B2C11** | – |
| Hydraulic oils, fresh water, air, up to + 160°C | – | | **XML BS02B2S12** |
| Corrosive fluids, up to + 160°C | **XML B002C2S12** | **XML B002C2C11** | – |
| **Weight (kg)** | 1.015 | 1.030 | 3.500 |
| **Complementary characteristics not shown under general characteristics** (page 2/77) | | | |
| **Possible differential** (subtract from PH to give PB) — Min. at low setting *(3)* | 0.16 bar (2.32 psi) | | 0.1 bar (1.45 psi) |
| Min. at high setting *(3)* | 0.21 bar (3.04 psi) | | 0.22 bar (3.19 psi) |
| Max. at high setting | 1.75 bar (25.37 psi) | | 1.45 bar (21 psi) |
| **Maximum permissible pressure** — Per cycle | 5 bar (72.5 psi) | | 30 bar (435 psi) |
| Accidental | 9 bar (130.5 psi) | | 37.5 bar (543.75 psi) |
| **Destruction pressure** | 18 bar (261 psi) | | 67.5 bar (978.75 psi) |
| **Mechanical life** | 8 x $10^6$ operating cycles | | 2 x $10^6$ operating cycles |
| **Cable entry for terminal models** | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | | |
| **Connector type for connector models** | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 | | |
| **Pressure switch type** | Diaphragm | | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B002A2S12** becomes **XML B002A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: - 0.03 bar, + 0.05 bar (- 0.43 psi, + 0.72 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

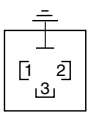
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

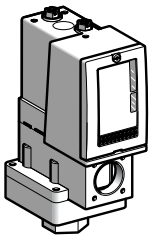
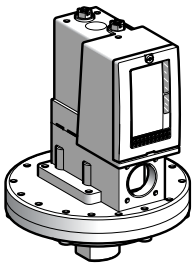
**Other versions** Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 2.5 bar (36.25 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** | **30 bar (435 psi) overpressure With setting scale** |
|---|---|---|
| |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **0.3…2.5 bar (4.35…36.25 psi)** | |
| **Electrical connection** | Terminals | |

## References *(1)*

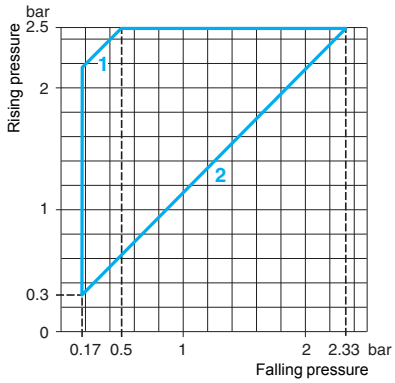
| | | | |
|---|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, air, up to + 160°C | – | **XML CS02B2S12** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML C002B2S12** | – |
| | Corrosive fluids, up to + 160°C | **XML C002C2S12** | – |
| **Weight (kg)** | | 0.995 | 3.500 |

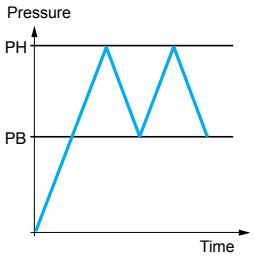
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.13 bar (1.89 psi) | 0.1 bar (1.45 psi) |
| | Min. at high setting *(4)* | 0.17 bar (2.47 psi) | 0.18 bar (2.61 psi) |
| | Max. at high setting | 2 bar (29 psi) | 1.25 bar (18.12 psi) |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) | 30 bar (435 psi) |
| | Accidental | 9 bar (130.5 psi) | 37.5 bar (543.75 psi) |
| **Destruction pressure** | | 18 bar (261 psi) | 67.5 bar (978.75 psi) |
| **Mechanical life** | | 8 x $10^6$ operating cycles | 2 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C002B2S12** becomes **XML C002B2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.02 bar (± 0.29 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.03 bar (± 0.43 psi).*

## Operating curves



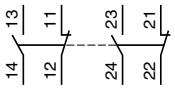




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

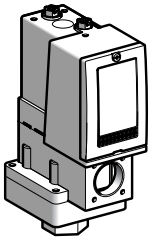
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 2.5 bar (36.25 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



| **Pressure switches type XML D** | **Without setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **0.34…2.5 bar (4.93…36.25 psi)** |
| | 1st stage switching point (PH1) | **0.2…2.36 bar (2.9…34.22 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **0.14…1.5 bar (2.03…21.75 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML D002B1S12** |
| | Corrosive fluids, up to + 160°C | **XML D002C1S12** |
| **Weight (kg)** | | 1.015 |

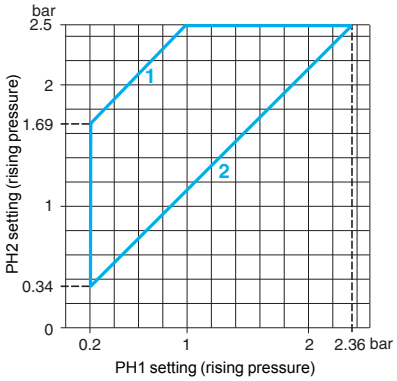
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 0.14 bar (2.03 psi) |
| | At high setting *(4)* | 0.19 bar (2.76 psi) |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) |
| | Accidental | 9 bar (130.5 psi) |
| **Destruction pressure** | | 18 bar (261 psi) |
| **Mechanical life** | | 8 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D002B1S12** becomes **XML D002B1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.04 bar (± 0.58 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.07 bar (± 1.02 psi).*

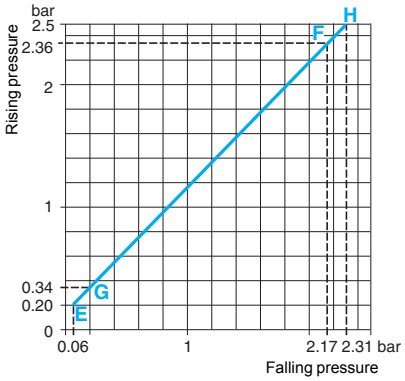
## Operating curves

### High setting tripping points of contacts 1 and 2

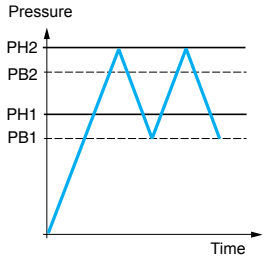



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



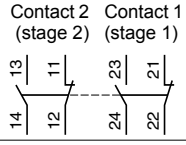

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

### Terminal model




| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

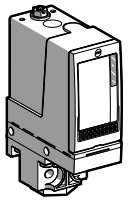
# Electromechanical pressure switches

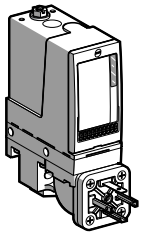
## OsiSense XM, type XML

Size 4 bar (58 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** | **With setting scale**

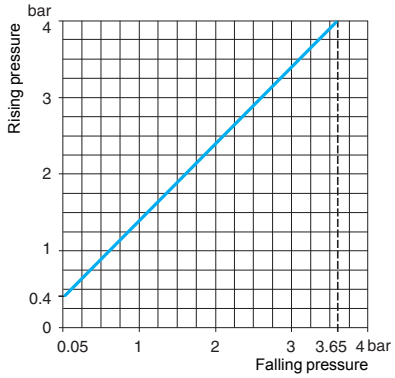


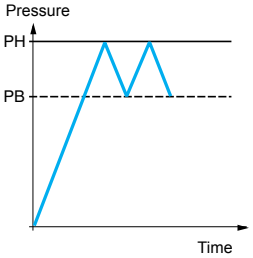


| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **0.4…4 bar (5.8…58 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML A004A2S12** | **XML A004A2C11** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML A004B2S12** | **XML A004B2C11** |
| | Corrosive fluids, up to + 160°C | **XML A004C2S12** | **XML A004C2C11** |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML A004P2S12** | **XML A004P2C11** |
| **Weight (kg)** | | 0.685 | 0.715 |
| **Complementary characteristics not shown under general characteristics** (page 2/77) | | | |
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 0.35 bar (5.07 psi) | |
| | At high setting *(3)* | 0.35 bar (5.07 psi) | |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) | |
| | Accidental | 9 bar (130.5 psi) | |
| **Destruction pressure** | | 18 bar (261 psi) | |
| **Mechanical life** | | 8 x $10^6$ operating cycles | |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A004A2S12** becomes **XML A004A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.03 bar (± 0.43 psi).*

## Operating curves



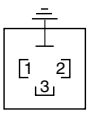

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

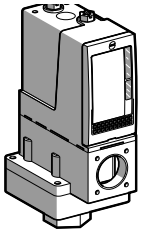
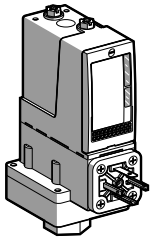
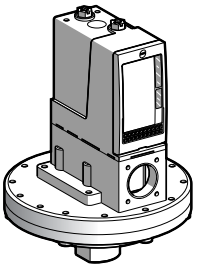
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

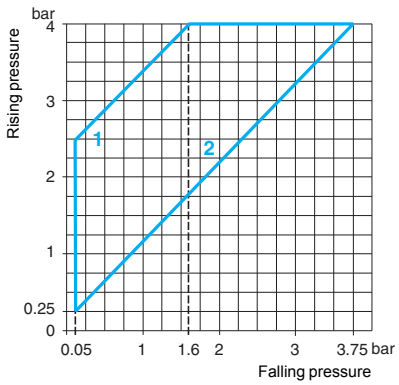
Size 4 bar (58 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)

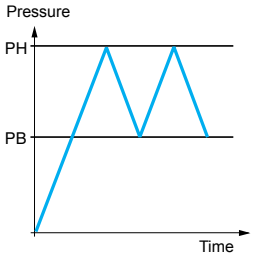


| **Pressure switches type XML B** | **With setting scale** | | **30 bar (435 psi) overpressure With setting scale** |
|---|---|---|---|
| |  |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **0.25…4 bar (3.62…58 psi)** | | |
| **Electrical connection** | Terminals | DIN connector | Terminals |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* — Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML B004A2S12** | **XML B004A2C11** | – |
| Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML B004B2S12** | **XML B004B2C11** | – |
| Hydraulic oils, fresh water, air, up to + 160°C | – | | **XML BS04B2S12** |
| Corrosive fluids, up to + 160°C | **XML B004C2S12** | **XML B004C2C11** | – |
| **Weight (kg)** | 1.015 | 1.030 | 3.500 |
| **Complementary characteristics not shown under general characteristics** (page 2/77) | | | |
| **Possible differential** (subtract from PH to give PB) — Min. at low setting *(3)* | 0.2 bar (2.9 psi) | | 0.15 bar (2.18 psi) |
| Min. at high setting *(4)* | 0.25 bar (3.62 psi) | | 0.34 bar (4.93 psi) |
| Max. at high setting | 2.4 bar (34.8 psi) | | 2.46 bar (35.67 psi) |
| **Maximum permissible pressure** — Per cycle | 5 bar (72.5 psi) | | 30 bar (435 psi) |
| Accidental | 9 bar (130.5 psi) | | 37.5 bar (543.75 psi) |
| **Destruction pressure** | 18 bar (261 psi) | | 67.5 bar (978.75 psi) |
| **Mechanical life** | 8 x $10^6$ operating cycles | | 2 x $10^6$ operating cycles |
| **Cable entry for terminal models** | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | | |
| **Connector type for connector models** | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 | | |
| **Pressure switch type** | Diaphragm | | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B004A2S12** becomes **XML B004A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.01 bar* (± 0.14 psi).
*(4) Deviation of the differential at high setting point for switches of the same size: - 0.03 bar, + 0.05 bar (- 0.43 psi, + 0.72 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

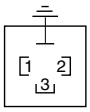
–– Adjustable value

## Connection

### Terminal model


### Connector model

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |
|---|---|

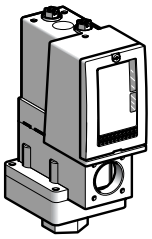
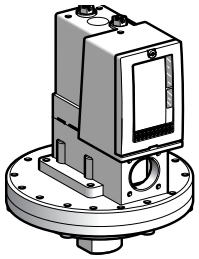
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 4 bar (58 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** | **30 bar (435 psi) overpressure With setting scale** |
|---|---|---|
| |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **0.3…4 bar (4.35…58 psi)** | |
| **Electrical connection** | Terminals | |

## References *(1)*

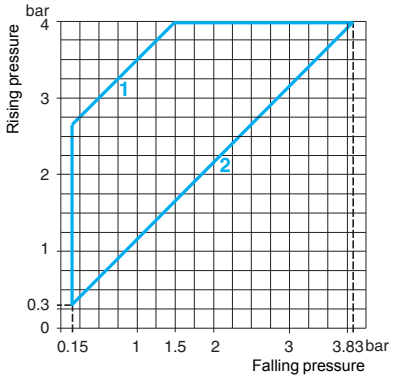
| | | | |
|---|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, air, up to + 160°C | – | **XML CS04B2S12** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML C004B2S12** | – |
| | Corrosive fluids, up to + 160°C | **XML C004C2S12** | – |
| **Weight (kg)** | | 0.685 | 3.500 |

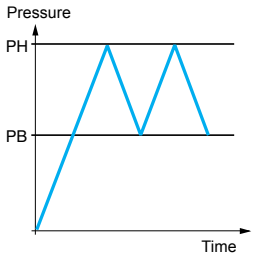
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.15 bar (2.18 psi) | 0.1 bar (1.45 psi) |
| | Min. at high setting *(3)* | 0.17 bar (2.47 psi) | 0.25 bar (3.62 psi) |
| | Max. at high setting | 2.5 bar (36.25 psi) | 2.20 bar (31.9 psi) |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) | 30 bar (435 psi) |
| | Accidental | 9 bar (130.5 psi) | 37.5 bar (543.75 psi) |
| **Destruction pressure** | | 18 bar (261 psi) | 67.5 bar (978.75 psi) |
| **Mechanical life** | | 8 x $10^6$ operating cycles | 2 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C004B2S12** becomes **XML C004B2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.02 bar (± 0.29 psi).*

## Operating curves



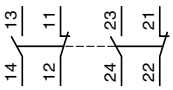




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

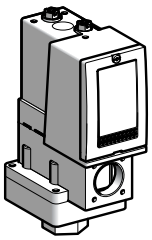
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 4 bar (58 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



| Pressure switches type XML D | Without setting scale |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **0.40…4 bar (5.8…58 psi)** |
| | 1st stage switching point (PH1) | **0.19…3.79 bar (2.76…54.96 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **0.21…2.18 bar (3.05…31.61 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML D004B1S12** |
| | Corrosive fluids, up to + 160°C | **XML D004C1S12** |
| **Weight (kg)** | | 1.015 |

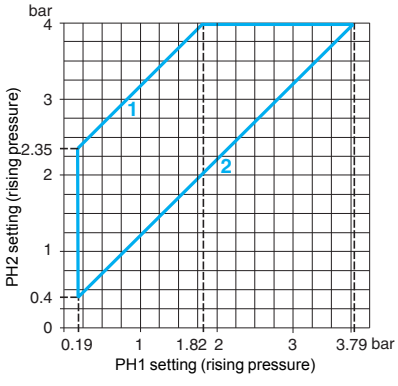
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 0.15 bar (2.18 psi) |
| | At high setting *(3)* | 0.19 bar (2.76 psi) |
| **Maximum permissible pressure** | Per cycle | 5 bar (72.5 psi) |
| | Accidental | 9 bar (130.5 psi) |
| **Destruction pressure** | | 18 bar (261 psi) |
| **Mechanical life** | | 8 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D004B1S12** becomes **XML D004B1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.03 bar (± 0.43 psi).*

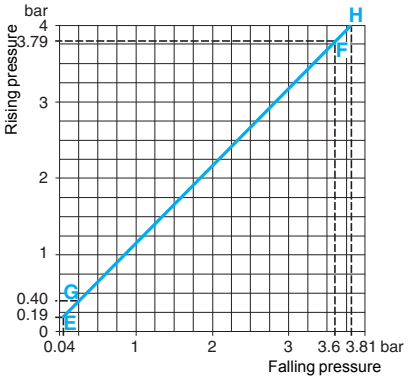
## Operating curves

### High setting tripping points of contacts 1 and 2

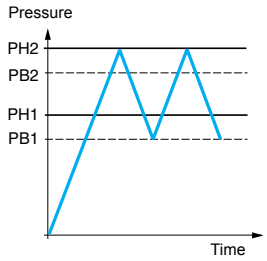



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



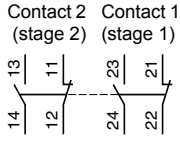

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**




| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

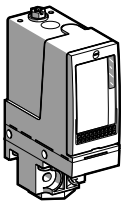
# Electromechanical pressure switches

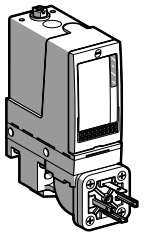
## OsiSense XM, type XML

Size 10 bar (145 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** | **With setting scale**





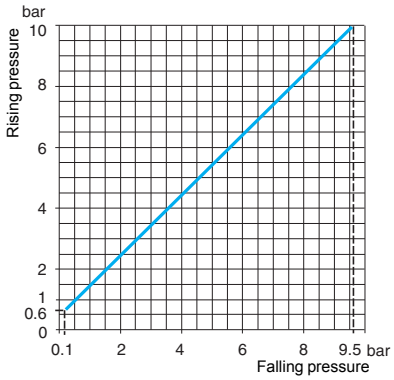
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **0.6…10 bar (8.7…145 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML A010A2S12** | **XML A010A2C11** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML A010B2S12** | **XML A010B2C11** |
| | Corrosive fluids, up to + 160°C | **XML A010C2S12** | **XML A010C2C11** |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML A010P2S12** | **XML A010P2C11** |
| **Weight (kg)** | | 0.685 | 0.715 |

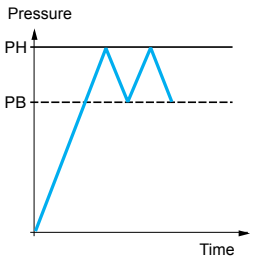
### Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 0.5 bar (7.25 psi) |
| | At high setting *(3)* | 0.5 bar (7.25 psi) |
| **Maximum permissible pressure** | Per cycle | 12.5 bar (181.25 psi) |
| | Accidental | 22.5 bar (326.25 psi) |
| **Destruction pressure** | | 45 bar (652.5 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A010A2S12** becomes **XML A010A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.05 bar (± 0.72 psi).*

## Operating curves



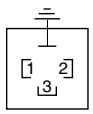

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

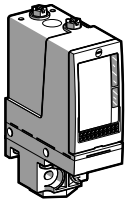
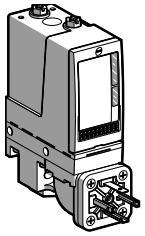
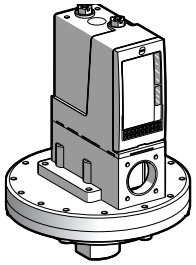
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 10 bar (145 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)

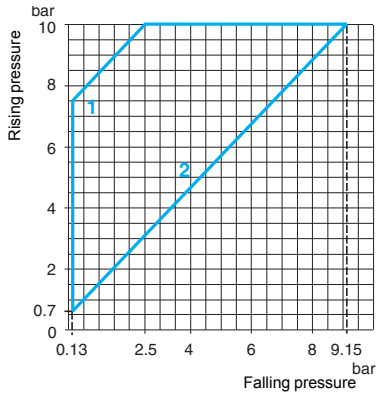


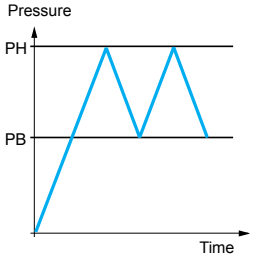
| **Pressure switches type XML B** | **With setting scale** | | **30 bar (435 psi) overpressure With setting scale** |
|---|---|---|---|
| |  |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **0.7…10 bar (10.15…145 psi)** | | |
| **Electrical connection** | Terminals | DIN connector | Terminals |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* — Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML B010A2S12** | **XML B010A2C11** | – |
| Hydraulic oils, fresh water, air, up to + 160°C | – | – | **XML BS10A2S12** |
| Hydraulic oils, fresh water, air, up to + 160°C | **XML B010B2S12** | **XML B010B2C11** | – |
| Corrosive fluids, up to + 160°C | **XML B010C2S12** | **XML B010C2C11** | – |
| Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML B010P2S12** | **XML B010P2C11** | – |
| **Weight (kg)** | 0.705 | 0.735 | 3.500 |

| **Complementary characteristics not shown under general characteristics** (page 2/77) | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.57 bar (8.26 psi) | 0.45 bar (6.52 psi) |
| | Min. at high setting *(4)* | 0.85 bar (12.32 psi) | 0.85 bar (12.32 psi) |
| | Max. at high setting | 7.5 bar (108.75 psi) | 6.25 bar (90.62 psi) |
| **Maximum permissible pressure** | Per cycle | 12.5 bar (181.25 psi) | 30 bar (435 psi) |
| | Accidental | 22.5 bar (326.25 psi) | 37.5 bar (543.75 psi) |
| **Destruction pressure** | | 45 bar (652.5 psi) | 67.5 bar (978.75 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles | 2 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B010A2S12** becomes **XML B010A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.05 bar (± 0.72 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: - 0.1 bar, + 0.15 bar (- 1.45 psi, + 2.17 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

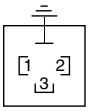
–– Adjustable value

## Connection

### Terminal model


### Connector model

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

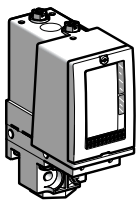
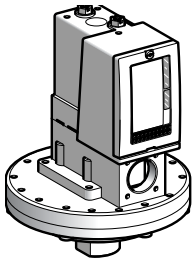
**Other versions** Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 10 bar (145 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| Pressure switches type XML C | With setting scale | 30 bar (435 psi) overpressure<br>With setting scale |
|---|---|---|
| |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **0.7…10 bar (10.15…145 psi)** | |
| **Electrical connection** | Terminals | |

## References *(1)*

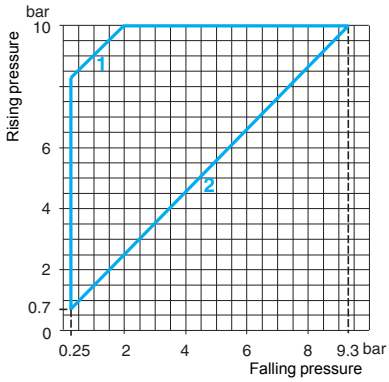
| | | | |
|---|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, air, up to + 70°C | – | **XML CS10A2S12** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML C010B2S12** | – |
| | Corrosive fluids, up to + 160°C | **XML C010C2S12** | – |
| **Weight (kg)** | | 0.685 | 3.500 |

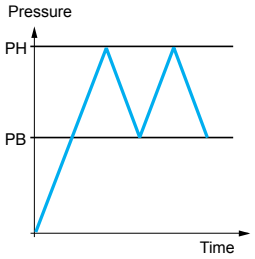
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.45 bar (6.53 psi) | 0.25 bar (3.62 psi) |
| | Min. at high setting *(4)* | 0.70 bar (10.15 psi) | 0.65 bar (9.42 psi) |
| | Max. at high setting | 8 bar (116 psi) | 5.6 bar (81.2 psi) |
| **Maximum permissible pressure** | Per cycle | 12.5 bar (181.25 psi) | 30 bar (435 psi) |
| | Accidental | 22.5 bar (326.25 psi) | 37.5 bar (543.75 psi) |
| **Destruction pressure** | | 45 bar (652.5 psi) | 67.5 bar (978.75 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles | 2 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C010B2S12** becomes **XML C010B2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.05 bar (± 0.72 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.01 bar (± 1.45 psi).*

## Operating curves



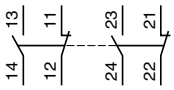




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

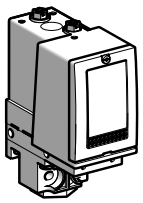
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 10 bar (145 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Pressure switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **1.2…10 bar (17.4…145 psi)** |
| | 1st stage switching point (PH1) | **0.52…9.32 bar (7.54…135.14 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **0.68…5.8 bar (9.86…84.1 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML D010B1S12** |
| | Corrosive fluids, up to + 160°C | **XML D010C1S12** |
| **Weight (kg)** | | 0.705 |

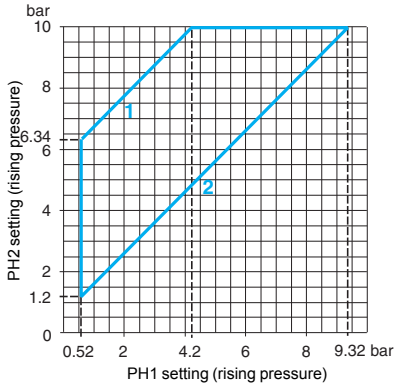
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 0.45 bar (6.53 psi) |
| | At high setting *(4)* | 0.6 bar (8.7 psi) |
| **Maximum permissible pressure** | Per cycle | 12.5 bar (181.25 psi) |
| | Accidental | 22.5 bar (326.25 psi) |
| **Destruction pressure** | | 45 bar (652.5 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D010B1S12** becomes **XML D010B1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.05 bar (± 0.72 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.1 bar (± 1.45 psi).*

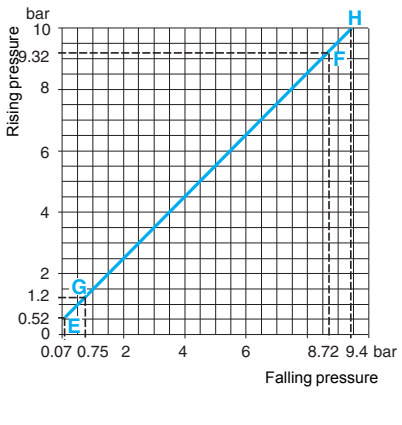
## Operating curves

### High setting tripping points of contacts 1 and 2

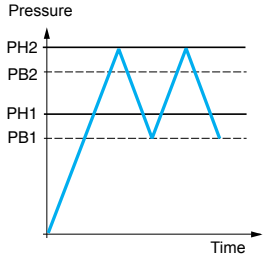



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



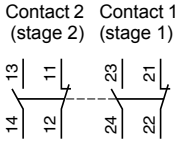

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

### Terminal model




**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

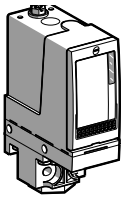
# Electromechanical pressure switches

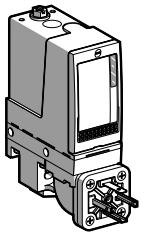
## OsiSense XM, type XML

Size 20 bar (290 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** — **With setting scale**





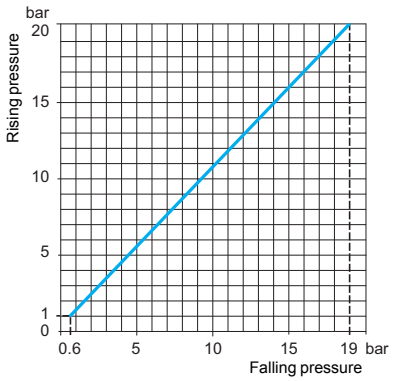
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **1…20 bar (14.5…290 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML A020A2S12** | **XML A020A2C11** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML A020B2S12** | **XML A020B2C11** |
| | Corrosive fluids, up to + 160°C | **XML A020C2S12** | **XML A020C2C11** |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML A020P2S12** | **XML A020P2C11** |
| **Weight (kg)** | | 0.685 | 0.715 |

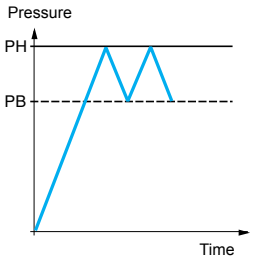
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 0.4 bar (5.8 psi) |
| | At high setting *(3)* | 1 bar (14.5 psi) |
| **Maximum permissible pressure** | Per cycle | 25 bar (362.5 psi) |
| | Accidental | 45 bar (652.5 psi) |
| **Destruction pressure** | | 90 bar (1305 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A020A2S12** becomes **XML A020A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at high setting point for switches of the same size: ± 0.1 bar (± 1.45 psi).*
*Deviation of the differential at low setting point: ± 0.2 bar (± 2.9 psi).*

## Operating curves



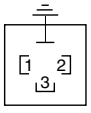

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

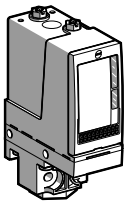
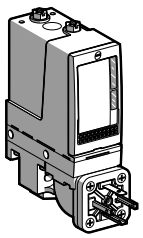
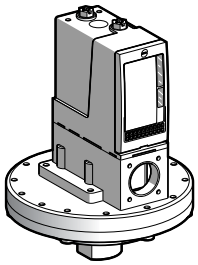
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 20 bar (290 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



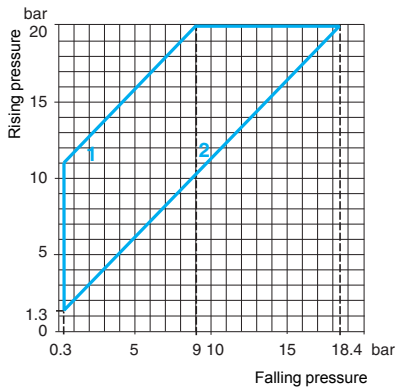
| **Pressure switches type XML B** | **With setting scale** | | **30 bar (435 psi) overpressure With setting scale** |
|---|---|---|---|
| |  |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **1.3…20 bar (18.9…290 psi)** | | |
| **Electrical connection** | Terminals | DIN connector | Terminals |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* — Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML B020A2S12** | **XML B020A2C11** | – |
| Hydraulic oils, fresh water, air, up to + 160°C | – | – | **XML BS20A2S12** |
| Hydraulic oils, fresh water, air, up to + 160°C | **XML B020B2S12** | **XML B020B2C11** | – |
| Corrosive fluids, up to + 160°C | **XML B020C2S12** | **XML B020C2C11** | – |
| Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML B020P2S12** | **XML B020P2C11** | – |
| **Weight (kg)** | 0.705 | 0.735 | 3.500 |

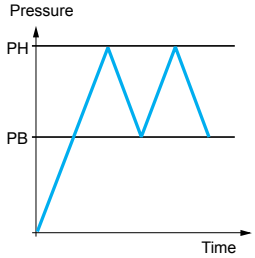
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 1 bar (14.5 psi) | 0.95 bar (13.78 psi) |
| | Min. at high setting *(3)* | 1.6 bar (23.20 psi) | 1.45 bar (21.03 psi) |
| | Max. at high setting | 11 bar (159.5 psi) | 12.6 bar (182.7 psi) |
| **Maximum permissible pressure** | Per cycle | 25 bar (362.5 psi) | 30 bar (435 psi) |
| | Accidental | 45 bar (652.5 psi) | 37.5 bar (543.75 psi) |
| **Destruction pressure** | | 90 bar (1305 psi) | 67.5 bar (978.75 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles | 2 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B020A2S12** becomes **XML B020A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.25 bar (± 3.63 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

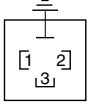
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

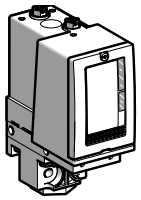
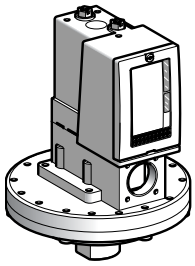
**Other versions** Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 20 bar (290 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** | **30 bar (435 psi) overpressure With setting scale** |
|---|---|---|
| |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **1.3…20 bar (18.85…290 psi)** | |
| **Electrical connection** | Terminals | |

## References *(1)*

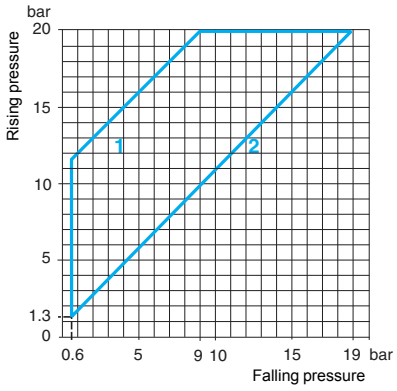
| | | | |
|---|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, air, up to + 70°C | – | **XML CS20A2S12** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML C020B2S12** | – |
| | Corrosive fluids, up to + 160°C | **XML C020C2S12** | – |
| **Weight (kg)** | | 0.685 | 3.500 |

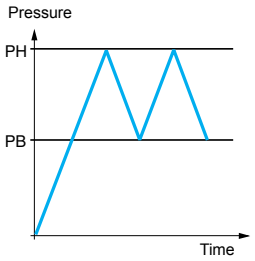
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 0.7 bar (10.15 psi) | 0.7 bar (10.15 psi) |
| | Min. at high setting *(3)* | 1 bar (14.5 psi) | 1.15 bar (16.67 psi) |
| | Max. at high setting | 11 bar (159.5 psi) | 11.70 bar (169.6 psi) |
| **Maximum permissible pressure** | Per cycle | 25 bar (362.5 psi) | 30 bar (435 psi) |
| | Accidental | 45 bar (652.5 psi) | 37.5 bar (543.75 psi) |
| **Destruction pressure** | | 90 bar (1305 psi) | 67.5 bar (978.75 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles | 2 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm | |
| **Pressure switch type** | | Diaphragm | |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C020B2S12** becomes **XML C020B2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.2 bar (± 2.9 psi).*

## Operating curves



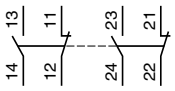




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

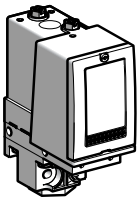
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 20 bar (290 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Pressure switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **2.14…20 bar (31.03…290 psi)** |
| | 1st stage switching point (PH1) | **0.9…18.76 bar (13.05…272.02 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **1.24…9.55 bar (17.98…138.48 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML D020B1S12** |
| | Corrosive fluids, up to + 160°C | **XML D020C1S12** |
| **Weight (kg)** | | 0.705 |

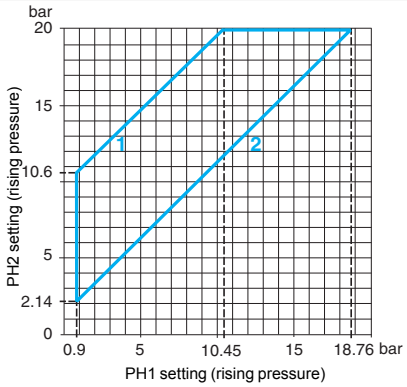
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 0.7 bar (10.15 psi) |
| | At high setting *(4)* | 1.3 bar (18.85 psi) |
| **Maximum permissible pressure** | Per cycle | 25 bar (362.5 psi) |
| | Accidental | 45 bar (652.5 psi) |
| **Destruction pressure** | | 90 bar (1305 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D020B1S12** becomes **XML D020B1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.15 bar (± 2.18 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.3 bar (± 4.35 psi).*

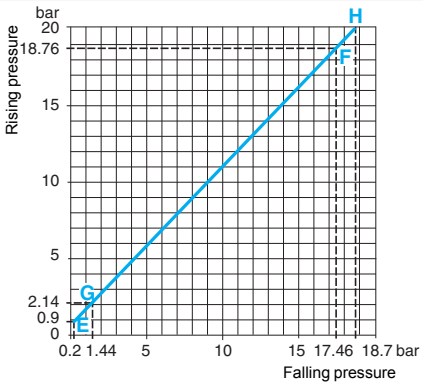
## Operating curves

### High setting tripping points of contacts 1 and 2

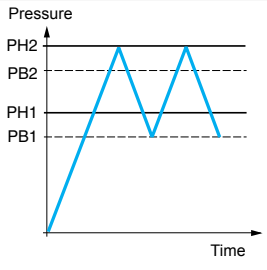



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



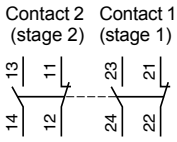

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**




**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

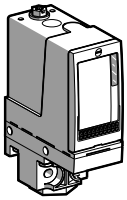
# Electromechanical pressure switches

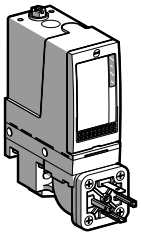
## OsiSense XM, type XML

Size 35 bar (507.5 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** — **With setting scale**





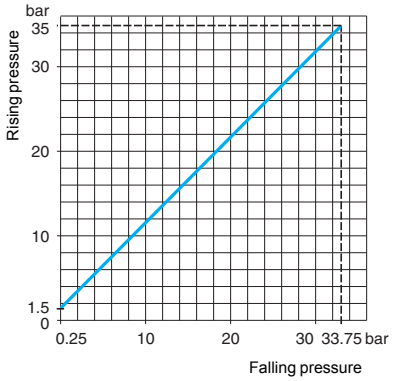
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **1.5…35 bar (21.75…507.5 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML A035A2S12** | **XML A035A2C11** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML A035B2S12** | **XML A035B2C11** |
| | Corrosive fluids, up to + 160°C | **XML A035C2S12** | **XML A035C2C11** |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML A035P2S12** | **XML A035P2C11** |
| **Weight (kg)** | | 0.695 | 0.725 |

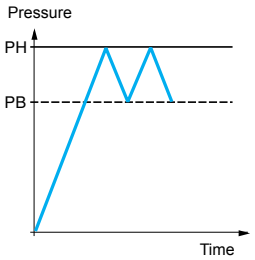
### Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 1.25 bar (18.12 psi) |
| | At high setting *(3)* | 1.25 bar (18.12 psi) |
| **Maximum permissible pressure** | Per cycle | 45 bar (652.5 psi) |
| | Accidental | 80 bar (1160 psi) |
| **Destruction pressure** | | 160 bar (2320 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A035A2S12** becomes **XML A035A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.25 bar (± 3.62 psi).*

## Operating curves



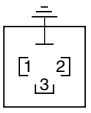

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

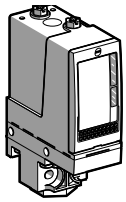
# Electromechanical pressure switches

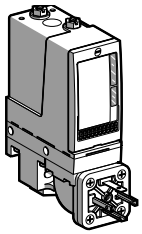
## OsiSense XM, type XML

Size 35 bar (507.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML B** | **With setting scale**





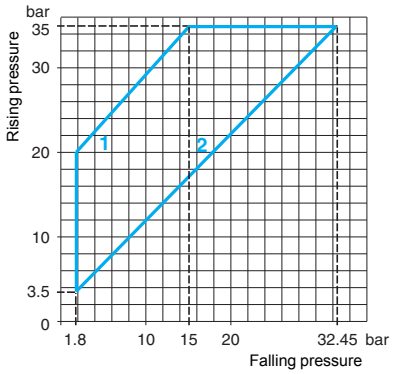
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **3.5…35 bar (50.75…507.5 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to +70°C | **XML B035A2S12** | **XML B035A2C11** |
| | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML B035B2S12** | **XML B035B2C11** |
| | Corrosive fluids, up to + 160°C | **XML B035C2S12** | **XML B035C2C11** |
| | Viscous products, up to + 160°C (G 1¼" fluid connection) | **XML B035P2S12** | **XML B035P2C11** |
| **Weight (kg)** | | 0.715 | 0.745 |

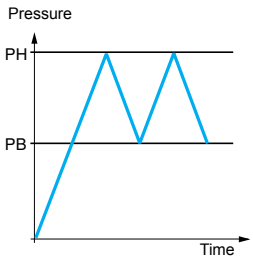
### Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 1.7 bar (24.65 psi) |
| | Min. at high setting *(3)* | 2.55 bar (36.97 psi) |
| | Max. at high setting | 20 bar (290 psi) |
| **Maximum permissible pressure** | Per cycle | 45 bar (652.5 psi) |
| | Accidental | 80 bar (1160 psi) |
| **Destruction pressure** | | 160 bar (2320 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B035A2S12** becomes **XML B035A2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: - 0.5 bar, + 0.7 bar (- 7.25 psi, + 10.15 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

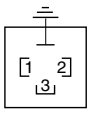
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

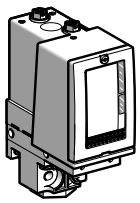
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 35 bar (507.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **3.5…35 bar (50.75…507.5 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

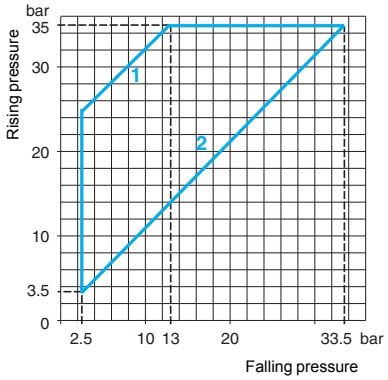
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML C035B2S12** |
| | Corrosive fluids, up to + 160°C | **XML C035C2S12** |
| **Weight (kg)** | | 0.695 |

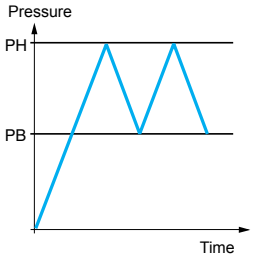
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 1 bar (14.5 psi) |
| | Min. at high setting *(4)* | 1.5 bar (21.75 psi) |
| | Max. at high setting | 22 bar (319 psi) |
| **Maximum permissible pressure** | Per cycle | 45 bar (652.5 psi) |
| | Accidental | 80 bar (1160 psi) |
| **Destruction pressure** | | 160 bar (2320 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C035B2S12** becomes **XML C035B2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.2 bar (± 2.9 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.5 bar (± 7.25 psi).*

## Operating curves



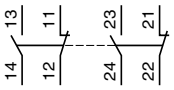




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

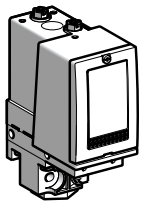
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 35 bar (507.5 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Pressure switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **4.4…35 bar (63.8…507.5 psi)** |
| | 1st stage switching point (PH1) | **1.9…32.5 bar (27.55…471.25 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **2.5…20.4 bar (36.25…295.8 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, fresh water, sea water, air, up to 160°C | **XML D035B1S12** |
| | Corrosive fluids, up to + 160°C | **XML D035C1S12** |
| **Weight (kg)** | | 0.715 |

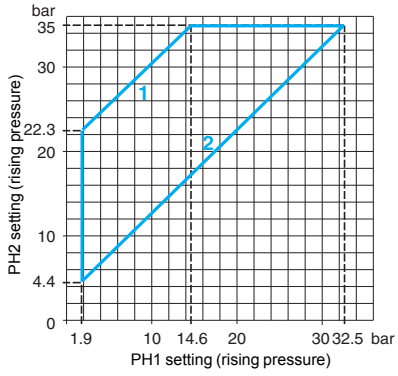
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 1.5 bar (21.75 psi) |
| | At high setting *(4)* | 2.6 bar (37.7 psi) |
| **Maximum permissible pressure** | Per cycle | 45 bar (652.5 psi) |
| | Accidental | 80 bar (1160 psi) |
| **Destruction pressure** | | 160 bar (2320 psi) |
| **Mechanical life** | | 5 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Diaphragm |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D035B1S12** becomes **XML D035B1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 0.3 bar (± 4.35 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 0.7 bar (± 10.15 psi).*

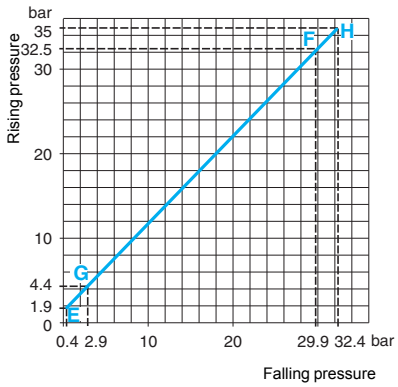
## Operating curves

**High setting tripping points of contacts 1 and 2**

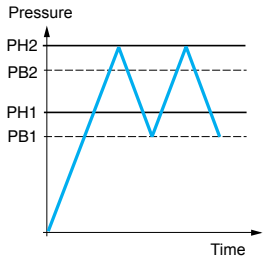



1 Maximum differential
2 Minimum differential

**Natural differential of contacts 1 and 2**



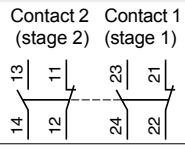

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**




**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

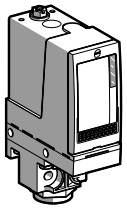
# Electromechanical pressure switches

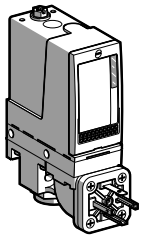
## OsiSense XM, type XML

Size 70 bar (1015 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** | **With setting scale**





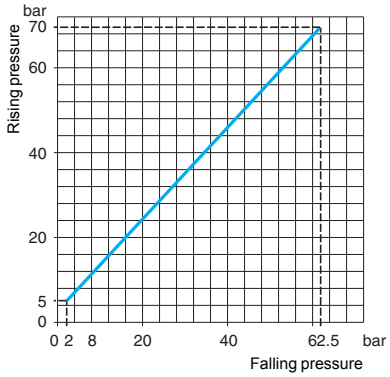
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **5…70 bar (72.5…1015 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, up to + 160°C | **XML A070D2S12** | **XML A070D2C11** |
| | Fresh water, sea water, up to + 160°C | **XML A070E2S12** | **XML A070E2C11** |
| | Corrosive fluids, air, up to + 160°C | **XML A070N2S12** | **XML A070N2C11** |
| **Weight (kg)** | | 0.695 | 0.725 |

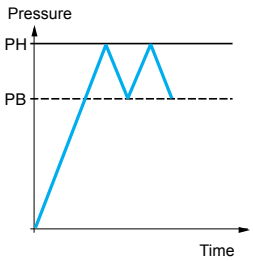
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 3 bar (43.5 psi) |
| | At high setting *(3)* | 7.5 bar (108.75 psi) |
| **Maximum permissible pressure** | Per cycle | 90 bar (1035 psi) |
| | Accidental | 160 bar (2320 psi) |
| **Destruction pressure** | | 320 bar (4640 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A070D2S12** becomes **XML A070D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 1 bar (± 14.5 psi)*

## Operating curves



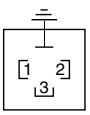

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

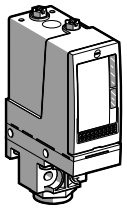
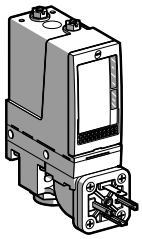
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 70 bar (1015 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



| **Pressure switches type XML B** | **With setting scale** | |
|---|---|---|
| |  |  |

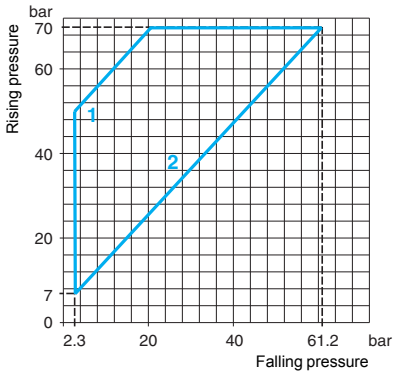
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **7…70 bar (101.5…1015 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, up to + 160°C | **XML B070D2S12** | **XML B070D2C11** |
| | Fresh water, sea water, up to + 160°C | **XML B070E2S12** | **XML B070E2C11** |
| | Corrosive fluids, air, up to + 160°C | **XML B070N2S12** | **XML B070N2C11** |
| **Weight (kg)** | | 0.715 | 0.745 |

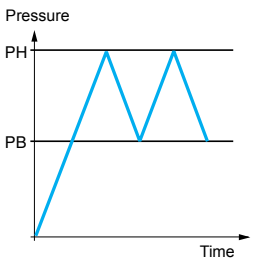
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 4.7 bar (68.15 psi) |
| | Min. at high setting *(4)* | 8.8 bar (127.6 psi) |
| | Max. at high setting | 50 bar (725 psi) |
| **Maximum permissible pressure** | Per cycle | 90 bar (1035 psi) |
| | Accidental | 160 bar (2320 psi) |
| **Destruction pressure** | | 320 bar (4640 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B070D2S12** becomes **XML B070D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: - 0.4 bar, + 0.7 bar (- 5.8 psi, + 10.15 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: - 0.6 bar, + 0.8 bar (- 8.7 psi, + 11.6 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

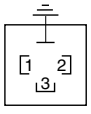
–– Adjustable value

## Connection

### Terminal model


### Connector model

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

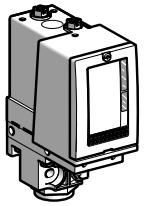
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 70 bar (1015 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **7…70 bar (101.5…1015 psi)** |
| **Electrical connection** | | Terminals |

### References *(1)*

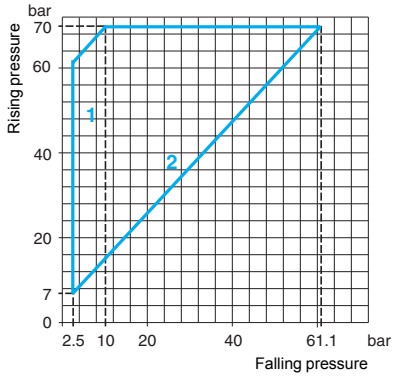
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, up to + 160°C | **XML C070D2S12** |
| | Fresh water, sea water, up to + 160°C | **XML C070E2S12** |
| | Corrosive fluids, up to + 160°C | **XML C070N2S12** |
| **Weight (kg)** | | 0.695 |

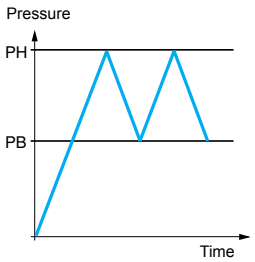
### Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 4.5 bar (65.25 psi) |
| | Min. at high setting *(3)* | 8.9 bar (129.05 psi) |
| | Max. at high setting | 60 bar (870 psi) |
| **Maximum permissible pressure** | Per cycle | 90 bar (1035 psi) |
| | Accidental | 160 bar (2320 psi) |
| **Destruction pressure** | | 320 bar (4640 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C070D2S12** becomes **XML C070D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.8 bar (± 11.6 psi).*

### Operating curves



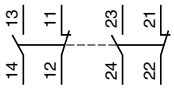




1 Maximum differential
2 Minimum differential

–– Adjustable value

### Connection

**Terminal model**




| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

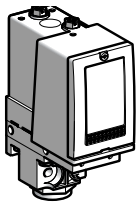
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 70 bar (1015 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



| **Pressure switches type XML D** | **Without setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **9.4…70 bar (136.3…1015 psi)** |
| | 1st stage switching point (PH1) | **6.6…67.2 bar (95.7…974.4 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **2.8…46 bar (40.6…667 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, up to + 160°C | **XML D070D1S12** |
| | Fresh water, sea water, up to + 160°C | **XML D070E1S12** |
| | Corrosive fluids, air, up to + 160°C | **XML D070N1S12** |
| **Weight (kg)** | | 0.715 |

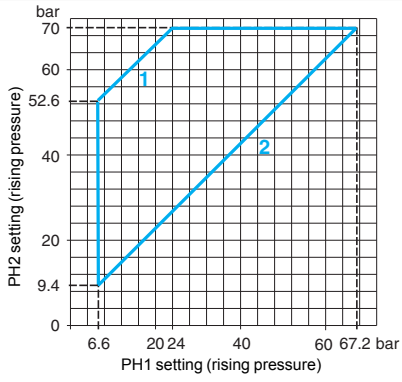
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 5 bar (72.5 psi) |
| | At high setting *(4)* | 9.5 bar (137.75 psi) |
| **Maximum permissible pressure** | Per cycle | 90 bar (1035 psi) |
| | Accidental | 160 bar (2320 psi) |
| **Destruction pressure** | | 320 bar (4640 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D070D1S12** becomes **XML D070D1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 1.5 bar (± 21.75 psi).*
*(4)* Deviation of the differential at high setting point for switches of the same size: ± 2 bar *(± 29 psi).*

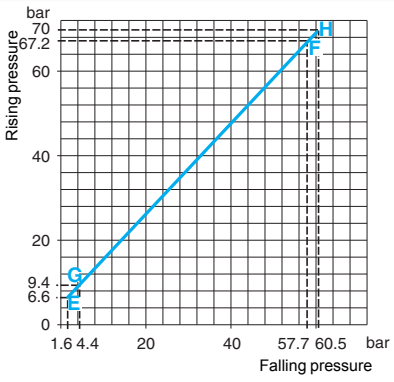
## Operating curves

### High setting tripping points of contacts 1 and 2

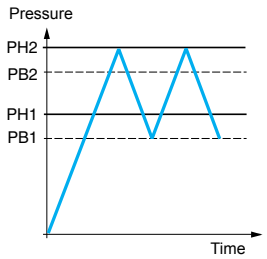



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



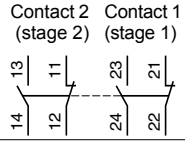

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

### Terminal model

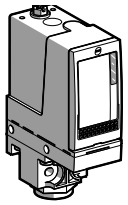


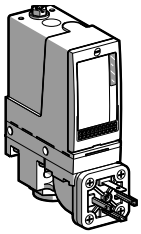

| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

# Electromechanical pressure switches
## OsiSense XM, type XML
Size 160 bar (2320 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** | **With setting scale**





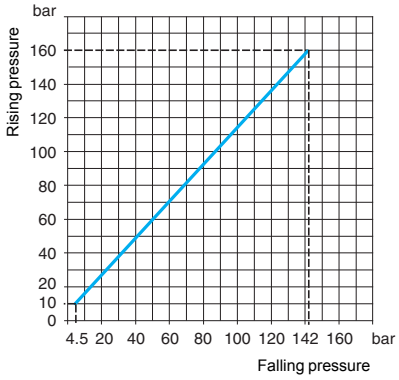
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **10…160 bar (145…2320 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, up to + 160°C | **XML A160D2S12** | **XML A160D2C11** |
| | Fresh water, sea water, up to + 160°C | **XML A160E2S12** | **XML A160E2C11** |
| | Corrosive fluids, air, up to + 160°C | **XML A160N2S12** | **XML A160N2C11** |
| **Weight (kg)** | | 0.750 | 0.780 |

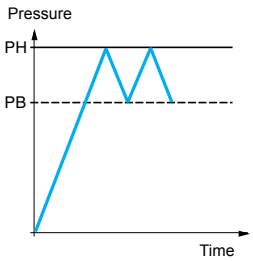
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 5.5 bar (79.75 psi) |
| | At high setting *(4)* | 18 bar (261 psi) |
| **Maximum permissible pressure** | Per cycle | 200 bar (2900 psi) |
| | Accidental | 360 bar (5220 psi) |
| **Destruction pressure** | | 720 bar (10,440 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A160D2S12** becomes **XML A160D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 1 bar (± 14.5 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 3 bar (± 43.5 psi).*

## Operating curves



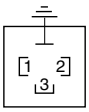

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

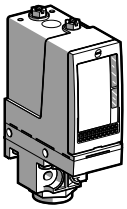
**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

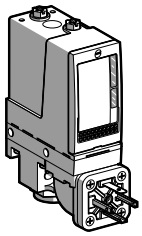
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches
## OsiSense XM, type XML
Size 160 bar (2320 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML B** | **With setting scale**





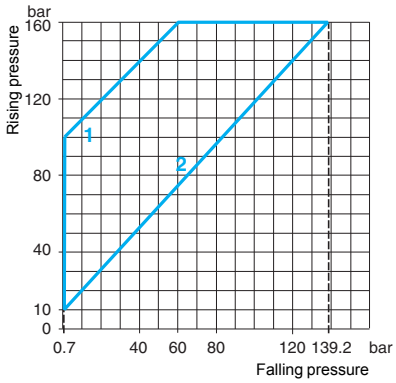
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **10…160 bar (145…2320 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2)* | Hydraulic oils, up to + 160°C | **XML B160D2S12** | **XML B160D2C11** |
| | Fresh water, sea water, up to + 160°C | **XML B160E2S12** | **XML B160E2C11** |
| | Corrosive fluids, air, up to + 160°C | **XML B160N2S12** | **XML B160N2C11** |
| **Weight (kg)** | | 0.750 | 0.780 |

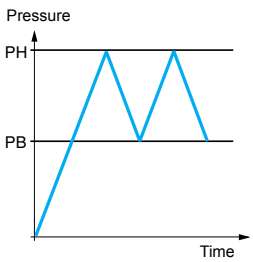
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 9.3 bar (134.85 psi) |
| | Min. at high setting *(4)* | 20.8 bar (301.6 psi) |
| | Max. at high setting | 100 bar (1450 psi) |
| **Maximum permissible pressure** | Per cycle | 200 bar (2900 psi) |
| | Accidental | 360 bar (5220 psi) |
| **Destruction pressure** | | 720 bar (10,440 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B160D2S12** becomes **XML B160D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: - 1.8 bar, + 1.5 bar (- 26.1 psi, + 21.75 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: - 1.9 bar, + 1.6 bar (- 27.55 psi, + 23.2 psi).*

## Operating curves




1 Maximum differential
2 Minimum differential

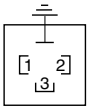
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

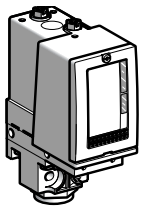
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 160 bar (2320 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **12…160 bar (174…2320 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

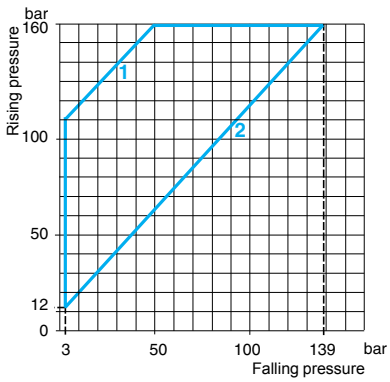
| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, up to + 160°C | **XML C160D2S12** |
| | Fresh water, sea water, up to + 160°C | **XML C160E2S12** |
| | Corrosive fluids, up to + 160°C | **XML C160N2S12** |
| **Weight (kg)** | | 0.750 |

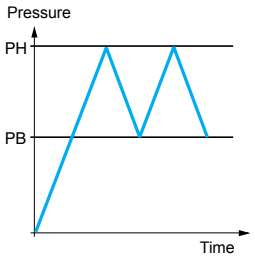
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 9 bar (130.5 psi) |
| | Min. at high setting *(3)* | 21 bar (304.5 psi) |
| | Max. at high setting | 110 bar (1590 psi) |
| **Maximum permissible pressure** | Per cycle | 200 bar (2900 psi) |
| | Accidental | 360 bar (5220 psi) |
| **Destruction pressure** | | 720 bar (10,440 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C160D2S12** becomes **XML C160D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.9 bar (± 13.05 psi).*

## Operating curves



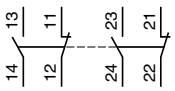




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

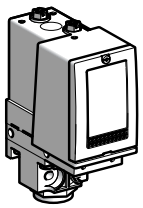
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 160 bar (2320 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Pressure switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **16.5…160 bar (239.25…2320 psi)** |
| | 1st stage switching point (PH1) | **10.5…154 bar (152.25…2233 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **6…83 bar (87…1203.5 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2)* | Hydraulic oils, up to + 160°C | **XML D160D1S12** |
| | Fresh water, sea water, up to + 160°C | **XML D160E1S12** |
| | Corrosive fluids, air, up to + 160°C | **XML D160N1S12** |
| **Weight (kg)** | | 0.750 |

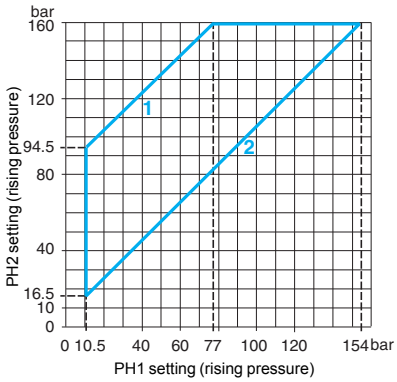
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 8.8 bar (127.6 psi) |
| | At high setting *(4)* | 20 bar (290 psi) |
| **Maximum permissible pressure** | Per cycle | 200 bar (2900 psi) |
| | Accidental | 360 bar (5220 psi) |
| **Destruction pressure** | | 720 bar (10,440 psi) |
| **Mechanical life** | | 6 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D160D1S12** becomes **XML D160D1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 1.5 bar (± 21.75 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 7 bar (± 101.5 psi).*

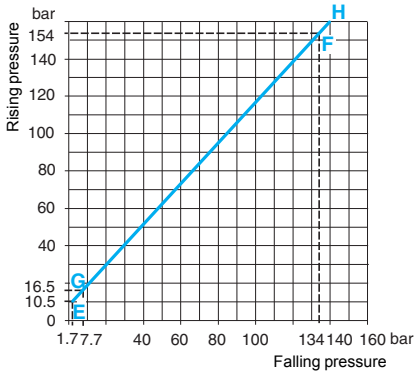
## Operating curves

### High setting tripping points of contacts 1 and 2

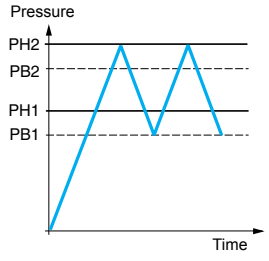



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



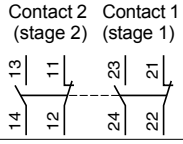

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**



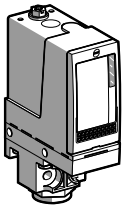

**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

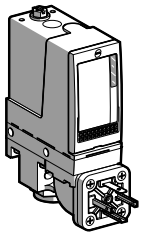
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches
## OsiSense XM, type XML
Size 300 bar (4350 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** | **With setting scale**





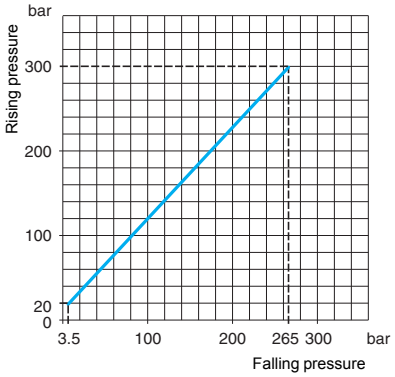
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **20…300 bar (290…4350 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2) (5)* | Hydraulic oils, up to + 160°C | **XML A300D2S12** | **XML A300D2C11** |
| | Fresh water, sea water, up to + 160°C | **XML A300E2S12** | **XML A300E2C11** |
| | Corrosive fluids, air, up to + 160°C | **XML A300N2S12** | **XML A300N2C11** |
| **Weight (kg)** | | 0.750 | 0.780 |

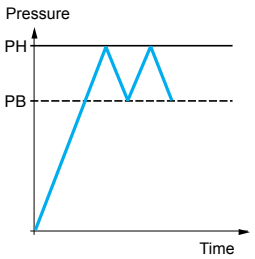
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 16.5 bar (239.25 psi) |
| | At high setting *(4)* | 35 bar (507.5 psi) |
| **Maximum permissible pressure** | Per cycle | 375 bar (5437.5 psi) |
| | Accidental | 675 bar (9787.5 psi) |
| **Destruction pressure** | | 1350 bar (19,575 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A300D2S12** becomes **XML A300D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 3 bar (± 43.5 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 6 bar (± 87 psi).*
*(5) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

## Operating curves



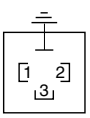

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

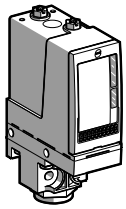
# Electromechanical pressure switches

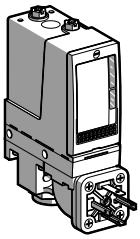
## OsiSense XM, type XML

Size 300 bar (4350 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML B** | **With setting scale**





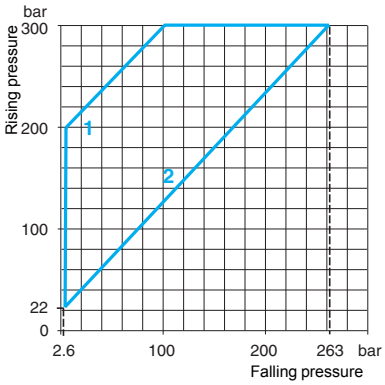
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **22…300 bar (319…4350 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2) (5)* | Hydraulic oils, up to + 160°C | **XML B300D2S12** | **XML B300D2C11** |
| | Fresh water, sea water, up to + 160°C | **XML B300E2S12** | **XML B300E2C11** |
| | Corrosive fluids, air, up to + 160°C | **XML B300N2S12** | **XML B300N2C11** |
| **Weight (kg)** | | 0.750 | 0.780 |

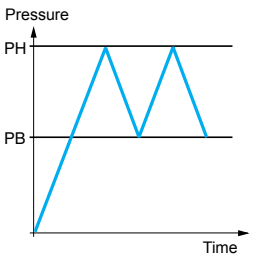
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 19.4 bar (281.3 psi) |
| | Min. at high setting *(4)* | 37 bar (536.5 psi) |
| | Max. at high setting | 200 bar (2900 psi) |
| **Maximum permissible pressure** | Per cycle | 375 bar (5437.5 psi) |
| | Accidental | 675 bar (9787.5 psi) |
| **Destruction pressure** | | 1350 bar (19,575 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B300D2S12** becomes **XML B300D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: - 1.5 bar, + 1.7 bar (- 21.75 psi, + 24.65 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: - 1 bar, + 4 bar (- 14.5 psi, + 58 psi).*
*(5) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

## Operating curves




1 Maximum differential
2 Minimum differential

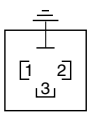
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

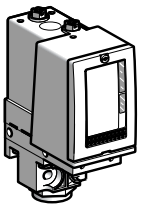
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 300 bar (4350 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **22…300 bar (319…4350 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

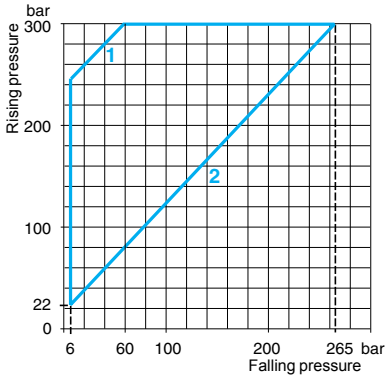
| | | |
|---|---|---|
| **Fluids controlled** *(2) (4)* | Hydraulic oils, up to + 160°C | **XML C300D2S12** |
| | Fresh water, sea water, up to + 160°C | **XML C300E2S12** |
| | Corrosive fluids, air, up to + 160°C | **XML C300N2S12** |
| **Weight (kg)** | | 0.750 |

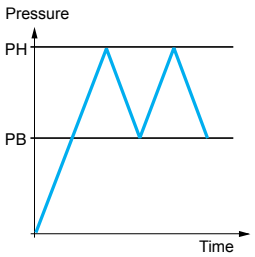
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 16 bar (232 psi) |
| | Min. at high setting *(3)* | 35 bar (507.5 psi) |
| | Max. at high setting | 240 bar (3480 psi) |
| **Maximum permissible pressure** | Per cycle | 375 bar (5437.5 psi) |
| | Accidental | 675 bar (9787.5 psi) |
| **Destruction pressure** | | 1350 bar (19,575 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C300D2S12** becomes **XML C300D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.9 bar (± 13.05 psi).*
*(4) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

## Operating curves



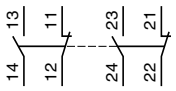




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

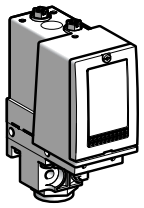
Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches
## OsiSense XM, type XML
Size 300 bar (4350 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Pressure switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **36…300 bar (522…4350 psi)** |
| | 1st stage switching point (PH1) | **25…289 bar (362.5…4190.5 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **11…189 bar (159.5…2740.5 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2) (5)* | Hydraulic oils, up to + 160°C | **XML D300D1S12** |
| | Fresh water, sea water, up to + 160°C | **XML D300E1S12** |
| | Corrosive fluids, air, up to + 160°C | **XML D300N1S12** |
| **Weight (kg)** | | 0.750 |

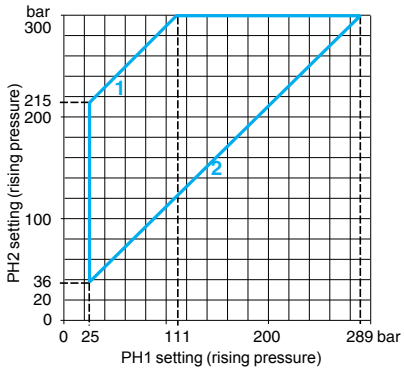
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 17 bar (246.5 psi) |
| | At high setting *(4)* | 42 bar (609 psi) |
| **Maximum permissible pressure** | Per cycle | 375 bar (5437.5 psi) |
| | Accidental | 675 bar (9787.5 psi) |
| **Destruction pressure** | | 1350 bar (19,575 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D300D1S12** becomes **XML D300D1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 2.5 bar (± 36.25 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 9 bar (± 130.5 psi).*
*(5) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

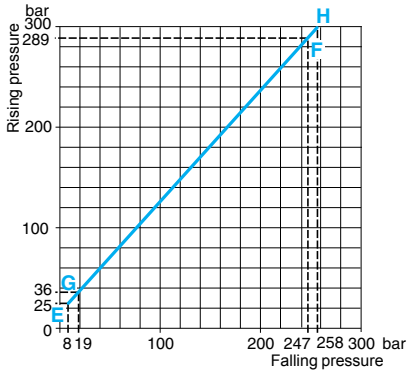
## Operating curves

### High setting tripping points of contacts 1 and 2

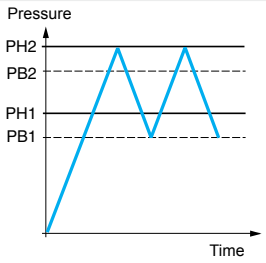



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



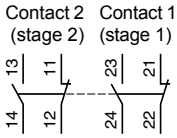

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**



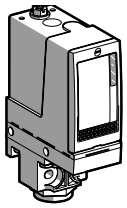

| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre. |

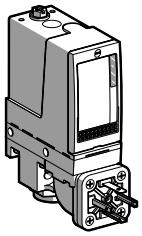
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches
## OsiSense XM, type XML
Size 500 bar (7250 psi)
Fixed differential, for detection of a single threshold
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



**Pressure switches type XML A** | **With setting scale**





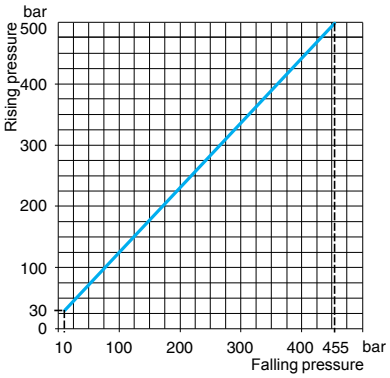
| | | | |
|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **30…500 bar (435…7250 psi)** | |
| **Electrical connection** | | Terminals | DIN connector |
| **References** *(1)* | | | |
| **Fluids controlled** *(2) (5)* | Hydraulic oils, up to + 160°C | **XML A500D2S12** | **XML A500D2C11** |
| | Fresh water, sea water, up to + 160°C | **XML A500E2S12** | **XML A500E2C11** |
| | Corrosive fluids, air, up to + 160°C | **XML A500N2S12** | **XML A500N2C11** |
| **Weight (kg)** | | 0.750 | 0.780 |

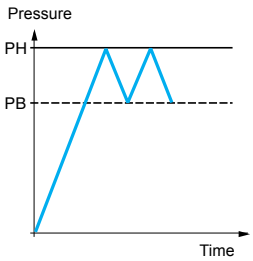
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH to give PB) | At low setting *(3)* | 20 bar (290 psi) |
| | At high setting *(4)* | 45 bar (652.5 psi) |
| **Maximum permissible pressure** | Per cycle | 625 bar (9062.5 psi) |
| | Accidental | 1125 bar (16,312.5 psi) |
| **Destruction pressure** | | 2250 bar (32,625 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML A500D2S12** becomes **XML A500D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 6 bar (± 87 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 10 bar (± 145 psi).*
*(5) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

## Operating curves



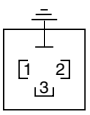

–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

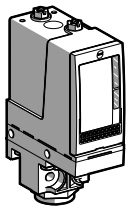
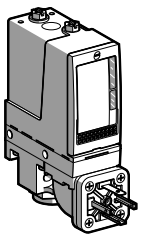
Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

# Electromechanical pressure switches

## OsiSense XM, type XML

Size 500 bar (7250 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact
Fluid connection G 1/4 (female)



| **Pressure switches type XML B** | **With setting scale** | |
|---|---|---|
| |  |  |
| **Adjustable range of switching point (PH)** (Rising pressure) | **30…500 bar (435…7250 psi)** | |
| **Electrical connection** | Terminals | DIN connector |

## References *(1)*

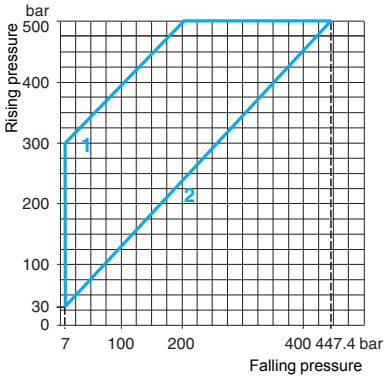
| | | | |
|---|---|---|---|
| **Fluids controlled** *(2) (5)* | Hydraulic oils, up to + 160°C | **XML B500D2S12** | **XML B500D2C11** |
| | Fresh water, sea water, up to + 160°C | **XML B500E2S12** | **XML B500E2C11** |
| | Corrosive fluids, air, up to + 160°C | **XML B500N2S12** | **XML B500N2C11** |
| **Weight (kg)** | | 0.750 | 0.780 |

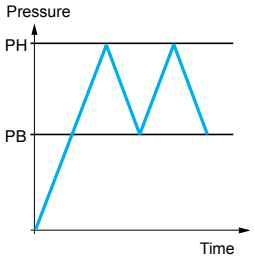
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 23 bar (333.5 psi) |
| | Min. at high setting *(4)* | 52.6 bar (762.7 psi) |
| | Max. at high setting | 300 bar (4350 psi) |
| **Maximum permissible pressure** | Per cycle | 625 bar (9062.5 psi) |
| | Accidental | 1125 bar (16,312.5 psi) |
| **Destruction pressure** | | 2250 bar (32,625 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Connector type for connector models** | | DIN 43650 A, 4-pin male. For suitable female connector, see page 2/130 |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML B500D2S12** becomes **XML B500D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: - 2.6 bar, + 3.8 bar (- 37.7 psi, + 55.1 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: - 14.8 bar, + 11.2 bar (- 214.6 psi, + 162.4 psi).*
*(5) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

## Operating curves




1 Maximum differential
2 Minimum differential

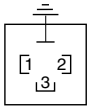
–– Adjustable value

## Connection

**Terminal model**


**Connector model**

**Pressure switch connector pin view**




1 → 11 and 13
2 → 12
3 → 14

**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

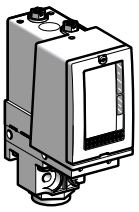
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 500 bar (7250 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2 CO single-pole contacts
Fluid connection G 1/4 (female)



| **Pressure switches type XML C** | **With setting scale** |
|---|---|



| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **30…500 bar (435…7250 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

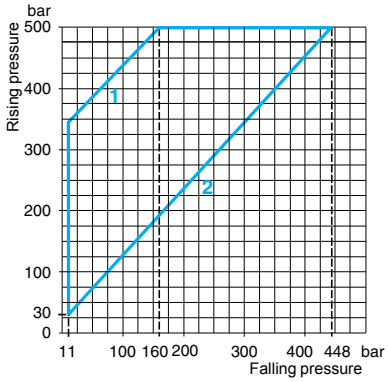
| | | |
|---|---|---|
| **Fluids controlled** *(2) (4)* | Hydraulic oils, up to + 160°C | **XML C500D2S12** |
| | Fresh water, sea water, up to + 160°C | **XML C500E2S12** |
| | Corrosive fluids, air, up to + 160°C | **XML C500N2S12** |
| **Weight (kg)** | | 0.750 |

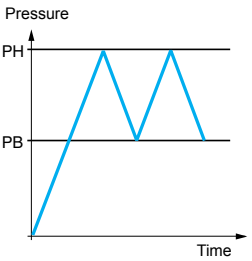
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting *(3)* | 19 bar (275.5 psi) |
| | Min. at high setting *(3)* | 52 bar (754 psi) |
| | Max. at high setting | 340 bar (4930 psi) |
| **Maximum permissible pressure** | Per cycle | 625 bar (9062.5 psi) |
| | Accidental | 1125 bar (16,312.5 psi) |
| **Destruction pressure** | | 2250 bar (32,625 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML C500D2S12** becomes **XML C500D2S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.9 bar (± 13.05 psi).*
*(4) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

## Operating curves



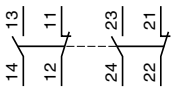




1 Maximum differential
2 Minimum differential

–– Adjustable value

## Connection

**Terminal model**




**Other versions**

Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

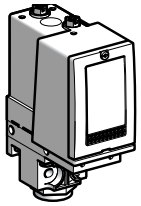
# Electromechanical pressure switches

## OsiSense XM, type XML

Size 500 bar (7250 psi)
Dual stage, fixed differential, for detection at each threshold
Switches with 2 CO single-pole contacts (one per stage)
Fluid connection G 1/4 (female)



**Pressure switches type XML D** | **Without setting scale**



| | | |
|---|---|---|
| **Adjustable range of each switching point** (Rising pressure) | 2nd stage switching point (PH2) | **41…500 bar (594.5…7250 psi)** |
| | 1st stage switching point (PH1) | **25…484 bar (362.5…7018 psi)** |
| **Spread between 2 stages (PH2 - PH1)** | | **16…244 bar (232…3538 psi)** |
| **Electrical connection** | | Terminals |

## References *(1)*

| | | |
|---|---|---|
| **Fluids controlled** *(2) (5)* | Hydraulic oils, up to + 160°C | **XML D500D1S12** |
| | Fresh water, sea water, up to + 160°C | **XML D500E1S12** |
| | Corrosive fluids, air, up to + 160°C | **XML D500N1S12** |
| **Weight (kg)** | | 0.750 |

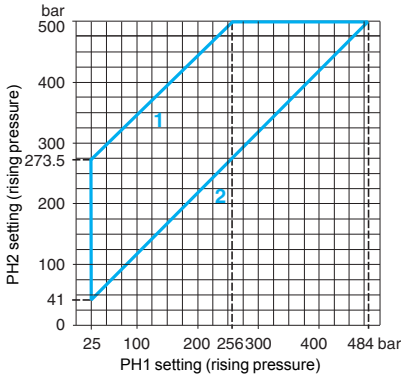
## Complementary characteristics not shown under general characteristics (page 2/77)

| | | |
|---|---|---|
| **Natural differential** (subtract from PH1/PH2 to give PB1/PB2) | At low setting *(3)* | 21 bar (304.5 psi) |
| | At high setting *(4)* | 65 bar (942.5 psi) |
| **Maximum permissible pressure** | Per cycle | 625 bar (9062.5 psi) |
| | Accidental | 1125 bar (16,312.5 psi) |
| **Destruction pressure** | | 2250 bar (32,625 psi) |
| **Mechanical life** | | 3 x $10^6$ operating cycles |
| **Cable entry for terminal models** | | 1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm |
| **Pressure switch type** | | Piston |

*(1) For 1 entry tapped for n° 13 cable gland, replace **S12** by **S11** (example: **XML D500D1S12** becomes **XML D500D1S11**).*
*(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.*
*(3) Deviation of the differential at low setting point for switches of the same size: ± 3 bar (± 43.5 psi).*
*(4) Deviation of the differential at high setting point for switches of the same size: ± 10 bar (± 145 psi).*
*(5) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

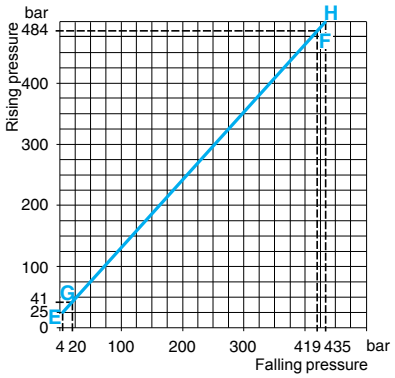
## Operating curves

### High setting tripping points of contacts 1 and 2

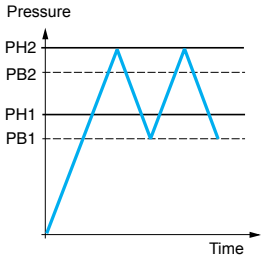



1 Maximum differential
2 Minimum differential

### Natural differential of contacts 1 and 2



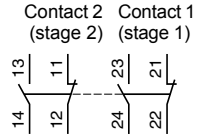

EF Contact 1 (stage 1)
GH Contact 2 (stage 2)




–– Adjustable value
--- Non adjustable value

## Connection

**Terminal model**




**Other versions** — Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Accessories: page 2/130
Dimensions: pages 2/131 to 2/133

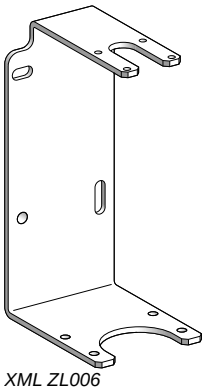
# Electromechanical pressure and vacuum switches

## OsiSense XM

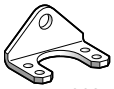
Types XML A, XML B, XML C and XML D

Accessories and replacement parts

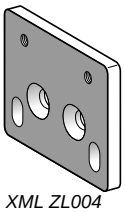


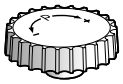


XML ZL006



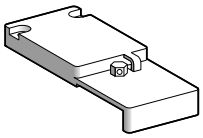
XML ZL002



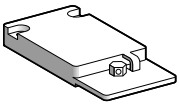


XML ZL003

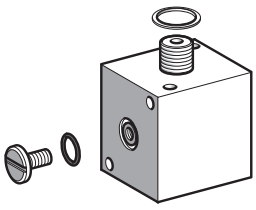
XML ZL004



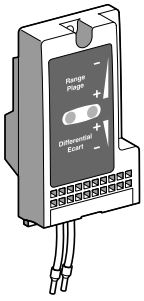
XML ZL001



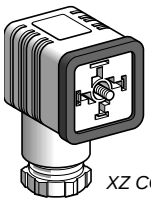
XML ZL011



XML ZL005



XML ZA●●●,
XML ZB●●●



XML ZL010

XZ CC43FCP40B

## Accessories for pressure switches and vacuum switches

| Description | | Specific characteristics | For use with switches | Unit reference | Weight kg |
|---|---|---|---|---|---|
| **Rear fixing bracket** for vibrations > 2 gn | | – | XML●L35<br>XML●001 | **XML ZL006** | 0.230 |
| **Additional top support bracket** for vibrations > 4 gn | | – | XML AM01<br>XML●M05<br>XML A004<br>XML●010… XML●500 | **XML ZL002** | 0.020 |
| **Knurled adjustment knob, Ø 36 mm** fits over adjustment screw(s) to facilitate setting | | – | All models | **XML ZL003** | 0.010 |
| **Fixing plate** for replacing an XMJ A or XMG B switch by an XML switch | | – | XML AM01<br>XML●M05<br>XML A004<br>XML●010… XML●500 | **XML ZL004** | 0.110 |
| **Lead sealable protective cover** to prevent unauthorised access to adjustment screws and fixing screw of switch cover | | – | XML A<br>XML B | **XML ZL001** | 0.035 |
| **Lead sealable protective cover** to prevent unauthorised access to adjustment screws | | – | All models | **XML ZL011** | 0.030 |
| **Indicator modules and associated covers, 2 LEDs** (orange and green) | Without setting scale | ∿ or ⎓ 24/48 V | XML A/B | **XML ZZ024** | 0.090 |
| | | ∿ 110/240 V | XML A/B | **XML ZZ120** | 0.090 |
| | With setting scale | ∿ or ⎓ 24/48 V | XML A | **XML ZA024** | 0.090 |
| | | | XML B | **XML ZB024** | 0.090 |
| | | ∿ 110/240 V | XML A | **XML ZA120** | 0.090 |
| | | | XML B | **XML ZB120** | 0.090 |
| **Hydraulic block** for base mounting directly onto fluid manifold | | – | All models | **XML ZL005** | 0.240 |
| **Female DIN 43650 A connector** | | – | XML●●●●●●C11 | **XZ CC43FCP40B** | 0.035 |
| **Adaptor, G 1/4"/G 3/8" male/female** | | – | All models | **XML ZL012** | 0.130 |

## Replacement parts

| | | | | |
|---|---|---|---|---|
| **Sealing gasket** | For sizes ⩾ 300 bar (XML A/B/C/D) | | **XML ZL010** | 0.015 |
| **Diaphragms** | – | XML●S35 | **XML ZL013** | 0.060 |
| | | XML ●S02 | **XML ZL014** | 0.040 |
| | | XML ●S04 | **XML ZL015** | 0.030 |

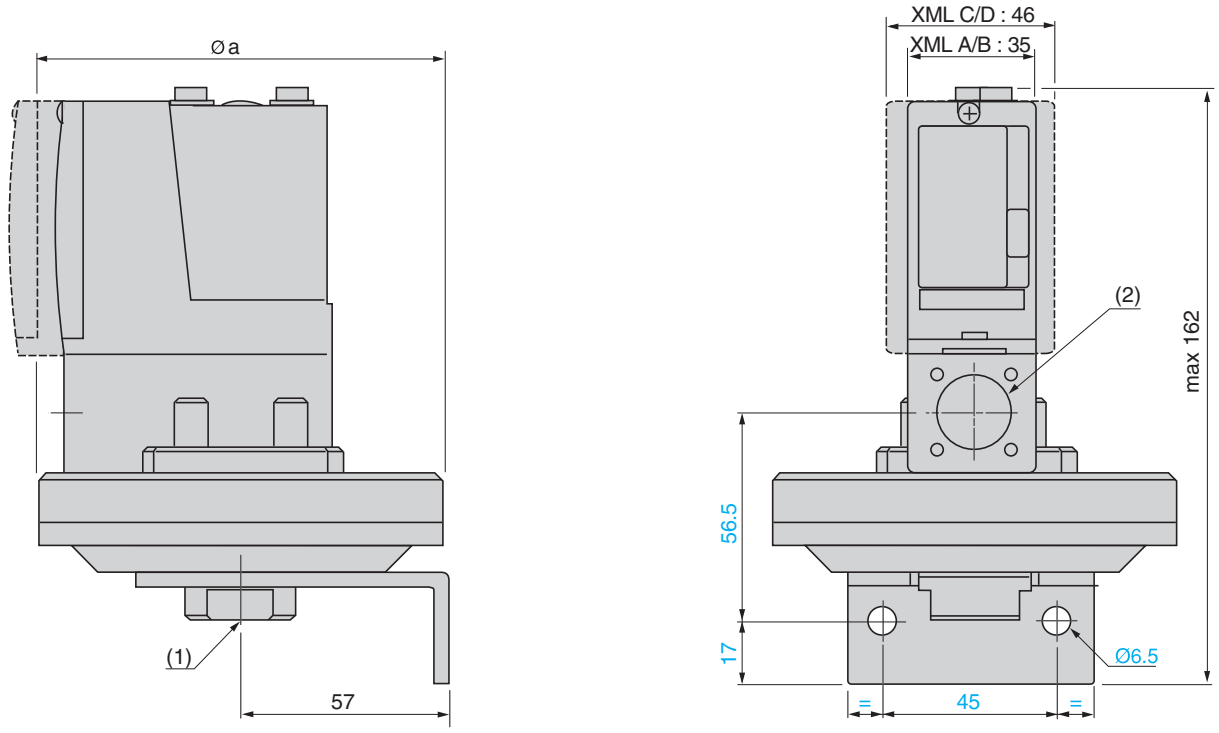
# Electromechanical pressure and vacuum switches

## OsiSense XM

Types XML A, XML B, XML C and XML D

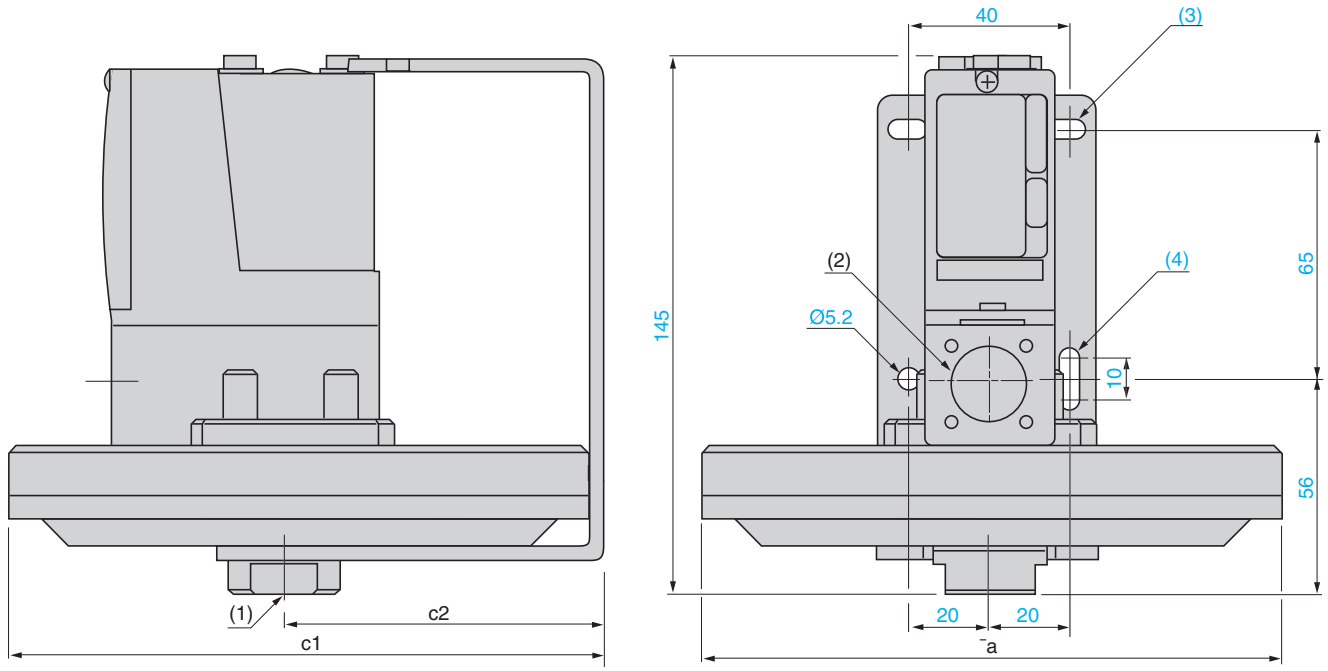


**XML●L35, XML●001, XML●S**




*(1) 1 fluid entry, tapped G 1/4 (BSP female)*
*(2) 1 electrical connections entry, tapped M20 x 1.5 or Pg 13.5*

**XML BM03, XML BL05**




*(1) 1 fluid entry, tapped G 1/4 (BSP female)*
*(2) 1 electrical connections entry, tapped M20 x 1.5 or Pg 13.5*
*(3) 2 elongated holes Ø 10.2 x 5.2*
*(4) 1 elongated hole Ø 15.2 x 5.2*

| XML | Øa | c1 | c2 |
|---|---|---|---|
| **BM03** | 150 | 155.5 | 80.5 |
| **BL05** | 200 | 204 | 104 |
| **●L35, ●001** | 110 | – | – |
| **●S35, ●S02, ●S04** | 110 | – | – |
| **●S10, ●S20** | 86 | – | – |

Characteristics:
pages 2/77 to 2/129

References:
pages 2/78 to 2/129

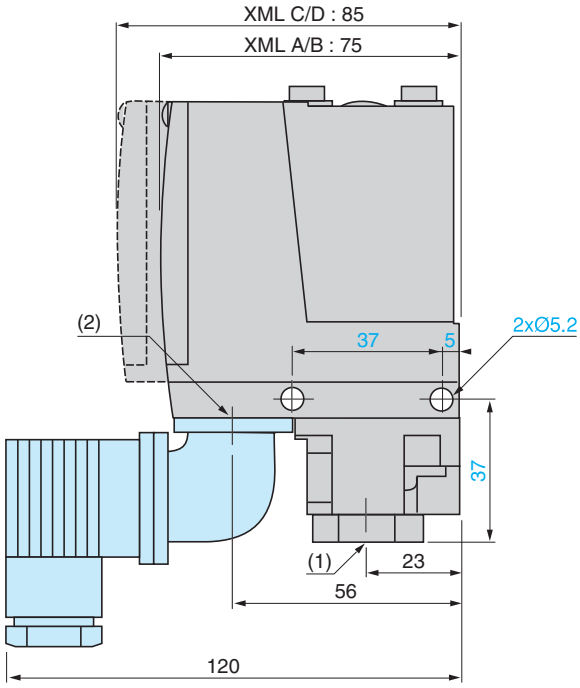
# Electromechanical pressure and vacuum switches

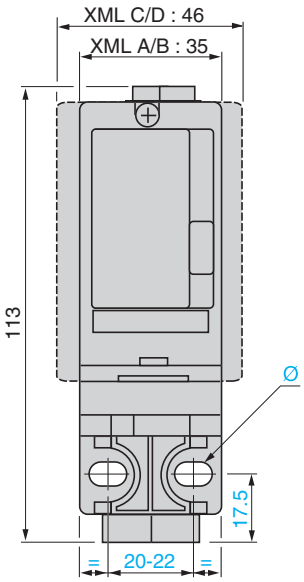
## OsiSense XM

Types XML A, XML B, XML C and XML D



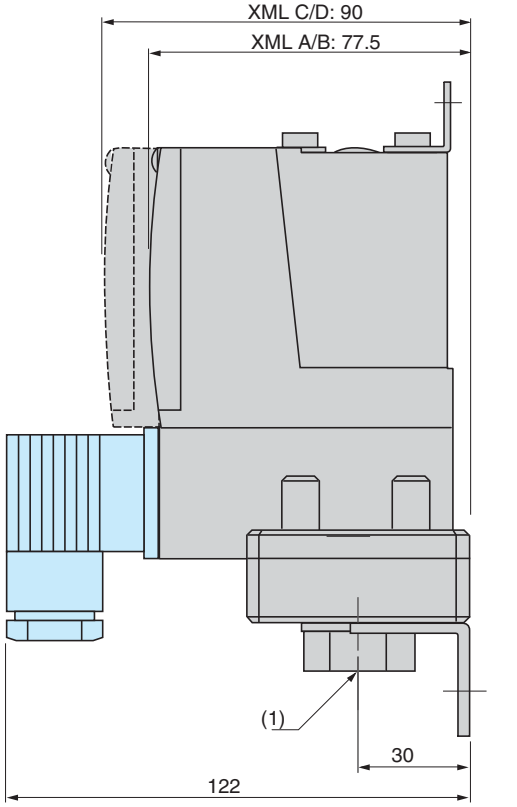
**XML AM01, XML BM05, XML CM05, XML A004, XML ●010…500**

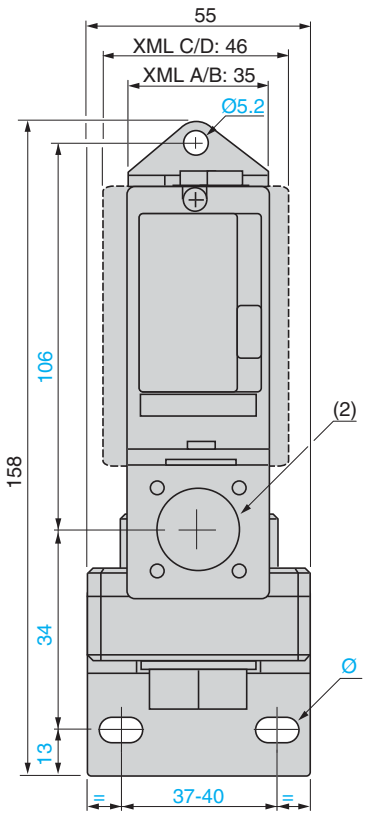



*(1) 1 fluid entry, tapped G 1/4 (BSP female)*
*(2) 1 electrical connections entry, tapped M20 x 1.5 or Pg 13.5*
Ø: 2 elongated holes Ø 5.2 x 6.7

**XML ●M02, XML ●002, XML B004, XML C004, XML D004**




*(1) 1 fluid entry, tapped G 1/4 (BSP female)*
*(2) 1 electrical connections entry, tapped M20 x 1.5 or Pg 13.5*
Ø: 2 elongated holes Ø 10.2 x 5.2

Characteristics:
pages 2/77 to 2/129

References:
pages 2/78 to 2/129

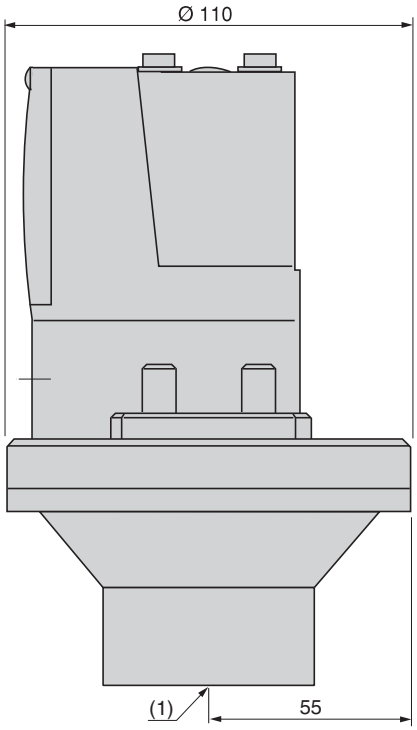
# Electromechanical pressure and vacuum switches

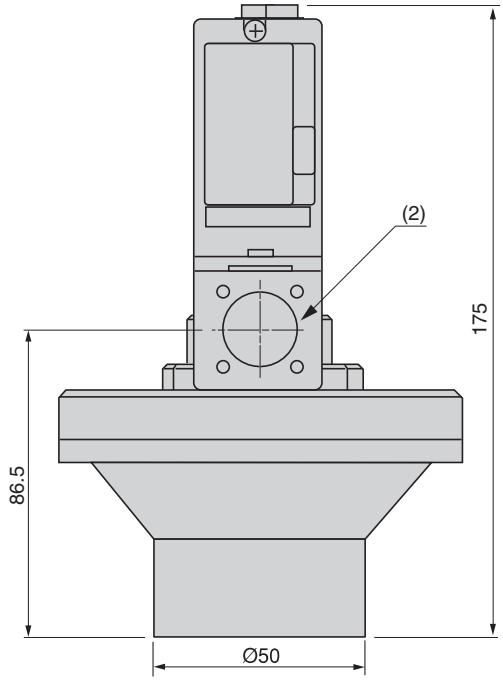
## OsiSense XM

### Types XML A, XML B, XML C and XML D



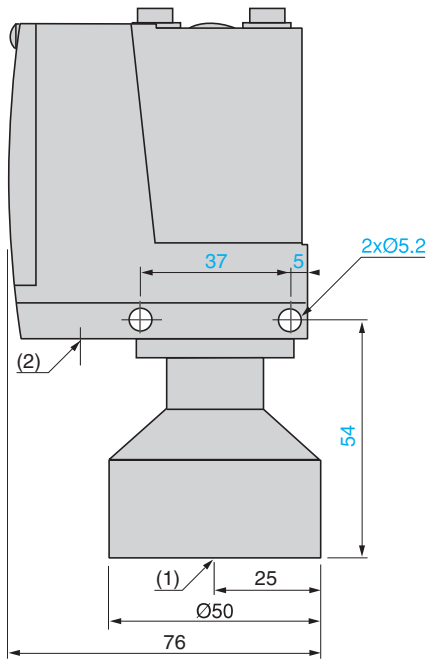
**XML BL35P, XML B001P**

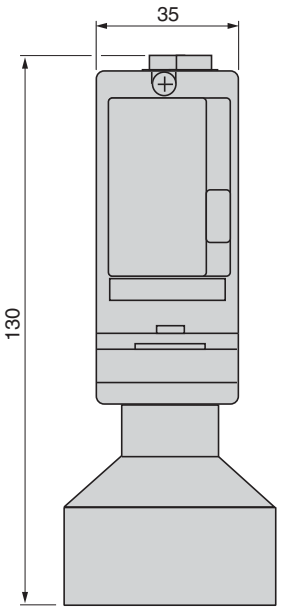



*(1) 1 fluid entry, tapped G 1¼ (BSP female)*
*(2) 1 electrical connections entry, tapped M20 x 1.5 or Pg 13.5*

**XML BM05P, XML A004P, XML ●010P, XML ●020P, XML ●035P**




*(1) 1 fluid entry, tapped G 1¼ (BSP female)*
*(2) 1 electrical connections entry, tapped M20 x 1.5 or Pg 13.5*

Characteristics:
pages 2/77 to 2/129

References:
pages 2/78 to 2/129

# Electromechanical pressure and vacuum switches

## OsiSense XM

Equivalent model references of pressure and vacuum switches XML for previous range switches XM2 JM, XMJ and XMG



### Pressure and vacuum switches with fixed differential

| Old XM2 JM | New XML A |
|---|---|
| XM2 JM091 | XML AM01V2S11 |
| XM2 JM002 | XML A002A2S11 |
| XM2 JM0025 | XML A002C2S11 |
| XM2 JM004 | XML A004A2S11 |
| XM2 JM0045 | XML A004C2S11 |
| XM2 JM0046 | XML A004P2S11 |
| XM2 JM012 *(1)* | XML A010A2S11 |
| XM2 JM012 *(1)* | XML A020A2S11 |
| XM2 JM0125 *(1)* | XML A010C2S11 |
| XM2 JM0125 *(1)* | XML A020C2S11 |
| XM2 JM0126 *(1)* | XML A010P2S11 |
| XM2 JM0126 *(1)* | XML A020P2S11 |
| XM2 JM030 *(2)* | XML A020A2S11 |
| XM2 JM030 *(2)* | XML A035A2S11 |
| XM2 JM0304 *(2)* | XML A020A2S11 |
| XM2 JM0304 *(2)* | XML A035A2S11 |
| XM2 JM050 *(3)* | XML A035A2S11 |
| XM2 JM050 *(3)* | XML A070D2S11 |
| XM2 JM0504 *(3)* | XML A035A2S11 |
| XM2 JM0504 *(3)* | XML A070E2S11 |
| XM2 JM160 | XML A160D2S11 |
| XM2 JM1604 | XML A160E2S11 |
| XM2 JM300 | XML A300D2S11 |
| XM2 JM3004 | XML A300E2S11 |
| XM2 JM500 | XML A500D2S11 |
| XM2 JM5004 | XML A500E2S11 |
| XM2 JM0912 | XML AM01V2S11 |
| XM2 JM0022 | XML A002B2S11 |
| XM2 JM00225 | XML A002C2S11 |
| XM2 JM0042 | XML A004B2S11 |
| XM2 JM00425 | XML A004C2S11 |
| XM2 JM00426 | XML A004P2S11 |
| XM2 JM0122 | XML A010B2S11 |
| XM2 JM01225 | XML A010C2S11 |
| XM2 JM01226 | XML A010P2S11 |
| XM2 JM0302 | XML A035B2S11 |
| XM2 JM03024 | XML A035B2S11 |
| XM2 JM0502 | XML A070D2S11 |
| XM2 JM05024 | XML A070E2S11 |
| XM2 JM1602 | XML A160D2S11 |
| XM2 JM16024 | XML A160E2S11 |
| XM2 JM3002 | XML A300D2S11 |
| XM2 JM30024 | XML A300E2S11 |
| XM2 JM5002 | XML A500D2S11 |
| XM2 JM50024 | XML A500E2S11 |

| Old XMJ A | New XML A |
|---|---|
| XMJ A091 | XML AM01V2S11 |
| XMJ A0915 | XML AM01T2S11 |
| XMJ A0037 | XML A004A2S11 |
| XMJ A003 | XML A004A2S11 |
| XMJ A00375 | XML A004C2S11 |
| XMJ A0035 | XML A004C2S11 |
| XMJ A0127 *(1)* | XML A010A2S11 |
| XMJ A0127 *(1)* | XML A020A2S11 |
| XMJ A012 *(1)* | XML A010A2S11 |
| XMJ A012 *(1)* | XML A020A2S11 |
| XMJ A01275 *(1)* | XML A010C2S11 |
| XMJ A01275 *(1)* | XML A020C2S11 |
| XMJ A0125 *(1)* | XML A010C2S11 |
| XMJ A0125 *(1)* | XML A020C2S11 |
| XMJ A020 | XML A020A2S11 |
| XMJ A0207 | XML A020A2S11 |
| XMJ A02075 | XML A020C2S11 |
| XMJ A0205 | XML A020C2S11 |
| XMJ A0307 *(2)* | XML A020A2S11 |
| XMJ A0307 *(2)* | XML A035A2S11 |
| XMJ A03074 *(2)* | XML A020A2S11 |
| XMJ A03074 *(2)* | XML A035A2S11 |
| XMJ A03078 *(2)* | XML A020A2S11 |
| XMJ A03078 *(2)* | XML A035A2S11 |
| XMJ A030 *(2)* | XML A020A2S11 |
| XMJ A030 *(2)* | XML A035A2S11 |
| XMJ A0304 *(2)* | XML A020A2S11 |
| XMJ A0304 *(2)* | XML A035A2S11 |
| XMJ A0308 *(2)* | XML A020A2S11 |
| XMJ A0308 *(2)* | XML A035A2S11 |
| XMJ A03075 *(2)* | XML A020C2S11 |
| XMJ A03075 *(2)* | XML A035C2S11 |
| XMJ A0305 *(2)* | XML A020C2S11 |
| XMJ A0305 *(2)* | XML A035C2S11 |
| XMJ A050 *(3)* | XML A035A2S11 |
| XMJ A050 *(3)* | XML A070D2S11 |
| XMJ A050 *(4)* | XML A070E2S11 |
| XMJ A050 *(4)* | XML A070N2S11 |
| XMJ A0507 *(3)* | XML A035A2S11 |
| XMJ A0507 *(3)* | XML A070D2S11 |
| XMJ A0507 *(4)* | XML A070E2S11 |
| XMJ A0507 *(4)* | XML A070N2S11 |
| XMJ A0707 | XML A070D2S11 |
| XMJ A070 | XML A070D2S11 |
| XMJ A07074 | XML A070E2S11 |
| XMJ A0704 | XML A070E2S11 |
| XMJ A07075 | XML A070N2S11 |
| XMJ A07078 | XML A070N2S11 |
| XMJ A0705 | XML A070N2S11 |
| XMJ A0708 | XML A070N2S11 |
| XMJ A115 *(4)* *(5)* | XML A070D2S11 |
| XMJ A115 *(4)* *(5)* | XML A070E2S11 |
| XMJ A115 *(4)* *(5)* | XML A070N2S11 |
| XMJ A115 *(4)* *(5)* | XML A160D2S11 |
| XMJ A115 *(4)* *(5)* | XML A160E2S11 |
| XMJ A115 *(4)* *(5)* | XML A160N2S11 |
| XMJ A1157 *(4)* *(5)* | XML A070D2S11 |
| XMJ A1157 *(4)* *(5)* | XML A070E2S11 |
| XMJ A1157 *(4)* *(5)* | XML A070N2S11 |
| XMJ A1157 *(4)* *(5)* | XML A160D2S11 |
| XMJ A1157 *(4)* *(5)* | XML A160E2S11 |
| XMJ A1157 *(4)* *(5)* | XML A160N2S11 |
| XMJ A1607 | XML A160D2S11 |
| XMJ A160 | XML A160D2S11 |
| XMJ A16074 | XML A160E2S11 |
| XMJ A1604 | XML A160E2S11 |
| XMJ A16075 | XML A160N2S11 |
| XMJ A16078 | XML A160N2S11 |
| XMJ A1605 | XML A160N2S11 |
| XMJ A1608 | XML A160N2S11 |
| XMJ A3007 | XML A300D2S11 |
| XMJ A300 | XML A300D2S11 |
| XMJ A30074 | XML A300E2S11 |
| XMJ A3004 | XML A300E2S11 |
| XMJ A30075 | XML A300N2S11 |
| XMJ A30078 | XML A300N2S11 |
| XMJ A3005 | XML A300N2S11 |
| XMJ A3008 | XML A300N2S11 |

## Pressure and vacuum switches with fixed differential (continued)

| Old XMJ A | New XML A | Old XMJ A | New XML A |
|---|---|---|---|
| XMJ A5007 | XML A500D2S11 | XMJ A50075 | XML A500N2S11 |
| XMJ A500 | XML A500D2S11 | XMJ A50078 | XML A500N2S11 |
| XMJ A50074 | XML A500E2S11 | XMJ A5005 | XML A500N2S11 |
| XMJ A5004 | XML A500E2S11 | XMJ A5008 | XML A500N2S11 |

## Pressure and vacuum switches with adjustable differential

| Old XMG B | New XML B | Old XMG B | New XML C | Old XMG B | New XML B | Old XMG B | New XML C |
|---|---|---|---|---|---|---|---|
| XMG B091 | XML BM02V2S11 | XMG B0912 | XML CM02V2S11 | XMG B0146 *(1)* | XML B020P2S11 | XMG B01462 | *(8)* |
| XMG B092 | XML BM02V2S11 | XMG B0922 | XML CM02V2S11 | XMG B0286 *(6)* | XML B020P2S11 | XMG B02862 | *(8)* |
| XMG B093 | XML BM02V2S11 *(8)* | XMG B0932 | XML CM02V2S11 | XMG B0286 *(6)* | XML B035P2S11 | XMG B02862 | *(8)* |
| XMG B0911 | XML BM02T2S11 | XMG B09112 | XML CM02T2S11 | XMG B070 | XML B070D2S11 | XMG B0702 | XML C070D2S11 |
| XMG B0921 | XML BM02T2S11 | XMG B09212 | XML CM02T2S11 | XMG B140 | XML B160D2S11 | XMG B1402 | XML C160D2S11 |
| XMG B0917 | XML BM02T2S11 | XMG B09172 | XML CM02T2S11 | XMG B280 | XML B300D2S11 | XMG B2802 | XML C300D2S11 |
| XMG B0927 | XML BM02T2S11 | XMG B09272 | XML CM02T2S11 | XMG B500 | XML B500D2S11 | XMG B5002 | XML C500D2S11 |
| XMG B001 *(4)* | XML BL35R2S11 | XMG B0012 *(4)* | XML CL35R2S11 | XMG B0704 | XML B070E2S11 | XMG B07042 | XML C070E2S11 |
| XMG B001 *(4)* | XML BL35S2S11 | XMG B0012 *(4)* | XML CL35S2S11 | XMG B1404 | XML B160E2S11 | XMG B14042 | XML C160E2S11 |
| XMG B002 | XML B002A2S11 | XMG B0022 | XML C002A2S11 | XMG B2804 | XML B300E2S11 | XMG B28042 | XML C300E2S11 |
| XMG B003 | XML B004A2S11 | XMG B0032 | XML C004A2S11 | XMG B5004 | XML B500E2S11 | XMG B50042 | XML C500E2S11 |
| XMG B008 | XML B010A2S11 | XMG B0082 | XML C010A2S11 | XMG B0708 | XML B070N2S11 | XMG B07082 | XML C070N2S11 |
| XMG B014 *(1)* | XML B010A2S11 | XMG B0142 *(1)* | XML C010A2S11 | XMG B1408 | XML B160N2S11 | XMG B14082 | XML C160N2S11 |
| XMG B014 *(1)* | XML B020A2S11 | XMG B0142 *(1)* | XML C020A2S11 | XMG B2808 | XML B300N2S11 | XMG B28082 | XML C300N2S11 |
| XMG B028 *(6)* | XML B020A2S11 | XMG B0282 *(6)* | XML C020A2S11 | XMG B5008 | XML B500N2S11 | XMG B50082 | XML C500N2S11 |
| XMG B028 *(6)* | XML B035A2S11 | XMG B0282 *(6)* | XML C035A2S11 | XMG B0701 *(4)* | XML B070D2S11 | XMG B07012 *(4)* | XML C070D2S11 |
| XMG B0011 *(4)* | XML BL35R2S11 | XMG B00112 *(4)* | XML CL35R2S11 | XMG B0701 *(4)* | XML B070E2S11 | XMG B07012 *(4)* | XML C070E2S11 |
| XMG B0011 *(4)* | XML BL35S2S11 | XMG B00112 *(4)* | XML CL35S2S11 | XMG B1401 *(4)* | XML B160D2S11 | XMG B14012 *(4)* | XML C160D2S11 |
| XMG B0021 | XML B002B2S11 | XMG B00212 | XML C002B2S11 | XMG B1401 *(4)* | XML B160E2S11 | XMG B14012 *(4)* | XML C160E2S11 |
| XMG B0031 | XML B004B2S11 | XMG B00312 | XML C004B2S11 | XMG B2801 *(4)* | XML B300D2S11 | XMG B28012 *(4)* | XML C300D2S11 |
| XMG B0081 | XML B010B2S11 | XMG B00812 | XML C010B2S11 | XMG B2801 *(4)* | XML B300E2S11 | XMG B28012 *(4)* | XML C300E2S11 |
| XMG B0141 *(1)* | XML B010B2S11 | XMG B01412 *(1)* | XML C010B2S11 | XMG B5001 *(4)* | XML B500D2S11 | XMG B50012 *(4)* | XML C500D2S11 |
| XMG B0141 *(1)* | XML B020B2S11 | XMG B01412 *(1)* | XML C020B2S11 | XMG B5001 *(4)* | XML B500E2S11 | XMG B50012 *(4)* | XML C500E2S11 |
| XMG B0281 *(6)* | XML B020B2S11 | XMG B02812 *(6)* | XML C020B2S11 | XMG B0707 | XML B070N2S11 | XMG B07072 | XML C070N2S11 |
| XMG B0281 *(6)* | XML B035B2S11 | XMG B02812 *(6)* | XML C035B2S11 | XMG B1407 | XML B160N2S11 | XMG B14072 | XML C160N2S11 |
| XMG B0017 | XML BL35S2S11 | XMG B00172 | XML CL35S2S11 | XMG B2807 | XML B300N2S11 | XMG B28072 | XML C300N2S11 |
| XMG B0027 | XML B002C2S11 | XMG B00272 | XML C002C2S11 | XMG B5007 | XML B500N2S11 | XMG B50072 | XML C500N2S11 |
| XMG B0037 | XML B004C2S11 | XMG B00372 | XML C004C2S11 | XMG B0018 | XML BS35R2S11 | XMG B00182 | XML CS35R2S11 |
| XMG B0087 | XML B010C2S11 | XMG B00872 | XML C010C2S11 | XMG B0028 | XML BS02B2S11 | XMG B00282 | XML CS02B2S11 |
| XMG B0147 *(1)* | XML B010C2S11 | XMG B01472 *(1)* | XML C010C2S11 | XMG B0038 | XML BS04B2S11 | XMG B00382 | XML CS04B2S11 |
| XMG B0147 *(1)* | XML B020C2S11 | XMG B01472 *(1)* | XML C020C2S11 | XMG B0088 | XML BS10A2S11 *(7)* | XMG B00882 | XML CS10A2S11 *(7)* |
| XMG B0287 *(6)* | XML B020C2S11 | XMG B02872 *(6)* | XML C020C2S11 | XMG B0148 *(1)* | XML BS10A2S11 *(7)* | XMG B01482 *(1)* | XML CS10A2S11 *(7)* |
| XMG B0287 *(6)* | XML B035C2S11 | XMG B02872 *(6)* | XML C035C2S11 | XMG B0148 *(1)* | XML BS20A2S11 *(7)* | XMG B01482 *(1)* | XML CS20A2S11 *(7)* |
| XMG B0016 | XML BL35P2S11 | XMG B00162 | *(8)* | XMG B0120 *(5)* *(4)* | XML B070D2S11 | XMG B01202 *(5)* *(4)* | XML C070D2S11 |
| XMG B0026 | XML BM05P2S11 | XMG B00262 | *(8)* | XMG B0120 *(5)* *(4)* | XML B070E2S11 | XMG B01202 *(5)* *(4)* | XML C070E2S11 |
| XMG B0036 | XML BM05P2S11 | XMG B00362 | *(8)* | XMG B0120 *(5)* *(4)* | XML B160D2S11 | XMG B01202 *(5)* *(4)* | XML C160D2S11 |
| XMG B0086 | XML B010P2S11 | XMG B00862 | *(8)* | XMG B0120 *(5)* *(4)* | XML B160E2S11 | XMG B01202 *(5)* *(4)* | XML C160E2S11 |
| XMG B0146 *(1)* | XML B010P2S11 | XMG B01462 | *(8)* | | | | |

*(1) Depending on required adjustment range, examples:* *pressure < 8 bar =* ***XML A/B/C010****,*
*pressure > 8 bar =* ***XML A/B/C020****.*

*(2) Depending on required adjustment range, examples:* *pressure < 18 bar =* ***XML A/B/C020****,*
*pressure > 18 bar =* ***XML A/B/C035****.*

*(3) Depending on required adjustment range, examples:* *pressure < 32 bar =* ***XML A/B/C035****,*
*pressure > 32 bar =* ***XML A/B/C070****.*

*(4) Depending on fluid to be controlled.*

*(5) Depending on required adjustment range, examples:* *pressure < 65 bar =* ***XML A/B/C070****,*
*pressure > 65 bar =* ***XML A/B/C160****.*

*(6) Depending on required adjustment range, examples:* *pressure < 18 bar =* ***XML A/B/C020****,*
*pressure > 18 bar =* ***XML A/B/C035****.*

*(7) Temperature of fluid to be controlled limited to 70°C*

*(8) Please consult our Customer Care Centre.*

# *Component materials of units in contact with fluid*

This information will assist in checking the corrosion resistance of the pressure or vacuum switches in relation to the fluids controlled

# Electromechanical pressure and vacuum switches

## OsiSense XM, type XML

| Pressure or vacuum switch reference | Component materials in contact with fluid | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Zinc alloy | Stainless steel | Brass | Steel | Nitrile | PTFE | FPM, FKM | Aluminium |
| **XML AM01V●●●●, XML ●M02V●●●●** | ■ | *(1)* | | | ■ | | | |
| **XML AM01T●●●●, XML ●M02T●●●●** | | *(2)* | | | | ■ | | |
| **XML BM03R●●●●** | | | | ■ | | | ■ | ■ |
| **XML BM03S●●●●** | | *(3)* | | | | ■ | | ■ |
| **XML ●M05A●●●●** | ■ | *(1)* | | | ■ | | | |
| **XML ●M05B●●●●** | | *(1)* | ■ | | | | ■ | |
| **XML ●M05C●●●●** | | *(1)* | | | | ■ | | |
| **XML BM05P●●●●** | | *(1)* | | ■ | | | ■ | |
| **XML BL05R●●●●** | | | | | | | ■ | ■ |
| **XML BL05S●●●●** | | *(3)* | | | | ■ | | |
| **XML ●L35R●●●●, XML ●S35R●●●●** | | *(1)* | | ■ | | | ■ | |
| **XML ●L35S●●●●** | | *(3)* | | | | ■ | | |
| **XML BL35P●●●●** | | *(1)* | | ■ | | | ■ | |
| **XML ●001R●●●●** | | *(1)* | | ■ | | | ■ | |
| **XML ●001S●●●●** | | *(3)* | | | | ■ | | |
| **XML B001P●●●●** | | *(1)* | | ■ | | | ■ | |
| **XML ●002A●●●●** | ■ | | | | ■ | | | |
| **XML ●002B●●●●, XML ●S02B●●●●** | | | | ■ | | | ■ | |
| **XML ●002C●●●●** | | *(3)* | | | | ■ | | |
| **XML A004A●●●●** | ■ | | | | | | ■ | |
| **XML A004B●●●●** | | | ■ | | | | ■ | |
| **XML A004C●●●●** | | *(2)* | | | | ■ | | |
| **XML A004P●●●●** | | | | ■ | | | ■ | |

■ Materials in contact with fluid

*(1) 1.4307 (AISI 304L)*
*(2) 1.4404 (AISI 316L)*
*(3) 1.4305 (AISI 316L)*

# *Component materials of units in contact with fluid*

This information will assist in checking the corrosion resistance of the pressure or vacuum switches in relation to the fluids controlled

# Electromechanical pressure and vacuum switches

## OsiSense XM, type XML



| Pressure switch reference | Materials in contact with fluid | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Zinc alloy | Stainless steel | Brass | Steel | Nitrile | PTFE | FPM, FKM | Aluminium |
| **XML B004A●●●●** | ■ | | | | ■ | | | |
| **XML ●004B●●●●, XML ●S04B●●●●** | | | | ■ | | | ■ | |
| **XML ●004C●●●●** | | *(3)* | | | | ■ | | |
| **XML ●010A●●●●** | ■ | | | | | | ■ | |
| **XML ●010B●●●●** | | | ■ | | | | ■ | |
| **XML ●010C●●●●** | | *(2)* | | | | ■ | | |
| **XML ●010P●●●●, XML ●S10A●●●●** | | | | ■ | | | ■ | |
| **XML ●020A●●●●, XML ●035A●●●●** | ■ | | ■ | | ■ | | | ■ |
| **XML ●020B●●●●, XML ●035B●●●●** | | | ■ | | | | ■ | |
| **XML ●020C●●●●, XML ●035C●●●●** | | *(2)* | | | | ■ | | |
| **XML ●020P●●●●, XML ●035P●●●●, XML ●S20A●●●●** | | | | ■ | | | ■ | |
| **XML ●070D●●●●, XML ●160D●●●●** | | | ■ | ■ | | ■ | ■ | |
| **XML ●070E●●●●, XML ●160E●●●●** | | *(4)* | ■ | | | ■ | ■ | |
| **XML ●070N●●●●, XML ●160N●●●●** | | *(5)* | | | | ■ | ■ | |
| **XML ●300D●●●●** | | | ■ | ■ | | ■ | ■ | |
| **XML ●300E●●●●** | | *(4)* | ■ | | | ■ | ■ | |
| **XML ●300N●●●●** | | *(5)* | | | | ■ | ■ | |
| **XML ●500D●●●●** | | ■ | ■ | ■ | | ■ | ■ | |
| **XML ●500E●●●●** | | ■ | ■ | | | ■ | ■ | |
| **XML ●500N●●●●4** | | *(5)* | | | | ■ | ■ | |

■ Component materials in contact with fluid

*(2) 1.4404 (AISI 316L)*
*(3) 1.4305 (AISI 316L)*
*(4) 1.4404 (AISI 316L) + 1.4462*
*(5) 1.4404 (AISI 316L) + 1.4305 (AISI 303)*

# Electromechanical pressure switches
## OsiSense XM
## For control circuits, types ACW and ADW

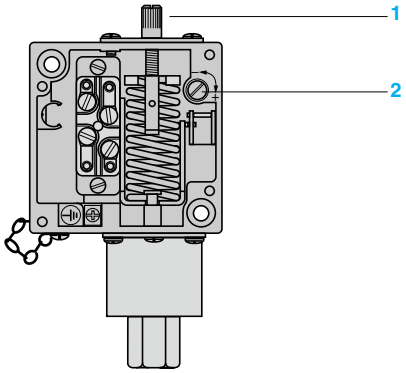


## Presentation

Pressure switches type ACW and ADW are switches for control circuits, with an adjustable differential.
Pressure switches type ACW are used to control the pressure of air, oils and other non corrosive fluids, up to 131 bar.
Pressure switches type ADW are used to control the pressure of oils (including synthetic), up to 340 bar.

## Setting, operating principle

### Pressure switches type ACW

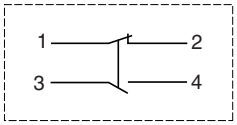



The switching point on falling pressure (low point - PB) is adjusted using screw 1.

The switching point on rising pressure (high point - PH) is made by adjusting screw 2. This sets the differential between the low and high points, giving a switching point on rising pressure of the displayed low point setting plus the differential setting.

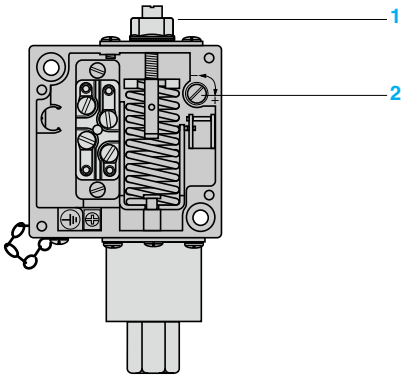
The two adjustments are completely independent.

### Contact block operation




When the rising pressure reaches the high point setting (low point setting + differential setting), contact B (1-2) opens and contact A (3-4) closes. The contacts remain actuated until the pressure falls back to the low point setting.

### Pressure switches type ADW

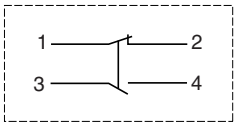



The switching point on rising pressure (high point - PH) is adjusted using screw 1.

The switching point on falling pressure (low point - PB) is made by adjusting screw 2. This sets the differential between the high and low points, giving a switching point on falling pressure of the displayed high point setting minus the differential setting.

The two adjustments are completely independent.

### Contact block operation




When the rising pressure reaches the high point setting, contact B (1-2) opens and contact A (3-4) closes. The contacts remain actuated until the pressure falls back to the low point setting (high point setting - differential setting).

# Electromechanical pressure switches
## OsiSense XM
For control circuits, types ACW and ADW



## Environment characteristics

| | | | |
|---|---|---|---|
| **Pressure switch type** | | ACW (bellows operated) | ADW (piston operated) |
| **Conformity to standards** | | CE, IEC/EN 60947-5-1 | |
| **Product certifications** | | CSA, UL (Recognized) | |
| **Protective treatment** | | "TC" | |
| **Materials** | | Zinc alloy case<br>Phosphor bronze bellows | Zinc alloy case<br>Pressure switches with drainage hole: Buna N diaphragm, steel piston, cast iron cylinder<br>Pressure switches with Quad-Ring piston seal: Buna N diaphragm, Teflon and Viton seal, stainless steel piston and cylinder |
| **Ambient air temperature** (for operation) | **°C** | - 56…+ 85 | - 30…+ 85 |
| **Fluids controlled** | | Air, oils and other non corrosive fluids, from - 73 to + 125°C | Oils and other fluids, from - 25 to + 120°C (for **ADW 5, 6, 7S1, 25, 26, 27S1**)<br><br>Oils (including synthetic) only, from - 30 to + 125°C (for **ADW 3, 4, 7, 23, 24, 27**) |
| **Degree of protection** | | IP 65 conforming to IEC/EN 60529 | |
| **Fluid connection** | | G 1/4 (BSP female) conforming to NF E 03-005, ISO 228 | G 3/8 (BSP female) conforming to NF E 03-005, ISO 228 |
| **Electrical connection** | | Terminals. 1 tapped entry for n° 13 (DIN Pg 13.5) cable gland | |

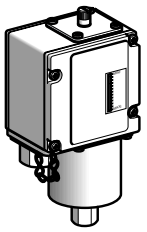
## Contact block characteristics

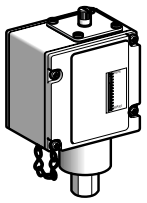
| | | | | |
|---|---|---|---|---|
| **Rated operational current** | | | **1 CO single-pole pressure switches** | **2 CO single-pole pressure switches** |
| | Category AC-15 | Ue<br>24 V<br>110 V<br>220 V<br>500 V | Ie<br>5 A<br>5 A<br>3 A<br>1.4 A | Ie<br>3 A<br>3 A<br>1.5 A<br>0.7 A |
| | Category DC-13 | Ue<br>24 V<br>110 V<br>220 V<br>500 V<br>600 V | Ie<br>5 A<br>0.5 A<br>0.25 A<br>0.10 A<br>0.06 A | Ie<br>1.5 A<br>0.25 A<br>–<br>–<br>– |
| **Short-circuit protection** | | 10 A cartridge fuse type gG | | |
| **Connection** | | Screw terminals<br>Minimum clamping capacity: 1 x 1 $mm^2$<br>Maximum clamping capacity: 2 x 2.5 $mm^2$ | | |

# Electromechanical pressure switches
## OsiSense XM
For control circuits, type ACW
Sizes 0.70 to 131 bar (10.15 to 1900 psi)
Adjustable differential, for regulation between 2 thresholds
Fluid connection G 1/4 (female)



| **Pressure switches type ACW** | **Bellows operated** |
|---|---|

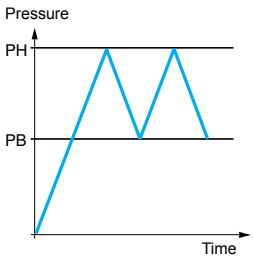




| | | | | | |
|---|---|---|---|---|---|
| **Adjustable range of switching point (PB)** (Falling pressure) | | | **0.07…0.70 bar (1.01…10.15 psi)** | **0.07…1.4 bar (1.01…20.3 psi)** | **0.07…5.2 bar (1.01…75.4 psi)** | **0.07…7.6 bar (1.01…110.2 psi)** |
| **References** | | | | | | |
| **Switches with 1 CO single-pole contact** | | | | | | |
| **Fluids controlled** | Air, oils and other non corrosive fluids, from - 73 to + 125°C *(1)* | | **ACW 3M129012** | **ACW 4M129012** | **ACW 5M129012** | **ACW 1M129012** |
| **Weight (kg)** | | | 1.750 | | 1.550 | |
| **Switches with 2 CO single-pole contacts** | | | | | | |
| **Fluids controlled** | Air, oils and other non corrosive fluids, from - 73 to + 125°C *(1)* | | **ACW 23M129012** | **ACW 24M129012** | **ACW 25M129012** | **ACW 21M129012** |
| **Weight (kg)** | | | 1.750 | | 1.550 | |
| **Complementary characteristics not shown under general characteristics** (page 2/139) | | | | | | |
| **Possible differential** (add to PB to give PH) | 1 CO switches | Min. | 0.04 bar (0.58 psi) | 0.10 bar (1.45 psi) | 0.30 bar (4.35 psi) | 0.50 bar (7.25 psi) |
| | | Max. | 0.34 bar (4.93 psi) | 0.40 bar (5.8 psi) | 1 bar (14.5 psi) | 2 bar (29 psi) |
| | 2 CO switches | Min. | 0.05 bar (0.73 psi) | 0.14 bar (2.03 psi) | 0.41 bar (5.95 psi) | 0.9 bar (13.05 psi) |
| | | Max. | 0.48 bar (6.96 psi) | 0.70 bar (10.15 psi) | 1.4 bar (20.3 psi) | 2.8 bar (40.6 psi) |
| **Maximum permissible pressure** | | | 2 bar (29 psi) | | 7 bar (101.5 psi) | 17 bar (246.5 psi) |
| **Mechanical life** | | | 1 x $10^6$ operating cycles (average value, depending on application) | | | |
| **Cable entry** | | | 1 entry tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5). Clamping capacity 9 to 13 mm | | | |

*(1) See "Component materials of units in contact with the fluid", page 2/139.*

## Operating curve



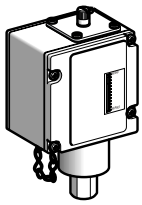

–– Adjustable value

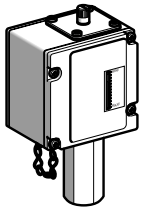
## Contact block connections

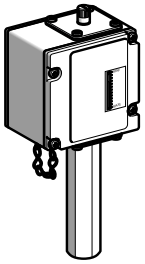

| | |
|---|---|
| **Other versions** | Pressure switches with alternative tapped cable entries: ISO, NPT, etc. Please consult our Customer Care Centre. |

Dimensions:
page 2/144

## Bellows operated







| 1.4…12 bar (20.3…174 psi) | 0.7…18 bar (10.15…261 psi) | 0.7…21 bar (10.15…304.5 psi) | 5.2…34 bar (75.4…493 psi) | 10…69 bar (145…1000 psi) | 24…131 bar (348…1900 psi) |
|---|---|---|---|---|---|

## References

### Switches with 1 CO single-pole contact

| ACW 8M129012 | ACW 9M129012 | ACW 2M129012 | ACW 6M129012 | ACW 7M129012 | ACW 10M129012 |
|---|---|---|---|---|---|
| 1.550 | | 2.100 | | | |

### Switches with 2 CO single-pole contacts

| ACW 28M129012 | ACW 29M129012 | ACW 22M129012 | ACW 26M129012 | ACW 27M129012 | ACW 20M129012 |
|---|---|---|---|---|---|
| 1.550 | | 2.100 | | | |

## Complementary characteristics not shown under general characteristics (page 2/139)

| | | | | | |
|---|---|---|---|---|---|
| 0.70 bar (10.15 psi) | 1 bar (14.5 psi) | 1.7 bar (24.7 psi) | 3.4 bar (49.3 psi) | 5.9 bar (85.6 psi) | 11 bar (159.5 psi) |
| 2 bar (29 psi) | 1.7 bar (24.7 psi) | 8.6 bar (124.7 psi) | 8.3 bar (120.4 psi) | 10 bar (145 psi) | 21 bar (304.5 psi) |
| 1 bar (14.5 psi) | 1.6 bar (23.2 psi) | 2.4 bar (34.8 psi) | 5.9 bar (85.6 psi) | 9.3 bar (134.9 psi) | 17 bar (246.5 psi) |
| 2.8 bar (40.6 psi) | 2.4 bar (34.8 psi) | 10 bar (145 psi) | 11 bar (159.5 psi) | 14 bar (203 psi) | 24 bar (348 psi) |
| 17 bar (246.5 psi) | 20 bar (290 psi) | 41 bar (549.5 psi) | 140 bar (2030 psi) | 140 bar (2030 psi) | 175 bar (2538 psi) |
| $1 \times 10^6$ operating cycles (average value, depending on application) | | | | | |
| 1 entry tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5).<br>Clamping capacity 9 to 13 mm | | | | | |

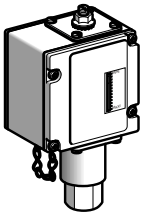
**Other versions** Pressure switches with alternative tapped cable entries: ISO, NPT, etc. Please consult our Customer Care Centre.

Dimensions:
page 2/144

# Electromechanical pressure switches
## OsiSense XM
For control circuits, type ADW
Sizes 69 to 340 bar (1000 to 4930 psi)
Adjustable differential, for regulation between 2 thresholds
Fluid connection G 3/8 (female)



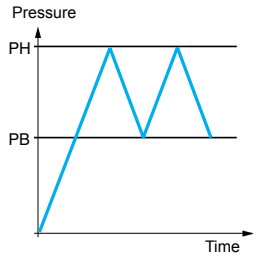
| **Pressure switches type ADW** | **Piston operated, with drainage hole** *(1)* |
|---|---|



| | | | | |
|---|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | | **9.3…69 bar (135…1000 psi)** | **28…210 bar (406…3045 psi)** | **38…340 bar (551…4930 psi)** |
| **References** | | | | | |
| **Switches with 1 CO single-pole contact** | | | | | |
| **Fluids controlled** | Oils (including synthetic), from - 30°C to + 125°C *(2) (3)* | | **ADW 3M129012** | **ADW 4M129012** | **ADW 7M129012** |
| **Weight (kg)** | | | 1.880 | | |
| **Switches with 2 CO single-pole contacts** | | | | | |
| **Fluids controlled** | Oils (including synthetic), from - 30°C to + 125°C *(2) (3)* | | **ADW 23M129012** | **ADW 24M129012** | **ADW 27M129012** |
| **Weight (kg)** | | | 1.880 | | |
| **Complementary characteristics not shown under general characteristics** (page 2/139) | | | | | |
| **Possible differential** (subtract from PH to give PB) | 1 CO switches | Min. | 2.4 bar (34.8 psi) | 6.9 bar (100 psi) | 8.6 bar (124.7 psi) |
| | | Max. | 9.3 bar (135 psi) | 28 bar (406 psi) | 38 bar (551 psi) |
| | 2 CO switches | Min. | 3.1 bar (45 psi) | 8.6 bar (124.7 psi) | 14 bar (203 psi) |
| | | Max. | 14 bar (203 psi) | 34 bar (493 psi) | 41 bar (594.5 psi) |
| **Maximum permissible pressure** | | | 690 bar (10 000 psi) | | |
| **Mechanical life** | | | 1 x $10^6$ operating cycles (average value, depending on application) | | |
| **Cable entry** | | | 1 entry tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5). Clamping capacity 9 to 13 mm | | |

*(1) Since it is normal for piston type pressure switches (not incorporating a piston seal) to have a slight oil leakage past the piston, a drain hole through the cylinder wall is incorporated. To avoid back pressure, this hole should never be plugged. If for any reason this oil leakage is undesirable, use pressure switches incorporating a Quad-Ring piston seal.*
*(2) See "Component materials of units in contact with the fluid", page 2/139.*
*(3) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

## Operating curve




–– Adjustable value

## Contact block connections


**Other versions**

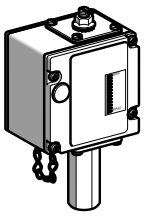
Pressure switches with alternative tapped cable entries: ISO, NPT, etc. Please consult our Customer Care Centre.

Dimensions:
page 2/144

# Electromechanical pressure switches
## OsiSense XM
For control circuits, type ADW
Sizes 69 to 340 bar (1000 to 4930 psi)
Adjustable differential, for regulation between 2 thresholds
Fluid connection G 3/8 (female)



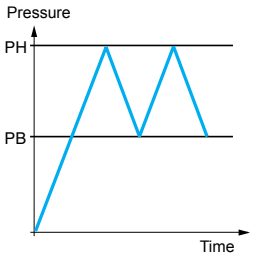
| **Pressure switches type ADW** | **Piston operated, with Quad-Ring piston seal** |
|---|---|



| | | | | |
|---|---|---|---|---|
| **Adjustable range of switching point (PH)** (Falling pressure) | | | **9.3…69 bar (135…1000 psi)** | **28…210 bar (406…3045 psi)** | **38…340 bar (551…4930 psi)** |
| **References** | | | | | |
| **Switches with 1 CO single-pole contact** | | | | | |
| **Fluids controlled** | Oils and other fluids, from - 25°C to + 120°C *(1) (2)* | | **ADW 5M129012** | **ADW 6M129012** | **ADW 7S1M129012** |
| **Weight (kg)** | | | 1.880 | | |
| **Switches with 2 CO single-pole contacts** | | | | | |
| **Fluids controlled** | Oils and other fluids, from - 25°C to + 120°C *(1) (2)* | | **ADW 25M129012** | **ADW 26M129012** | **ADW 27S1M129012** |
| **Weight (kg)** | | | 1.880 | | |
| **Complementary characteristics not shown under general characteristics** (page 2/139) | | | | | |
| **Possible differential** (subtract from PH to give PB) | 1 CO switches | Min./max. at low setting | 4.8/6.9 bar (69.6/100 psi) | 14/21 bar (203/304.5 psi) | 19/25 bar (275.5/362.5 psi) |
| | | Min./max. at high setting | 8.6/10 bar (124.7/145 psi) | 28/34 bar (406/493 psi) | 38/45 bar (551/652.5 psi) |
| | 2 CO switches | Min./max. at low setting | 6.2/7.9 bar (89.9/114.6 psi) | 17/24 bar (246.5/348 psi) | 22/28 bar (319/406 psi) |
| | | Min./max. at high setting | 10/12 bar (145/174 psi) | 34/39 bar (493/565.5 psi) | 44/50 bar (638/725 psi) |
| **Maximum permissible pressure** | | | 690 bar (10,000 psi) | | |
| **Mechanical life** | | | 1 x $10^6$ operating cycles (average value, depending on application) | | |
| **Cable entry** | | | 1 entry tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5). Clamping capacity 9 to 13 mm | | |

*(1) See "Component materials of units in contact with the fluid", page 2/139.*
*(2) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.*

## Operating curve




–– Adjustable value

## Contact block connections


**Other versions**

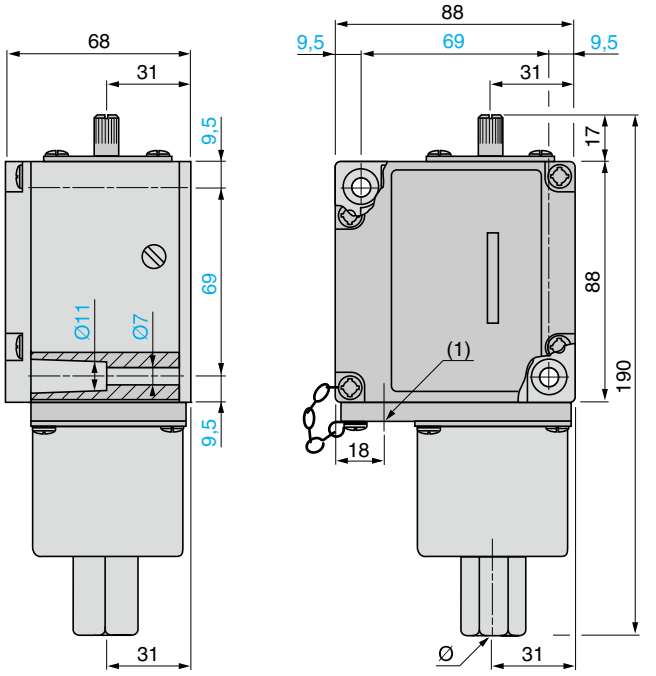
Pressure switches with alternative tapped cable entries: ISO, NPT, etc. Please consult our Customer Care Centre.

Dimensions: page 2/144

# Electromechanical pressure switches
## OsiSense XM
For control circuits, type ACW

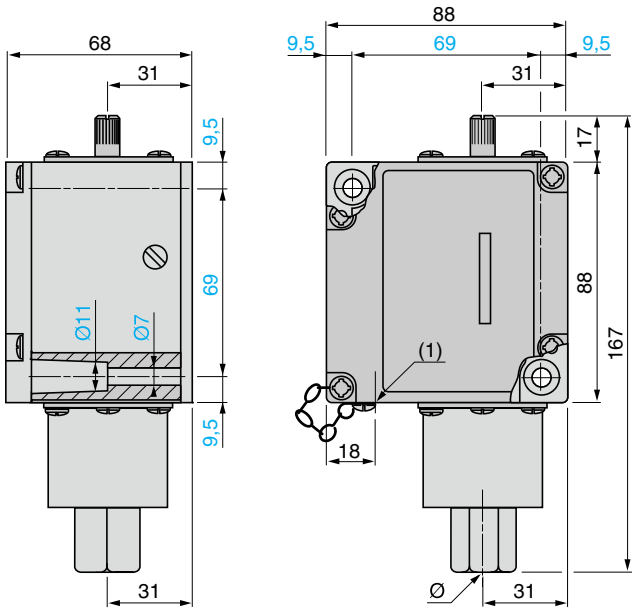


**ACW 3, 4, 23, 24**



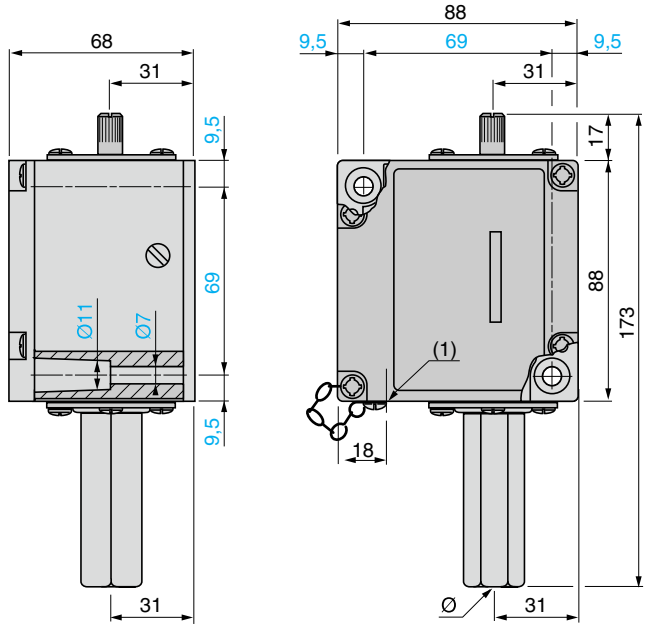

*(1) Tapped entry for n° 13 cable gland*
Ø: G 1/4 (female)

**ACW 1, 5, 8, 9, 21, 25, 28, 29**



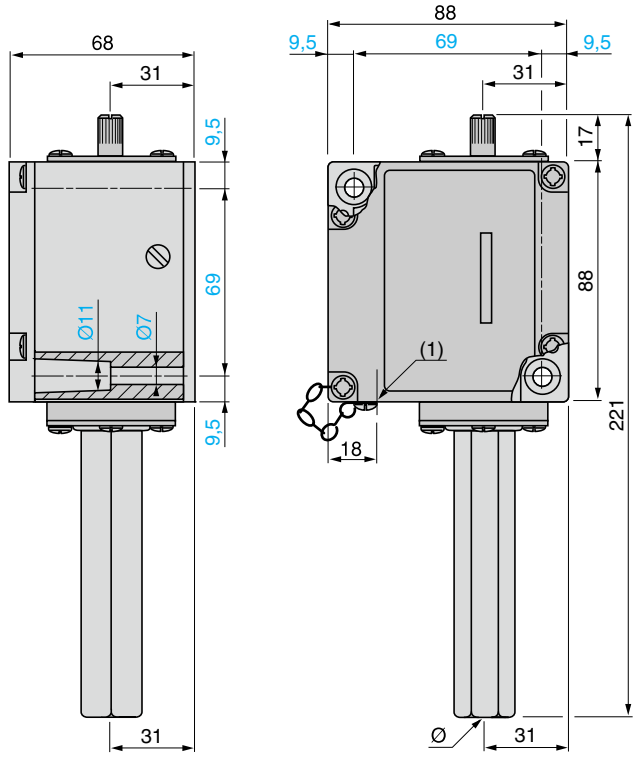

*(1) Tapped entry for n° 13 cable gland*
Ø: G 1/4 (female)

**ACW 2, 22**




*(1) Tapped entry for n° 13 cable gland*
Ø: G 1/4 (female)

**ACW 6, 7, 10, 26, 27, 20**




*(1) Tapped entry for n° 13 cable gland*
Ø: G 1/4 (female)

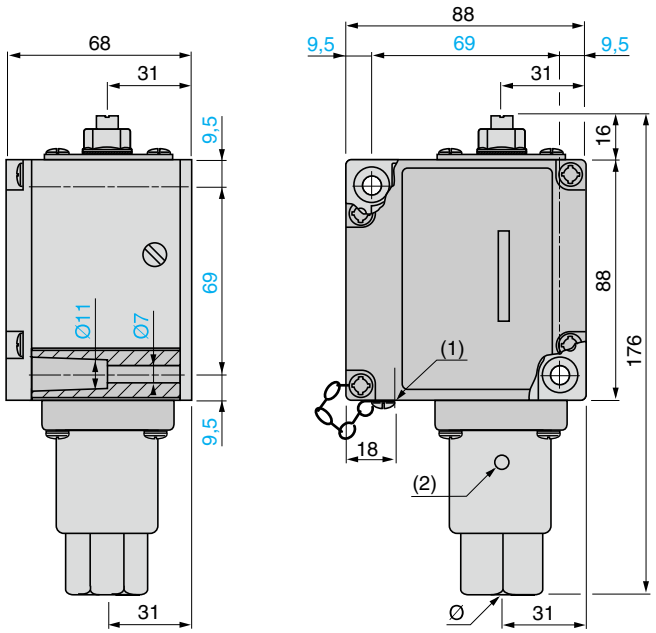
Characteristics:
pages 2/139, 2/141

References:
page 2/141

# Electromechanical pressure switches
## OsiSense XM
For control circuits, type ADW

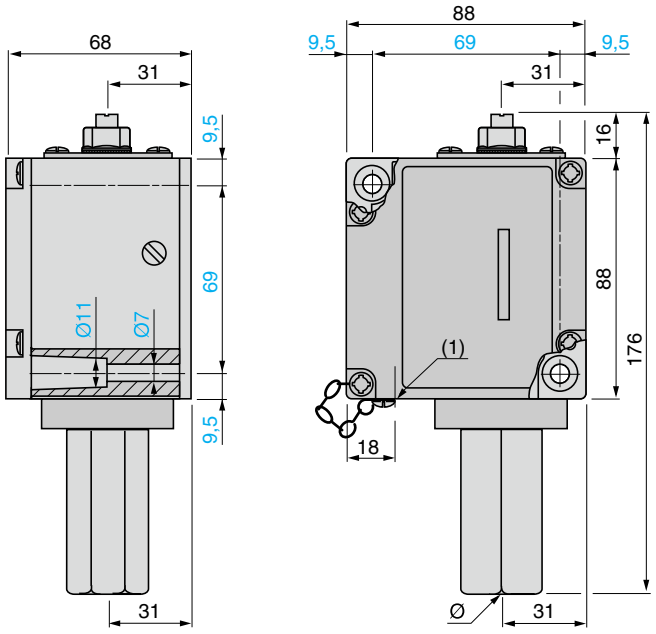


**ADW 3, 4, 7, 23, 24, 27**




*(1) Tapped entry for n° 13 cable gland*
*(2) Drainage hole, tapped G 1/8 (female)*
Ø: G 3/8 (female)

**ADW 5, 6, 7S1, 25, 26, 27S1**




*(1) Tapped entry for n° 13 cable gland*
Ø: G 3/8 (female)

Characteristics:
pages 2/139, 2/142

References:
page 2/142

# Electromechanical pressure switches
## OsiSense XM
## For control circuits, types XMX and XMA



## Presentation

Pressure switches type XMX and XMA are switches for control circuits, with an adjustable differential.
They are used to control the pressure of water and air, up to 25 bar.

## Equipment fitted to the various models

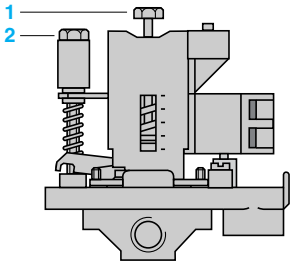
### Location of setting screw

Pressure switches type XMX have an internal setting screw that is only accessible after removing the cover.
Pressure switches type XMA have an external setting screw that is accessible without removing the cover.

### Case

Pressure switches type XMX have a black opaque case.
Pressure switches type XMA can have a transparent case or a black opaque case.

## Setting




When setting pressure switches XMX or XMA, adjust the switching point on rising pressure (PH) first and then the switching point on falling pressure (PB).

**Switching point on rising pressure**
The switching point on rising pressure (PH) is set by adjusting screw-nut 1.

**Switching point on falling pressure**
The switching point on falling pressure (PB) is set by adjusting screw-nut 2.

*References*:
page 2/148

Dimensions:
page 2/151

# Electromechanical pressure switches
## OsiSense XM
For control circuits, types XMX and XMA



| Environment characteristics | | | |
|---|---|---|---|
| **Conformity to standards** | | CE, IEC/EN 60947-5-1 | |
| **Product certifications** | | UL, CSA, ccc | |
| **Protective treatment** | | "TC" | |
| **Ambient air temperature** | **°C** | For operation: | - 25…+ 70 for 6 and 25 bar versions<br>- 25…+ 55 for 12 bar version |
| | | For storage: | - 40…+ 70 |
| **Fluids controlled** | **°C** | Air, fresh water, sea water: | 0…+ 70°C for 6 and 25 bar versions<br>0…+ 55°C for 12 bar version |
| **Materials** | | Case: polycarbonate impregnated with Lexan 500R fibreglass (black opaque cover) or polycarbonate impregnated with Lexan 123 fibreglass (transparent cover)<br>Component materials in contact with fluid: chromated zinc alloy (fluid entry), canvas covered nitrile (diaphragm) | |
| **Operating position** | | All positions | |
| **Electric shock protection** | | Class I conforming to IEC 536 | |
| **Degree of protection** | | IP 54 conforming to IEC/EN 60529 | |
| **Operating rate** | **Op. cycles/h** | 600 | |
| **Repeat accuracy** | | < 3.5% | |
| **Fluid connection** | | G 1/4 or 4 x G 1/4 (BSP female) conforming to NF E 03-005, ISO 228 | |
| **Electrical connection** | | Terminals<br>2 tapped entries for n° 13 (DIN Pg 13.5) cable gland | |

| Contact block characteristics | | |
|---|---|---|
| **Rated operational characteristics** | | ~ AC-15, B300 (Ue = 240 V, Ie = 1.5 A; Ue = 120 V, Ie = 3 A)<br>⎓ DC-13, R300 (Ue = 250 V, Ie = 0.1 A) |
| **Rated insulation voltage** | **V** | Ui = 500 conforming to IEC/EN 60947-1 |
| **Rated impulse withstand voltage** | **kV** | U imp = 6 conforming to IEC/EN 60947-1 |
| **Type of contacts** | | 1 CO single-pole contact, snap action |
| **Terminal referencing** | | Conforming to CENELEC EN 50013 |
| **Short-circuit protection** | | 10 A cartridge fuse type gG (gl) |
| **Connection** | | Screw clamp terminals<br>Minimum clamping capacity: 1 x 1 $mm^2$<br>Maximum clamping capacity: 2 x 2.5 $mm^2$ |
| **Electrical durability** | | AC supply 50/60Hz, Ith = 10 A<br>Inductive circuit, utilisation category AC-15, 3 A/240 V: 1 million operating cycles |

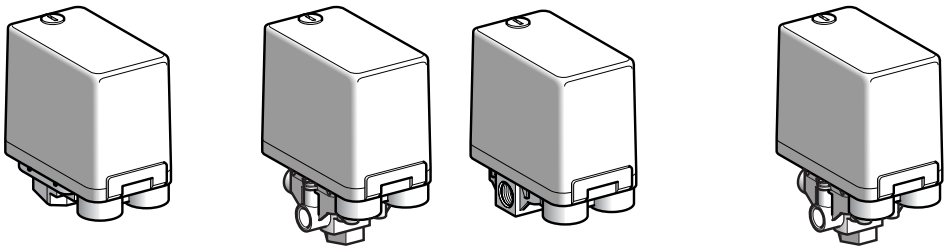
References:
page 2/148

Dimensions:
page 2/151

# Electromechanical pressure switches
## OsiSense XM
For control circuits, type XMX
Sizes 6 to 25 bar (87 to 362.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact



## Pressure switches type XMX (internal setting screw)

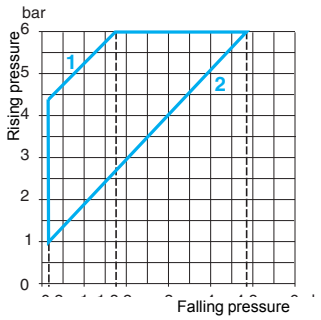


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | | **1…6 bar (14.5…87 psi)** | **1.3…12 bar (18.85…174 psi)** | **3.5…25 bar (50.75…362.5 psi)** | **1…6 bar (14.5…87 psi)** | **1.3…12 bar (18.85…174 psi)** | **3.5…25 bar (50.75…362.5 psi)** |
| **Fluid connection** | | G 1/4 (female) | | | 4 x G 1/4 (female) | | |
| **References** | | | | | | | |
| **Switches with black opaque cover** | | | | | | | |
| **Fluids controlled** | Air, fresh water, sea water *(1)* | **XMX A06L2135** | **XMX A12L2135** | **XMX A25L2135** | **XMX A06L2435** | **XMX A12L2435** | **XMX A25L2435** |
| **Weight (kg)** | | 0.430 | | 0.650 | 0.430 | | 0.650 |
| **Complementary characteristics not shown under general characteristics** (page 2/147) | | | | | | | |
| **Possible differential** (subtract from PH to give PB) | Min. at low setting | 0.8 bar (11.6 psi) | 1 bar (14.5 psi) | 3.4 bar (49.3 psi) | 0.8 bar (11.6 psi) | 1 bar (14.5 psi) | 3.4 bar (49.3 psi) |
| | Min. at high setting | 1.2 bar (17.4 psi) | 1.7 bar (24.6 psi) | 4.5 bar (65.2 psi) | 1.2 bar (17.4 psi) | 1.7 bar (24.6 psi) | 4.5 bar (65.2 psi) |
| | Max. at high setting | 4.2 bar (60.9 psi) | 8.4 bar (121.8 psi) | 20 bar (290 psi) | 4.2 bar (60.9 psi) | 8.4 bar (121.8 psi) | 20 bar (290 psi) |
| **Maximum permissible pressure** | Per cycle | 7.5 bar (108.7 psi) | 15 bar (217.5 psi) | 31.25 bar (453.1 psi) | 7.5 bar (108.7 psi) | 15 bar (217.5 psi) | 31.25 bar (453.1 psi) |
| | Accidental | 13.5 bar (195.7 psi) | 27 bar (391.5 psi) | 56.25 bar (815.6 psi) | 13.5 bar (195.7 psi) | 27 bar (391.5 psi) | 56.25 bar (815.6 psi) |
| **Destruction pressure** | | 30 bar (435 psi) | | 100 bar (1450 psi) | 30 bar (435 psi) | | 100 bar (1450 psi) |
| **Mechanical life** | | 1 x $10^6$ operating cycles | | | | | |
| **Cable entry** | | 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) | | | | | |
| **Pressure switch type** | | Diaphragm | | | | | |

*(1) Component materials of units in contact with the fluid, see page 2/147.*

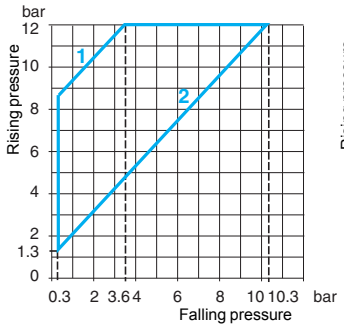
## Operating curves

**XMX A06●●●●●**



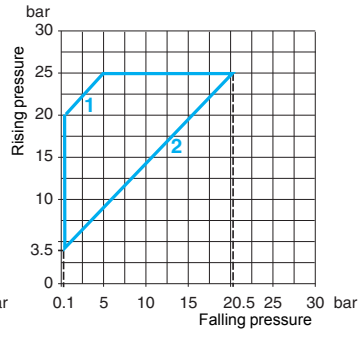

1 Maximum differential
2 Minimum differential

**XMX A12●●●●●**

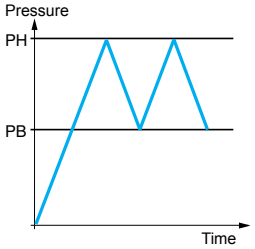



1 Maximum differential
2 Minimum differential

**XMX A25●●●●●**




1 Maximum differential
2 Minimum differential




–– Adjustable value

## Connections


**Other versions**

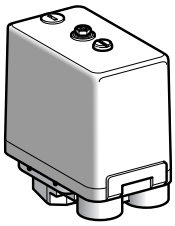
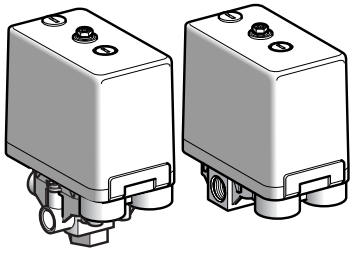
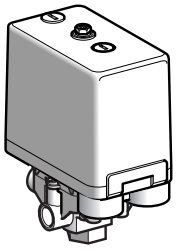
Pressure switches with alternative tapped cable entries: ISO, NPT, etc. Please consult our Customer Care Centre.

Accessories: page 2/150
Dimensions: page 2/151

# Electromechanical pressure switches
## OsiSense XM
For control circuits, type XMA
Sizes 6 to 25 bar (87 to 362.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 1 CO single-pole contact



## Pressure switches type XMA (external setting screw)

| | | | | | | |
|---|---|---|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | **1…6 bar (14.5…87 psi)** | **1.3…12 bar (18.85…174 psi)** | **3.5…25 bar (50.75…362.5 psi)** | **1…6 bar (14.5…87 psi)** | **1.3…12 bar (18.85…174 psi)** | **3.5…25 bar (50.75…362.5 psi)** |
| **Fluid connection** | G 1/4 (female) | | | 4 x G 1/4 (female) | | |

## References

| | | | | | | |
|---|---|---|---|---|---|---|
| **Switches with black opaque cover** | | | | | | |
| **Fluids controlled** | Air, fresh water, sea water *(1)* | **XMA H06L2135** | **XMA H12L2135** | **XMA H25L2135** | **XMA H06L2435** | **XMA H12L2435** | **XMA H25L2435** |
| **Switches with transparent cover** | | | | | | |
| **Fluids controlled** | Air, fresh water, sea water *(1)* | **XMA V06L2135** | **XMA V12L2135** | **XMA V25L2135** | **XMA V06L2435** | **XMA V12L2435** | **XMA V25L2435** |
| **Weight (kg)** | | 0.430 | | 0.650 | 0.430 | | 0.650 |

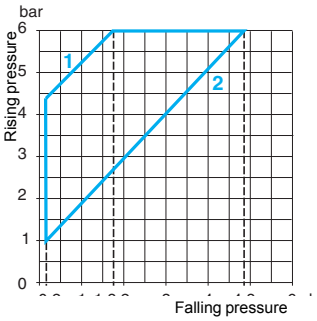
## Complementary characteristics not shown under general characteristics (page 2/147)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting | 0.8 bar (11.6 psi) | 1 bar (14.5 psi) | 3.4 bar (49.3 psi) | 0.8 bar (11.6 psi) | 1 bar (14.5 psi) | 3.4 bar (49.3 psi) |
| | Min. at high setting | 1.2 bar (17.4 psi) | 1.7 bar (24.6 psi) | 4.5 bar (65.2 psi) | 1.2 bar (17.4 psi) | 1.7 bar (24.6 psi) | 4.5 bar (65.2 psi) |
| | Max. at high setting | 4.2 bar (60.9 psi) | 8.4 bar (121.8 psi) | 20 bar (290 psi) | 4.2 bar (60.9 psi) | 8.4 bar (121.8 psi) | 20 bar (290 psi) |
| **Maximum permissible pressure** | Per cycle | 7.5 bar (108.7 psi) | 15 bar (217.5 psi) | 31.25 bar (453.1 psi) | 7.5 bar (108.7 psi) | 15 bar (217.5 psi) | 31.25 bar (453.1 psi) |
| | Accidental | 13.5 bar (195.7 psi) | 27 bar (391.5 psi) | 56.25 bar (815.6 psi) | 13.5 bar (195.7 psi) | 27 bar (391.5 psi) | 56.25 bar (815.6 psi) |
| **Destruction pressure** | | 30 bar (435 psi) | | 100 bar (1450 psi) | 30 bar (435 psi) | | 100 bar (1450 psi) |
| **Mechanical life** | | 1 x $10^6$ operating cycles | | | | | |
| **Cable entry** | | 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) | | | | | |
| **Pressure switch type** | | Diaphragm | | | | | |

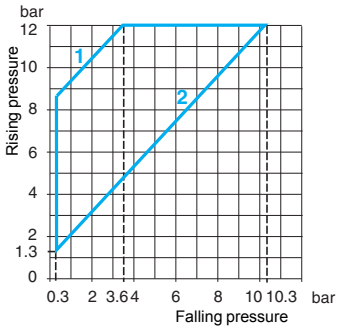
*(1) Component materials of units in contact with the fluid, see page 2/147.*

## Operating curves

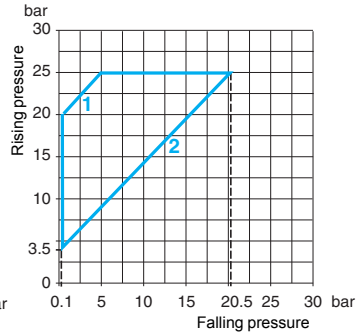
**XMA ●06●●●●●**

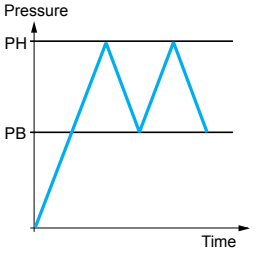



**XMA ●12●●●●●**




**XMA ●25●●●●●**




–– Adjustable value

1 Maximum differential
2 Minimum differential

1 Maximum differential
2 Minimum differential

1 Maximum differential
2 Minimum differential

## Connections


**Other versions**

Pressure switches with alternative tapped cable entries: ISO, NPT, etc. Please consult our Customer Care Centre.

Accessories: page 2/150
Dimensions: page 2/151

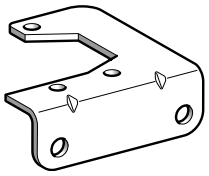
# Electromechanical pressure switches

## OsiSense XM

For control circuits, types XMX and XMA

Accessories and replacement parts



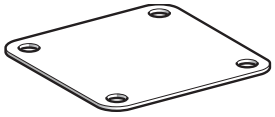


*XMA ZL001*

*XML ZL003*

*DE9 PM1201*

*DE9 PM1202*



*XMP Z3●*

| Description | | Reference | Weight kg |
|---|---|---|---|
| **Fixing bracket** | | **XMA ZL001** | 0.035 |
| **Knurled adjustment knob, Ø 36 mm**<br>fits over adjustment screws to facilitate setting | | **XML ZL003** | 0.010 |
| **13P cable gland** | With anti pull-out ring (for cable Ø 6…9 mm) | **DE9 PM1201** | 0.005 |
| | Without anti pull-out ring (for cable Ø 6…9 mm) | **DE9 PM1202** | 0.005 |
| | With anti pull-out ring (for cable Ø 9…12.5 mm) | **DE9 PM1203** | 0.005 |
| | Without anti pull-out ring (for cable Ø 9…12.5 mm) | **DE9 PM1204** | 0.005 |

| Description | For pressure switch | Reference | Weight kg |
|---|---|---|---|
| **Diaphragms** | Size 6 bar | **XMP Z31** | 0.005 |
| | Size 12 bar | **XMP Z32** | 0.005 |
| | Size 25 bar | **XMP Z33** | 0.005 |

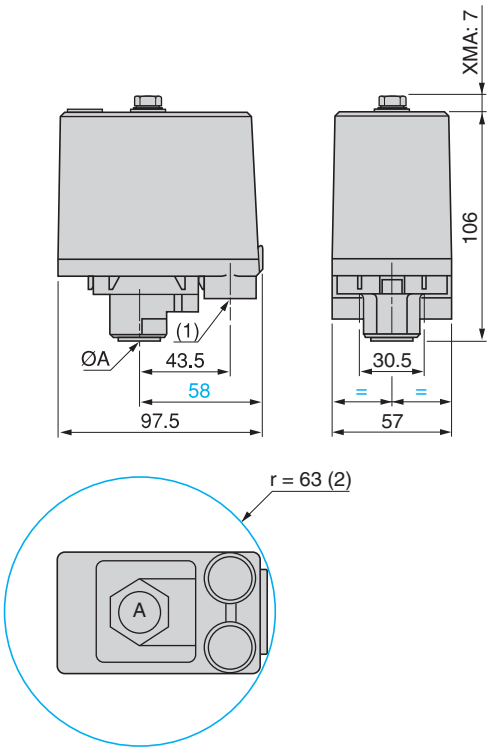
# Electromechanical pressure switches

## OsiSense XM

For control circuits, types XMX and XMA
Accessories and replacement parts



**XMX A06L2135, XMX A12L2135**
**XMA ●06L2135, XMA ●12L2135**

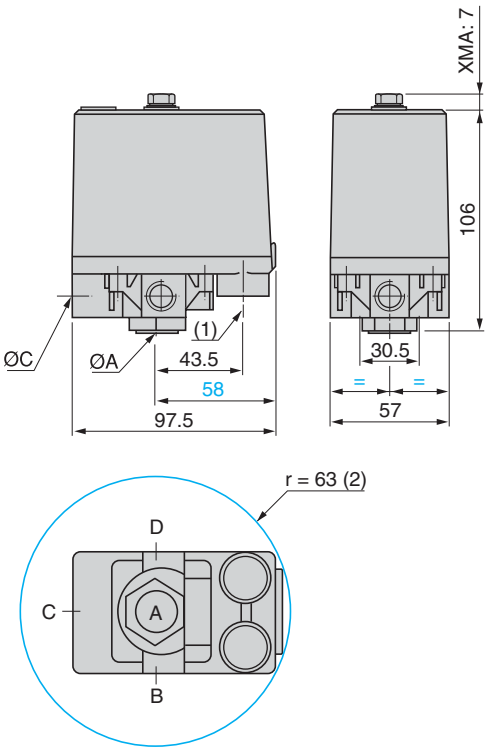



ØA = G 1/4 (female)

*(1) 2 tapped entries for n° 13 cable gland*

*(2) Minimum clearance zone for screwing-on pressure switch at point A*

**XMX A06L2435, XMX A12L2435**
**XMA ●06L2435, XMA ●12L2435**

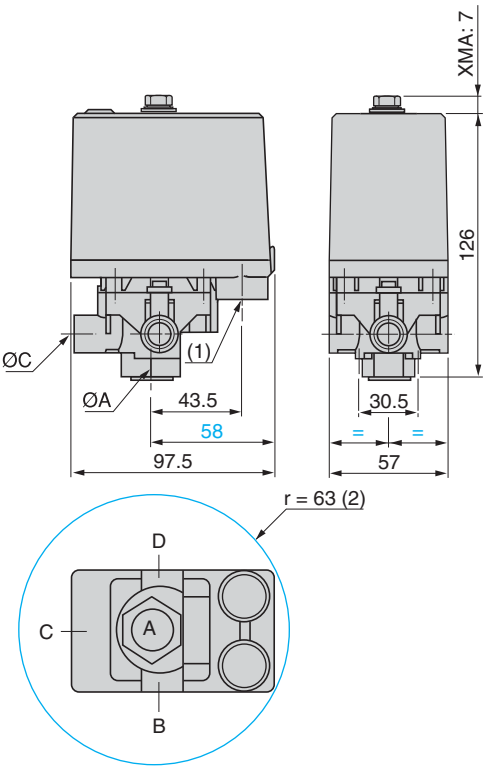



ØA = ØB = ØC = ØD = G 1/4 (female)

*(1) 2 tapped entries for n° 13 cable gland*

*(2) Minimum clearance zone for screwing-on pressure switch at point A*

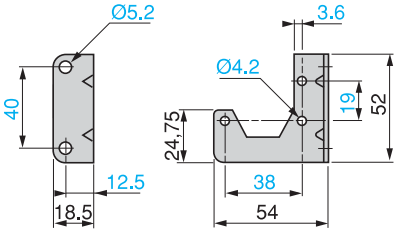
**XMX A25L2135, XMX A25L2435**
**XMA ●25L2135, XMA ●25L2435**




**XM● ●25L2135**: ØA only = G 1/4 (female)

**XM● ●25L2435**: ØA = ØB = ØC = ØD = G 1/4 (female)

**Fixing bracket**
**XMA ZL001**




*(1) 2 tapped entries for n° 13 cable gland*

*(2) Minimum clearance zone for screwing-on pressure switch at point A*

Characteristics: page 2/147
References: page 2/148

# Electromechanical pressure switches
## OsiSense XM
## For power circuits, types FTG, FSG and FYG



## Presentation

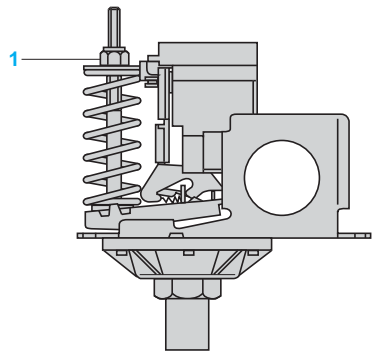
Pressure switches types FTG, FSG and FYG are switches for power circuits.
They are used to control the pressure of water, up to 10.5 bar.

2 types of product are available:
- pressure switches type FTG with fixed differential, for detection of a single threshold,
- pressure switches type FSG and FYG with an adjustable differential, for regulation between 2 thresholds.

For specific needs, these 2 types of product can be supplied in IP 65 versions, thus ensuring a higher degree of protection. They feature 2 cable entries, fitted with cable gland, and are referenced **F●G ●NE**.

## Setting

### Pressure switches with fixed differential (type FTG)

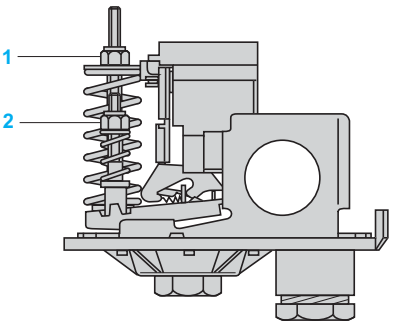



Only the switching point on rising pressure is adjustable.

**Switching point on rising pressure**
The switching point on rising pressure (PH) is set by adjusting screw-nut 1.

**Switching point on falling pressure**
The switching point on falling pressure (PB) is not adjustable.
The difference between the tripping and resetting points of the contact is the natural differential of the switch (contact differential, friction, etc.).

### Pressure switches with adjustable differential (types FSG and FYG)




When setting the pressure switch, adjust the switching point on rising pressure (PH) first and then the switching point on falling pressure (PB).

**Switching point on rising pressure**
The switching point on rising pressure (PH) is set by adjusting screw-nut 1.

**Switching point on falling pressure**
The switching point on falling pressure (PB) is set by adjusting screw-nut 2.

References:
page 2/154

Dimensions:
page 2/157

# Electromechanical pressure switches
## OsiSense XM
For power circuits, types FTG, FSG and FYG



### Environment characteristics

| Pressure switch type | | | FTG ● FTG ●NE | FSG ● and FYG ● FSG ●NE and FYG ●NE |
|---|---|---|---|---|
| **Conformity to standards** | | | CE, IEC/EN 60730 | |
| **Protective treatment** | | | Standard version: "TC" | |
| **Ambient air temperature** | | **°C** | For operation: 0...+ 45. For storage: - 30...+ 80 | |
| **Fluids controlled** | | | Fresh water, sea water (0…+ 70°C) | |
| **Materials** | | | Case: polystyrene, resistant to mechanical impact<br>Component materials in contact with fluid: nylon 6/6, zinc plated steel, nitrile | |
| **Operating position** | | | All positions | |
| **Electric shock protection** | | | Class I conforming to IEC 536 | |
| **Degree of protection** conforming to IEC/EN 60529 | **FTG ●, FSG ● and FYG ●** | | IP 20 | |
| | **FTG ●NE, FSG ●NE and FYG ●NE** | | IP 65 | |
| **Operating rate** | | **Op. cycles/h** | 600 | |
| **Repeat accuracy** | | | < 2% | |
| **Fluid connection** | **F●G 2, FYG ●2** | | G 1/4 (BSP female) conforming to NF E 03-005, ISO 228 | |
| | **F●G 9** | | R 1/4 (BSP male) conforming to NF E 03-004, ISO 7 | |
| **Electrical connection** | **FTG ●, FSG ● and FYG ●** | | Terminals. 2 cable entries, with grommet | |
| | **FTG ●NE, FSG ●NE and FYG ●NE** | | Terminals. 2 entries incorporating 13P cable gland (DIN Pg 13.5) | |

### Contact block characteristics

| | | | | | | |
|---|---|---|---|---|---|---|
| **Rated operational characteristics** | | | Ie = 10 A, Ue = ∼ 250 V conforming to EN 60730-1 | | | |
| **Power ratings of controlled motors** | Voltage | | ∼ 2-pole 1-phase | ∼ 2-pole 3-phase | ∼ 2-pole 1-phase | ∼ 2-pole 3-phase |
| | 110 V | | 0.75 kW (1 HP) | 1.1 kW (1.5 HP) | 0.75 kW (1 HP) | 1.1 kW (1.5 HP) |
| | 230 V | | 1.1 kW (1.5 HP) | 1.5 kW (2 HP) | 1.5 kW (2 HP) | 2.2 kW (3 HP) |
| | 400 V | | 1.5 kW (2 HP) | 1.5 kW (2 HP) | 1.5 kW (2 HP) | 2.2 kW (3 HP) |
| **Rated insulation voltage** conforming to IEC/EN 60947-1 | | **V** | Ui = 500 | | | |
| **Rated impulse withstand voltage** conforming to IEC/EN 60947-1 | | **kV** | U imp = 6 | | | |
| **Type of contacts** | | | 1 2-pole 2 NC (4 terminal) contact, snap action | | | |
| **Short-circuit protection** | | | 20 A cartridge fuse type gG | | | |
| **Connection** | | | Screw clamp terminals.<br>Minimum clamping capacity: 1 x 1 mm², max: 2 x 2 mm² | | | |
| **Electrical durability** at an operating rate of 600 operating cycles/hour | | **Op. cycles** | 40 000 | | 100 000 | |

References: page 2/154
Dimensions: page 2/157

# Electromechanical pressure switches

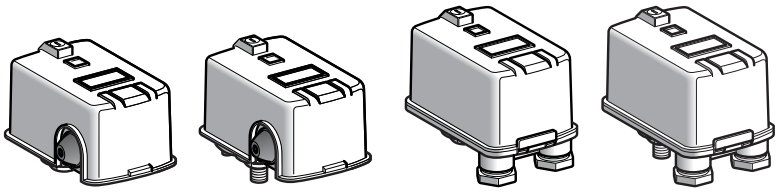
## OsiSense XM

For power circuits, type FTG

Size 4.6 bar (66.7 psi), fixed differential, for detection of a single threshold. Switches with 2-pole 2 NC contact.

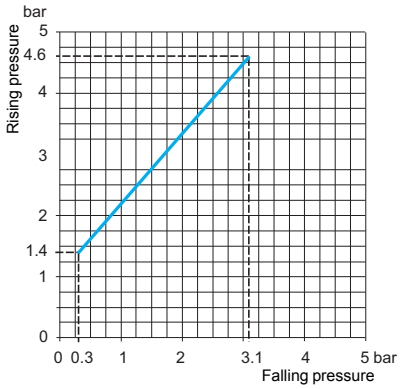
Degree of protection IP 20 or IP 65

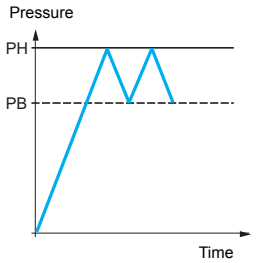


| **Fluid connection** | | **G 1/4 (female)** | **R 1/4 (male)** | **G 1/4 (female)** | **R 1/4 (male)** |
|---|---|---|---|---|---|
| | |  | | | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | **1.4…4.6 bar (20.3…66.7 psi)** | | | |
| **Degree of protection** conforming to IEC/EN 60529 | | **IP 20** | | **IP 65** | |
| **References** | | | | | |
| **Fluids controlled** | Fresh water, sea water, from 0°C to + 70°C *(1)* | **FTG 2** | **FTG 9** | **FTG 2NE** | **FTG 9NE** |
| **Weight (kg)** | | 0.340 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/153) | | | | | |
| **Natural differential** (subtract from PH to give PB) | At low setting | 1.1 bar (15.95 psi) | | | |
| | At middle setting | 1.3 bar (18.85 psi) | | | |
| | At high setting | 1.5 bar (21.75 psi) | | | |
| **Maximum permissible pressure** | Per cycle | 5.75 bar (83.38 psi) | | | |
| | Accidental | 8 bar (116 psi) | | | |
| **Destruction pressure** | | 20 bar (290 psi) | | | |
| **Mechanical life** | | 4 x $10^5$ operating cycles | | | |
| **Cable entry** | | 2 cable entries, with grommet | | 2 entries with 13P cable gland (DIN Pg 13.5) | |
| **Clamping capacity** | | – | | 9 to 13 mm | |
| **Pressure switch type** | | Diaphragm | | | |

*(1) Component materials of units in contact with the fluid, see page 2/153.*

## Operating curves

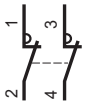



–– Adjustable value

---- Non adjustable value

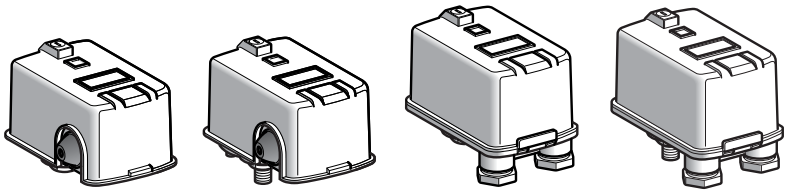
## Connections




Dimensions: page 2/157

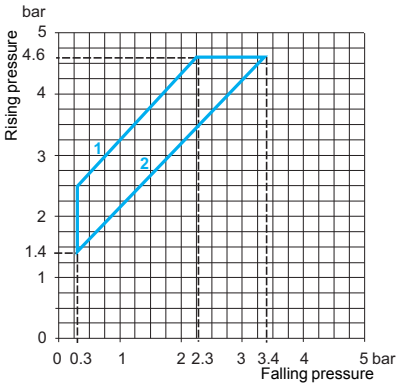
# Electromechanical pressure switches
## OsiSense XM
For power circuits, type FSG
Size 4.6 bar (66.7 psi), adjustable differential, for regulation between 2 thresholds. Switches with 2-pole 2 NC contact.
Degree protection IP 20 or IP 65



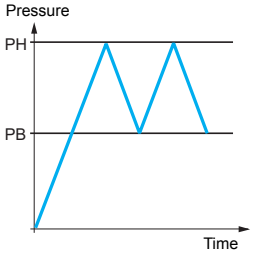
| **Fluid connection** | | **G 1/4 (female)** | **R 1/4 (male)** | **G 1/4 (female)** | **R 1/4 (male)** |
|---|---|---|---|---|---|
| | |  | | | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | **1.4…4.6 bar (20.3…66.7 psi)** | | | |
| **Degree of protection** conforming to IEC/EN 60529 | | **IP 20** | | **IP 65** | |
| **References** | | | | | |
| **Fluids controlled** | Fresh water, sea water, from 0°C to + 70°C *(1)* | **FSG 2** | **FSG 9** | **FSG 2NE** *(2)* | **FSG 9NE** |
| **Weight (kg)** | | 0.340 | | | |
| **Complementary characteristics not shown under general characteristics** (page 2/153) | | | | | |
| **Possible differential** (subtract from PH to give PB) | Max. at low setting | 2.1 bar (30.45 psi) | | | |
| | Max. at middle setting | 2.2 bar (31.9 psi) | | | |
| | Max. at high setting | 2.3 bar (33.35 psi) | | | |
| | Min. at low setting | 1 bar (14.5 psi) | | | |
| | Min. at middle setting | 1.1 bar (15.95 psi) | | | |
| | Min. at high setting | 1.2 bar (17.4 psi) | | | |
| **Maximum permissible pressure** | Per cycle | 5.75 bar (83.38 psi) | | | |
| | Accidental | 8 bar (116 psi) | | | |
| **Destruction pressure** | | 20 bar (290 psi) | | | |
| **Mechanical life** | | 1 x $10^6$ operating cycles | | | |
| **Cable entry** | | 2 cable entries, with grommet | | 2 entries with 13P cable gland (DIN Pg 13.5) | |
| **Clamping capacity** | | – | | 9 to 13 mm | |
| **Pressure switch type** | | Diaphragm | | | |

*(1) Component materials of units in contact with the fluid, see page 2/153.*
*(2) Variant: for a G 3/8 female fluid entry that pivots throughout 360°, select the **FSG 2NEG**.*

## Operating curves

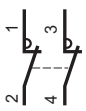



1 Maximum differential
2 Minimum differential




–– Adjustable value

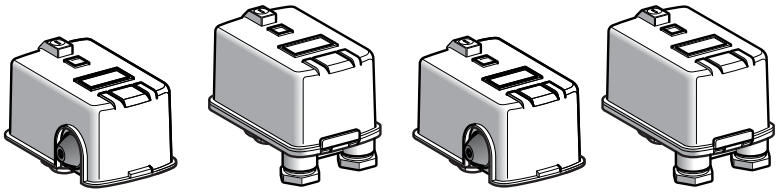
## Connections




Dimensions:
page 2/157

# Electromechanical pressure switches
## OsiSense XM
For power circuits, type FYG
Sizes 7 and 10.5 bar (101.5 and 152.3 psi), adjustable differential, for regulation between 2 thresholds. Switches with 2-pole 2 NC contact. Degree of protection IP 20 or IP 65



| | | | | | |
|---|---|---|---|---|---|
| **Fluid connection** | | **G 1/4 (female)** | | | |
| | |  | | | |
| **Adjustable range of switching point (PH)** (Rising pressure) | | **2.8…7 bar (40.6…101.5 psi)** | | **5.6…10.5 bar (81.2…152.3 psi)** | |
| **Degree of protection** conforming to EN/IEC 60529 | | **IP 20** | **IP 65** | **IP 20** | **IP 65** |
| **References** | | | | | |
| **Fluids controlled** | Fresh water, sea water, from 0°C to + 70°C *(1)* | **FYG 22** *(2)* | **FYG 22NE** | **FYG 32** *(3)* | **FYG 32NE** |
| **Weight (kg)** | | 0.340 | | | |

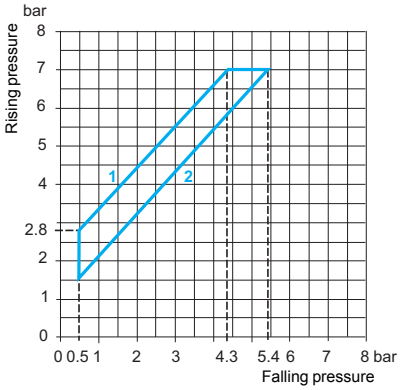
## Complementary characteristics not shown under general characteristics (page 2/153)

| | | | |
|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Max. at low setting | 2.3 bar (33.35 psi) | 3 bar (43.5 psi) |
| | Max. at middle setting | 2.5 bar (36.25 psi) | 3.2 bar (46.4 psi) |
| | Max. at high setting | 2.7 bar (39.15 psi) | 3.4 bar (49.3 psi) |
| | Min. at low setting | 1.2 bar (17.4 psi) | 1.9 bar (27.55 psi) |
| | Min. at middle setting | 1.4 bar (20.3 psi) | 2.1 bar (30.45 psi) |
| | Min. at high setting | 1.6 bar (23.2 psi) | 2.3 bar (33.35 psi) |
| **Maximum permissible pressure** | Per cycle | 8.75 bar (126.9 psi) | 13 bar (188.5 psi) |
| | Accidental | 15 bar (217.5 psi) | 15 bar (217.5 psi) |
| **Destruction pressure** | | 20 bar (290 psi) | 20 bar (290 psi) |
| **Mechanical life** | | 1 x $10^6$ operating cycles | |
| **Cable entry** | | 2 cable entries, with grommet | |
| **Pressure switch type** | | Diaphragm | |

*(1) Component materials of units in contact with the fluid, see page 2/153.*
*(2) Variant: for a 2.8 to 7 bar, IP 20, pressure switch with R 1/4 (male) fluid entry, select the* ***FYG 29.***
*(3) Variant: for a 5.6 to 10.5 bar, IP 20, pressure switch with R 1/4 (male) fluid entry, select the* ***FYG 39.***

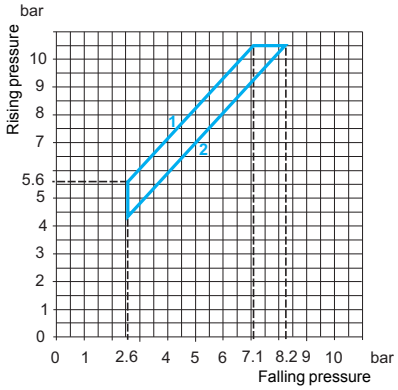
## Operating curves

**FYG 22**



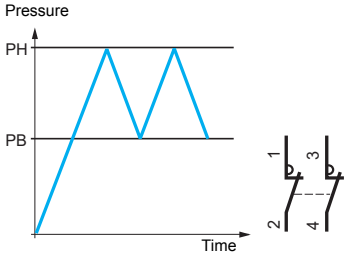

1 Maximum differential
2 Minimum differential

**FYG 32**




1 Maximum differential
2 Minimum differential

## Connections




–– Adjustable value

Dimensions:
page 2/157

# Electromechanical pressure switches

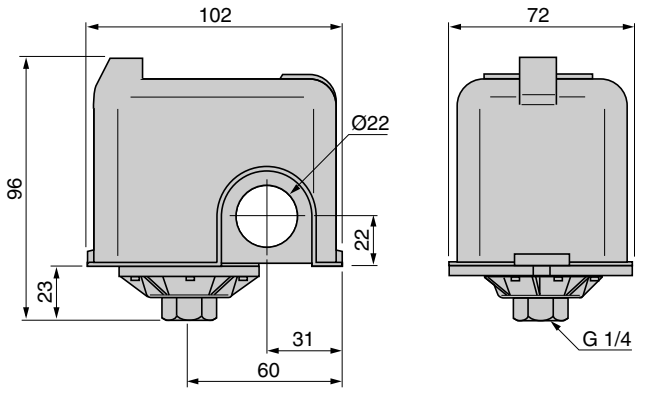
## OsiSense XM

For power circuits, types FTG, FSG and FYG

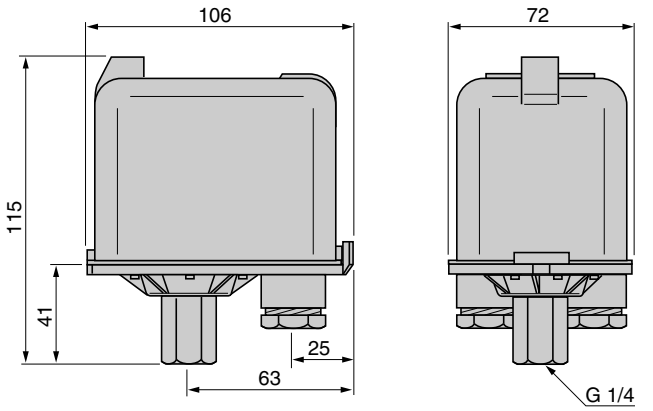


## Dimensions

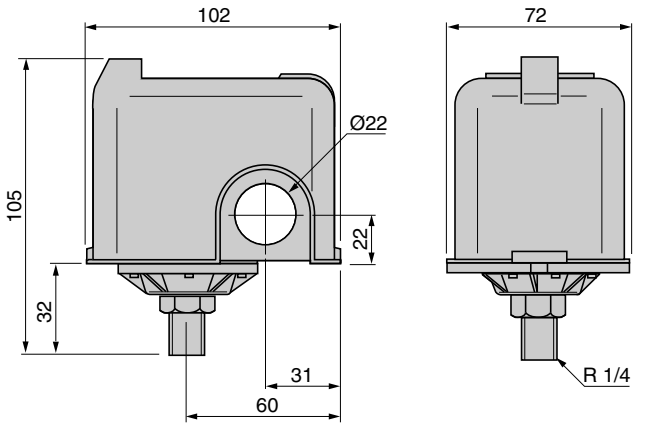
### FTG 2/FSG 2



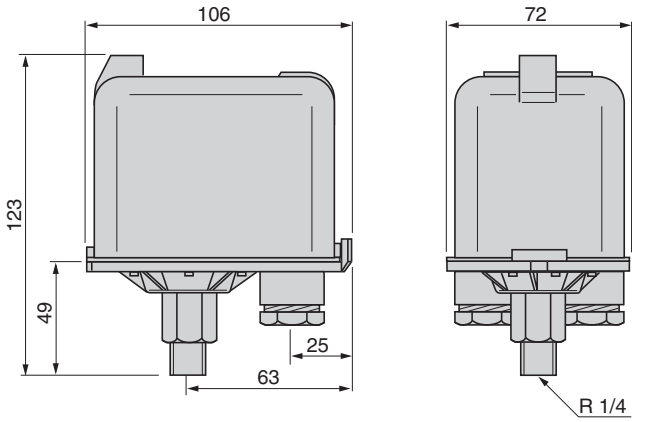

### FTG 2NE/FSG 2NE



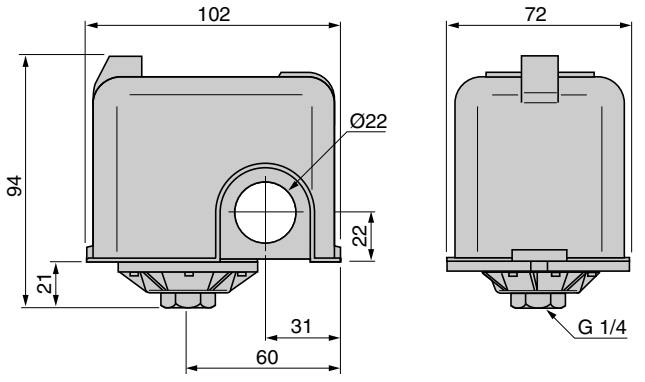

### FTG 9/FSG 9



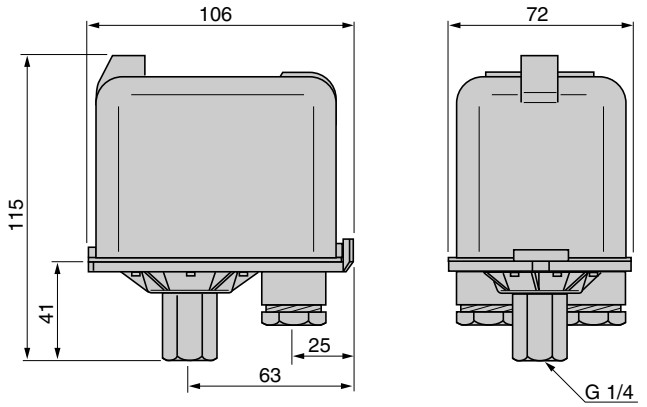

### FTG 9NE/FSG 9NE




### FYG 22, FYG 32




### FYG 22NE, FYG 32NE




Characteristics:
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# Electromechanical pressure switches
## OsiSense XM
## For power circuits, type XMP



## Presentation

Pressure switches type XMP are switches for power circuits (direct switching), with an adjustable differential.
They are used to control the pressure of water and air, up to 25 bar.

## Equipment fitted to the various models

### Case

Pressure switches type XMP, depending on the model, include:

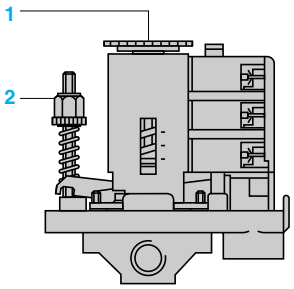
■ 3 types of case:
□ bare case,
□ case with On/Off knob (black): used as a switch for starting and stopping the installation,
□ case with reset knob (yellow): necessary when the safety requirements of the system include tripping in the event of overpressure. Resetting is not automatic on return to normal pressure, and it can only be achieved by manually turning the "Reset" knob.

■ 2 degrees of protection:
□ IP 54,
□ IP 65.

### Decompression valve

Depending on the model, 2 types of decompression valve can be fitted to pressure switches type XMP:
■ Straight, instant connection, decompression valve (connection by Ø 6 mm plastic tube).
■ Straight, olive connection, decompression valve (connection by Ø 6 mm plastic or metal tube).

## Setting




When setting XMP pressure switches, adjust the switching point on rising pressure (PH) first and then the switching point on falling pressure (PB).

**Switching point on rising pressure**
The switching point on rising pressure (PH) is set by adjusting the screw-nut or knurled knob 1.
Tighten either the nut or knurled knob 1 to increase the high point switching value.

**Switching point on falling pressure**
The switching point on falling pressure is set by adjusting screw-nut 2.
Tighten nut 2 to reduce the low point switching value (increase in differential).

References:
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# Electromechanical pressure switches
## OsiSense XM
## For power circuits, type XMP



### Environment characteristics

| | | |
|---|---|---|
| **Conformity to standards** | | CE, IEC/EN 60947-4-1 |
| **Ambient air temperature** | **°C** | For operation: - 25...+ 70<br>For storage: - 40...+ 70 |
| **Fluids controlled** | | Air, fresh water, sea water (0…+ 70°C) |
| **Materials** | | Case: polyamide impregnated with fibreglass<br>Component materials in contact with fluid: chromated zinc alloy (fluid entry), canvas covered nitrile (diaphragm) |
| **Operating position** | | All positions |
| **Vibration resistance** | | 3 gn (10…500 Hz) conforming to IEC 68-2-6 |
| **Shock resistance** | | 50 gn, conforming to IEC 68-2-27 |
| **Electric shock protection** | | Class I conforming to IEC 536 |
| **Degree of protection** | | IP 54 conforming to IEC/EN 60529 or IP 65 for universal model |
| **Operating rate** | **Op. cycles/h** | ≤ 600 |
| **Repeat accuracy** | | < 3.5% |
| **Fluid connection** | | G 1/4, 4 x G 1/4 or G 3/8 (BSP female) conforming to NF E 03-005, ISO 228 |
| **Electrical connection** | | 2 tapped entries for n° 13 (DIN Pg 13.5) cable gland |

### Contact block characteristics

| | | |
|---|---|---|
| **Rated insulation voltage** | **V** | Ui = 500 conforming to IEC/EN 60947-1 |
| **Rated impulse withstand voltage** | **V** | U imp = 6 kV conforming to IEC/EN 60 947-1 |
| **Type of contacts** | | One 2-pole 2 NC or 3-pole 3 NC contact, snap action |
| **Resistance across terminals** | **mΩ** | ≤ 25 conforming to NF C 93-050 method A or IEC 255-7 category 3 |
| **Terminal referencing** | | Conforming to CENELEC EN 50013 |
| **Short-circuit protection** | | Cartridge fuse type Am |
| **Connection** | | Screw clamp terminals. Minimum clamping capacity: 2 x 4 $mm^2$ |

**Electrical durability**
Operating rate: 600 operating cycles/hour
Load factor: 0.4

| Power | Number of operating cycles | |
|---|---|---|
| kW | ∼ 400 V, 3-phase | ∼ 230 V, 3-phase |
| 1.5 | 1 000 000 | 600 000 |
| 2.2 | 700 000 | – |
| 3 | 500 000 | – |

References: page 2/160
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# Electromechanical pressure switches

## OsiSense XM, Type XMP, IP 54

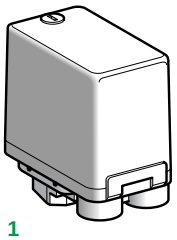
Size 6 bar (87 psi)

Adjustable differential, for regulation between 2 thresholds

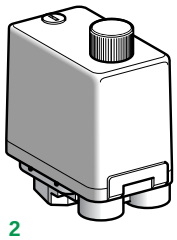
Switches with 2-pole 2 NC or 3-pole 3 NC contact



| | | |
|---|---|---|
| **Fluid connection** | **G 1/4 (female)** | |



1



2

| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | **1…6 bar (14.5…87 psi)** | |
| **Type of contact** | 2-pole 2 NC | 3-pole 3 NC |

## References *(1)*

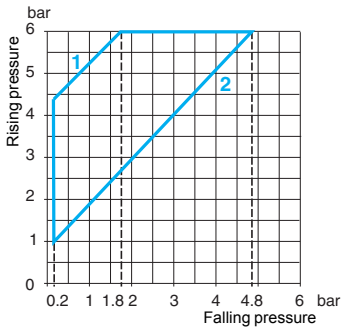
| | | |
|---|---|---|
| **Switches without decompression valve** | | |
| **Bare case 1** | **XMP A06B2131** | **XMP A06C2131** |
| **Case with reset knob 2** | **XMP B06B2131** | **–** |
| **Case with On/Off knob 2** | **XMP C06B2131** | **XMP C06C2131** |
| **Weight (kg)** | 0.430 | |
| **Switches with straight decompression valve, instant connection** | | |
| **Bare case 1** | **XMP D06B2131** | **XMP D06C2131** |
| **Case with On/Off knob 2** | **XMP E06B2131** | **XMP E06C2131** |
| **Weight (kg)** | 0.450 | |

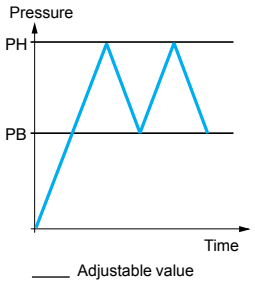
## Complementary characteristics not shown under general characteristics (page 2/159)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting | 0.8 bar (11.6 psi) |
| | Min. at high setting | 1.2 bar (17.4 psi) |
| | Max. at high setting | 4.2 bar (60.9 psi) |
| **Destruction pressure** | | 30 bar (435 psi) |
| **Mechanical life** | | 1 million operating cycles |
| **Cable entry** | | 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) |
| **Pressure switch type** | | Diaphragm |

*(1) References for individually packaged switches. Also available packaged in lots of 10. To order, add the letter **C** to the reference selected from above. Example: reference for lot of 10 pressure switches **XMP A06B2131** in one package becomes **XMP A06B2131C**.*

## Operating curves




1 Maximum differential
2 Minimum differential

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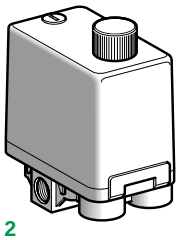
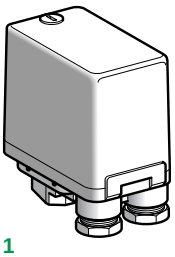
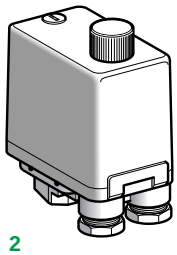
| 4 x G 1/4 (female) | | G 3/8 (female) | |
|---|---|---|---|
|  2 | |  1 |  2 |
| **1…6 bar (14.5…87 psi)** | | | |
| 2-pole 2 NC | 3-pole 3 NC | 2-pole 2 NC | 3-pole 3 NC |

## References *(1)*

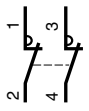
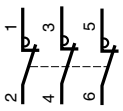
| | | | |
|---|---|---|---|
| **Switches without decompression valve** | | | |
| – | | **XMP A06B2242** | **XMP A06C2242** |
| – | | **XMP B06B2242** | – |
| – | | **XMP C06B2242** | **XMP C06C2242** |
| – | | 0.430 | |
| **Switches with straight decompression valve, instant connection** | | | |
| – | | **XMP D06B2242** | **XMP D06C2242** |
| **XMP E06B2431** | **XMP E06C2431** | **XMP E06B2242** | **XMP E06C2242** |
| 0.450 | | | |

## Complementary characteristics not shown under general characteristics (page 2/159)

| | |
|---|---|
| 0.8 bar (11.6 psi) | |
| 1.2 bar (17.4 psi) | |
| 4.2 bar (60.9 psi) | |
| 30 bar (435 psi) | |
| 1 million operating cycles | |
| 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) | 2 entries incorporating n° 13 plastic cable gland (DIN Pg 13.5)<br>Clamping capacity 9 to 13 mm |
| Diaphragm | |
| **Other versions** | Pressure switches not listed above, comprising the equipment proposed for the choice of reference. Please consult our Customer Care Centre. |

*(1) References for individually packaged switches. Also available packaged in lots of 10. To order, add the letter **C** to the reference selected from above. Example: reference for lot of 10 pressure switches **XMP A06B2242** in one package becomes **XMP A06B2242C**.*

## Terminal connections

| | **XMP ●●●B●●●●** | **XMP ●●●C●●●●** |
|---|---|---|
| |   |   |

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Dimensions: page 2/169

# Electromechanical pressure switches

## OsiSense XM, Type XMP, IP 54

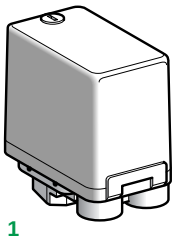
Size 12 bar (174 psi)

Adjustable differential, for regulation between 2 thresholds

Switches with 2-pole 2 NC or 3-pole 3 NC contact



| | | |
|---|---|---|
| **Fluid connection** | **G 1/4 (female)** | |



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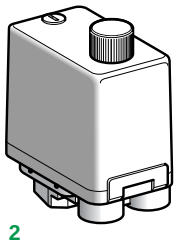


2

| | | |
|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | **1.3…12 bar (18.85…174 psi)** | |
| **Type of contact** | 2-pole 2 NC | 3-pole 3 NC |

## References *(1)*

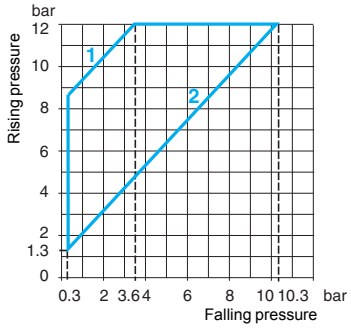
| | | |
|---|---|---|
| **Switches without decompression valve** | | |
| **Bare case 1** | **XMP A12B2131** | **XMP A12C2131** |
| **Case with reset knob 2** | **XMP B12B2131** | **–** |
| **Case with On/Off knob 2** | **XMP C12B2131** | **XMP C12C2131** |
| **Weight (kg)** | 0.430 | |
| **Switches with straight decompression valve, instant connection** | | |
| **Bare case 1** | **XMP D12B2131** | **XMP D12C2131** |
| **Case with On/Off knob 2** | **XMP E12B2131** | **XMP E12C2131** |
| **Weight (kg)** | 0.450 | |
| **Switches with straight decompression valve, olive connection** | | |
| **Case with On/Off knob 2** | **XMP R12B2131** | **XMP R12C2131** |
| **Weight (kg)** | 0.450 | |

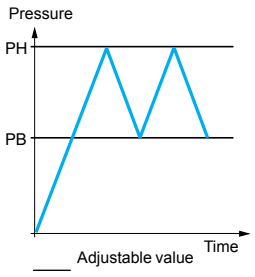
## Complementary characteristics not shown under general characteristics (page 2/159)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting | 1 bar (14.5 psi) |
| | Min. at high setting | 1.7 bar (24.6 psi) |
| | Max. at high setting | 8.4 bar (121.8 psi) |
| **Destruction pressure** | | 30 bar (435 psi) |
| **Mechanical life** | | 1 million operating cycles |
| **Cable entry** | | 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) |
| **Pressure switch type** | | Diaphragm |

*(1) References for individually packaged switches. Also available packaged in lots of 10. To order, add the letter **C** to the reference selected from above. Example: reference for lot of 10 pressure switches **XMP A12B2131** in one package becomes **XMP A12B2131C**.*

## Operating curves




1 Maximum differential
2 Minimum differential

Accessories: page 2/168
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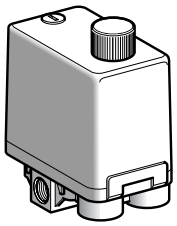
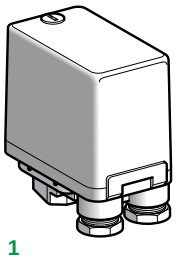
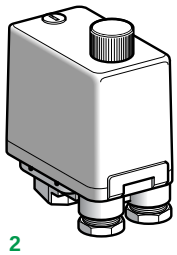
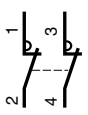
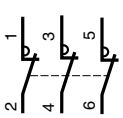
| 4 x G 1/4 (female) | | G 3/8 (female) | |
|---|---|---|---|
|  2 | |  1 |  2 |
| **1.3…12 bar (18.85…174 psi)** | | | |
| 2-pole 2 NC | 3-pole 3 NC | 2-pole 2 NC | 3-pole 3 NC |
| **References** *(1)* | | | |
| **Switches without decompression valve** | | | |
| – | | **XMP A12B2242** | **XMP A12C2242** |
| – | | **XMP B12B2242** | – |
| – | | **XMP C12B2242** | **XMP C12C2242** |
| – | | 0.430 | |
| **Switches with straight decompression valve, instant connection** | | | |
| – | | **XMP D12B2242** | **XMP D12C2242** |
| **XMP E12B2431** | **XMP E12C2431** | **XMP E12B2242** | **XMP E12C2242** |
| 0.450 | | | |
| **Switches with straight decompression valve, olive connection** | | | |
| – | | | |
| – | | | |

## Complementary characteristics not shown under general characteristics (page 2/159)

| | |
|---|---|
| 1 bar (14.5 psi) | |
| 1.7 bar (24.6 psi) | |
| 8.4 bar (121.8 psi) | |
| 30 bar (435 psi) | |
| 1 million operating cycles | |
| 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) | 2 entries incorporating n° 13 plastic cable gland (DIN Pg 13.5)<br>Clamping capacity 9 to 13 mm |
| Diaphragm | |
| **Other versions** | Pressure switches not listed above, comprising the equipment proposed for the choice of reference. Please consult our Customer Care Centre. |

*(1) References for individually packaged switches. Also available packaged in lots of 10. To order, add the letter **C** to the reference selected from above. Example: reference for lot of 10 pressure switches **XMP A12B2242** in one package becomes **XMP A12B2242C**.*

## Terminal connections

| XMP ●●●B●●●● | XMP ●●●C●●●● |
|---|---|
|  |  |

Accessories: page 2/168
Dimensions: page 2/169

# Electromechanical pressure switches

## OsiSense XM, Type XMP, IP 54

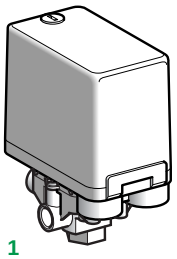
Size 25 bar (362.5 psi)

Adjustable differential, for regulation between 2 thresholds

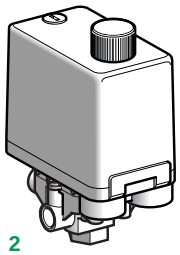
Switches with 2-pole 2 NC or 3-pole 3 NC contact



| | |
|---|---|
| **Fluid connection** | **G 1/4 (female)** |



1



2

| | |
|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | **3.5…25 bar (50.75…362.5 psi)** |
| **Type of contact** | 2-pole 2 NC |

## References *(1)*

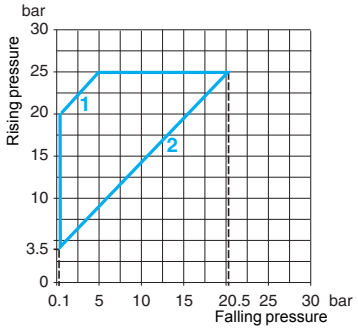
| | |
|---|---|
| **Switches without decompression valve** | |
| **Bare case 1** | **XMP A25B2131** |
| **Case with reset knob 2** | **XMP B25B2131** |
| **Case with On/Off knob 2** | **XMP C25B2131** |
| **Weight (kg)** | 0.650 |
| **Switches with straight decompression valve, olive connection** | |
| **Case with On/Off knob 2** | **XMP R25B2131** |
| **Weight (kg)** | 0.670 |

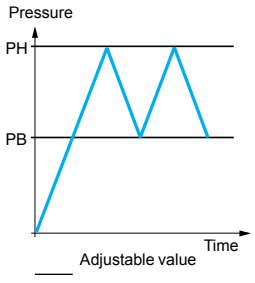
## Complementary characteristics not shown under general characteristics (page 2/159)

| | | |
|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting | 3.4 bar (49.3 psi) |
| | Min. at high setting | 4.5 bar (65.2 psi) |
| | Max. at high setting | 20 bar (290 psi) |
| **Destruction pressure** | | 100 bar (1450 psi) |
| **Mechanical life** | | 1 million operating cycles |
| **Cable entry** | | 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) |
| **Pressure switch type** | | Diaphragm |

*(1) References for individually packaged switches. Also available packaged in lots of 10. To order, add the letter **C** to the reference selected from above. Example: reference for lot of 10 pressure switches **XMP A25B2131** in one package becomes **XMP A25B2131C**.*

## Operating curves

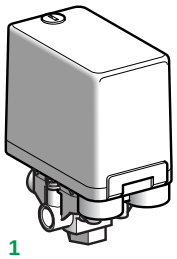


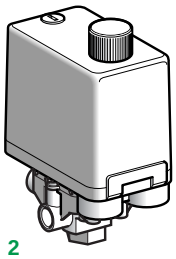

1 Maximum differential
2 Minimum differential

Accessories: page 2/168
Dimensions: page 2/169

**G 1/4 (female)**



1



2

**3.5…25 bar (50.75…362.5 psi)**

3-pole 3 NC

## References *(1)*

**Switches without decompression valve**

**XMP A25C2131**

**–**

**XMP C25C2131**

0.650

**Switches with straight decompression valve, olive connection**

**XMP R25C2131**

0.670

## Complementary characteristics not shown under general characteristics (page 2/159)

3.4 bar (49.3 psi)

4.5 bar (65.2 psi)

20 bar (290 psi)

100 bar (1450 psi)

1 million operating cycles

2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5)

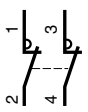
Diaphragm

**Other versions** Pressure switches not listed above, comprising the equipment proposed for the choice of reference. Please consult our Customer Care Centre.

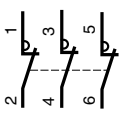
*(1) References for individually packaged switches. Also available packaged in lots of 10. To order, add the letter **C** to the reference selected from above. Example: reference for lot of 10 pressure switches **XMP A25C2131** in one package becomes **XMP A25C2131C**.*

## Terminal connections

**XMP ●●●B●●●●**




**XMP ●●●C●●●●**




Accessories: page 2/168
Dimensions: page 2/169

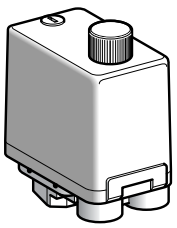
# Electromechanical pressure switches

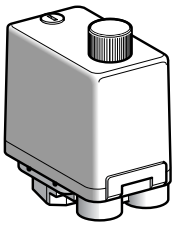
## OsiSense XM, Type XMP, IP 65

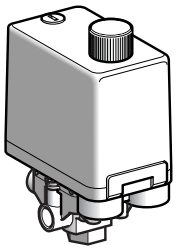
Sizes 6 to 25 bar (87 to 362.5 psi)
Adjustable differential, for regulation between 2 thresholds
Switches with 2-pole 2 NC or 3-pole 3 NC contact



| | | | | | | |
|---|---|---|---|---|---|---|
| **Fluid connection** | **G 1/4 (female)** | | | | | |







| | | | | | | |
|---|---|---|---|---|---|---|
| **Adjustable range of switching point (PH)** (Rising pressure) | **1…6 bar (14.5…87 psi)** | | **1.3…12 bar (18.85…174 psi)** | | **3.5…25 bar (50.75…362.5 psi)** | |
| **Type of contact** | 2-pole 2 NC | 3-pole 3 NC | 2-pole 2 NC | 3-pole 3 NC | 2-pole 2 NC | 3-pole 3 NC |

## References *(1)*

**Switches with straight decompression valve, olive connection**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Case with On/Off knob** | **XMP R06B2133** | **XMP R06C2133** | **XMP R12B2133** | **XMP R12C2133** | **XMP R25B2133** | **XMP R25C2133** |
| **Weight (kg)** | 0.450 | | | | 0.670 | |

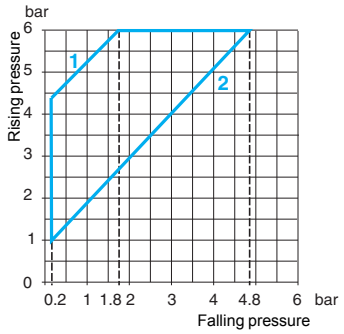
## Complementary characteristics not shown under general characteristics (page 2/159)

| | | | | |
|---|---|---|---|---|
| **Possible differential** (subtract from PH to give PB) | Min. at low setting | 0.8 bar (11.6 psi) | 1 bar (14.5 psi) | 3.4 bar (49.3 psi) |
| | Min. at high setting | 1.2 bar (17.4 psi) | 1.7 bar (24.6 psi) | 4.5 bar (65.2 psi) |
| | Max. at high setting | 4.2 bar (60.9 psi) | 8.4 bar (121.8 psi) | 20 bar (290 psi) |
| **Destruction pressure** | 30 bar (435 psi) | | | 100 bar (1450 psi) |
| **Mechanical life** | 1 million operating cycles | | | |
| **Cable entry** | 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) | | | |
| **Adjustment of high setting point (PH)** | By screw-nut | | | |
| **Pressure switch type** | Diaphragm | | | |

*(1) References for individually packaged switches. Also available packaged in lots of 10. To order, add the letter **C** to the reference selected from above. Example: reference for lot of 10 pressure switches **XMP R06B2133** in one package becomes **XMP R06B2133C**.*

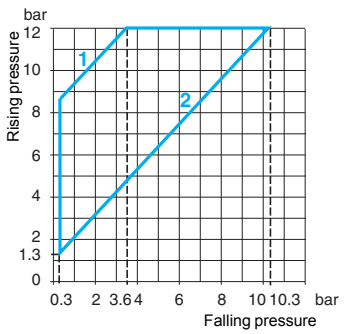
## Operating curves

**XMP R06●●●●●**



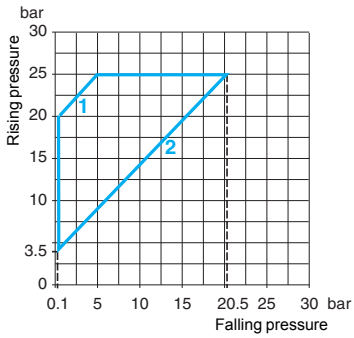

1 Maximum differential
2 Minimum differential

**XMP R12●●●●●**

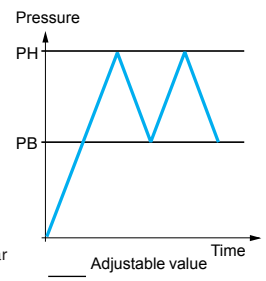



1 Maximum differential
2 Minimum differential

**XMP R25●●●●●**

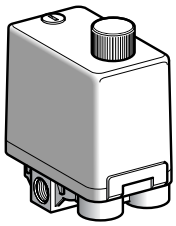


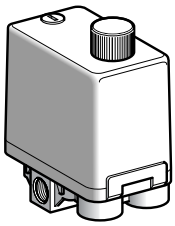

1 Maximum differential
2 Minimum differential

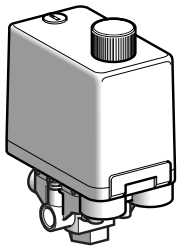



Accessories: page 2/168
Dimensions: page 2/169

**4 x G 1/4 (female)**







| **1…6 bar (14.5…87 psi)** | | **1.3…12 bar (18.85…174 psi)** | | **3.5…25 bar (50.75…362.5 psi)** | |
|---|---|---|---|---|---|
| 2-pole 2 NC | 3-pole 3 NC | 2-pole 2 NC | 3-pole 3 NC | 2-pole 2 NC | 3-pole 3 NC |

## References *(1)*

**Switches with straight decompression valve, olive connection**

| **XMP R06B2433** | **XMP R06C2433** | **XMP R12B2433** | **XMP R12C2433** | **XMP R25B2433** | **XMP R25C2433** |
|---|---|---|---|---|---|
| 0.450 | | | | 0.670 | |

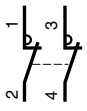
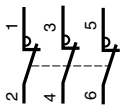
## Complementary characteristics not shown under general characteristics (page 2/159)

| | | |
|---|---|---|
| 0.8 bar (11.6 psi) | 1 bar (14.5 psi) | 3.4 bar (49.3 psi) |
| 1.2 bar (17.4 psi) | 1.7 bar (24.6 psi) | 4.5 bar (65.2 psi) |
| 4.2 bar (60.9 psi) | 8.4 bar (121.8 psi) | 20 bar (290 psi) |
| 30 bar (435 psi) | | 100 bar (1450 psi) |
| 1 million operating cycles | | |
| 2 entries tapped for n° 13 cable gland, conforming to NF C 68-300 (DIN Pg 13.5) | | |
| By screw-nut | | |
| Diaphragm | | |

| | |
|---|---|
| **Other versions** | Pressure switches not listed above, comprising the equipment proposed for the choice of reference. Please consult our Customer Care Centre. |

*(1) References for individually packaged switches. Also available packaged in lots of 10. To order, add the letter **C** to the reference selected from above. Example: reference for lot of 10 pressure switches **XMP R06B2433** in one package becomes **XMP R06B2433C**.*

## Terminal connections

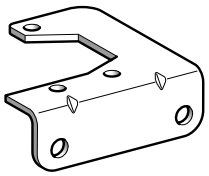
| **XMP ●●●B●●●●** | **XMP ●●●C●●●●** |
|---|---|
|  |  |

Accessories: page 2/168

Dimensions: page 2/169

# Electromechanical pressure switches
## OsiSense XM
### For power circuits, type XMP
### Accessories and replacement parts



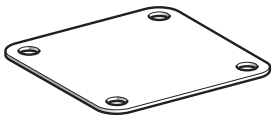


*XMA ZL001*

*XMP MDR01*

*DE9 PM1201*

*DE9 PM1202*



*XMP Z3●*

## References

| Description | | Reference | Weight kg |
|---|---|---|---|
| **Fixing bracket** | | **XMA ZL001** | 0.035 |
| **Knurled adjustment knob, Ø 36 mm**<br>fits over adjustment screws to facilitate setting | | **XMP MDR01** | 0.010 |
| **13P cable gland** | With anti pull-out ring (for cable Ø 6…9 mm) | **DE9 PM1201** | 0.005 |
| | Without anti pull-out ring (for cable Ø 6…9 mm) | **DE9 PM1202** | 0.005 |
| | With anti pull-out ring (for cable Ø 9…12.5 mm) | **DE9 PM1203** | 0.005 |
| | Without anti pull-out ring (for cable Ø 9…12.5 mm) | **DE9 PM1204** | 0.005 |

| Description | For pressure switch | Sold in lots of | Unit reference | Weight kg |
|---|---|---|---|---|
| **Diaphragms** | Size 6 bar | 50 | **XMP Z31** | 0.005 |
| | Size 25 bar | 50 | **XMP Z33** | 0.005 |

Dimensions:
page 169

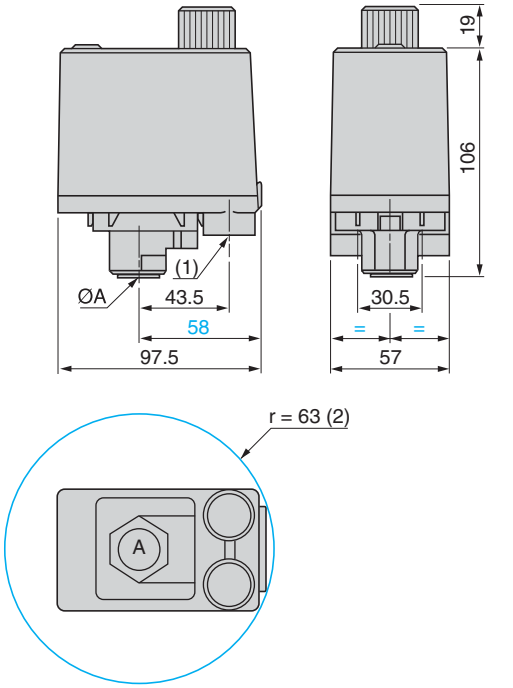
# Electromechanical pressure switches
## OsiSense XM
For power circuits, type XMP
Accessories and replacement parts



## Dimensions

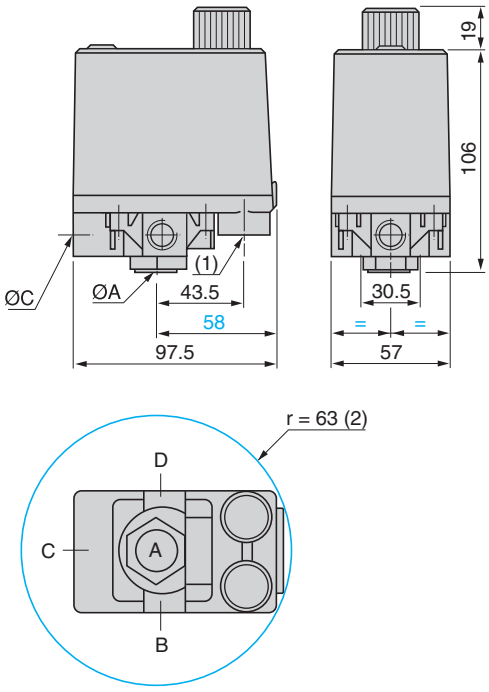
### XMP ●06●●●●● and XMP ●12●●●●●

**Fluid connection G 1/4 or G 3/8 (female)**
**Without decompression valve**



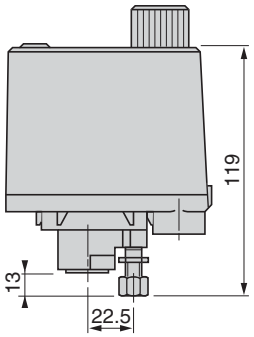

ØA = G 1/4 or G 3/8 (female)

**Fluid connection 4 x G 1/4 (female)**
**Without decompression valve**

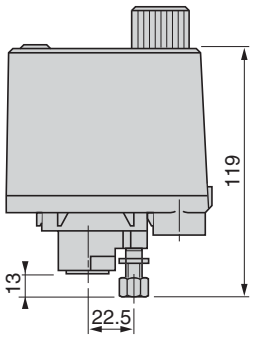



ØA = ØB = ØC = ØD = G 1/4 (female)

**With straight, instant connection, decompression valve**




**With straight, olive connection, decompression valve**

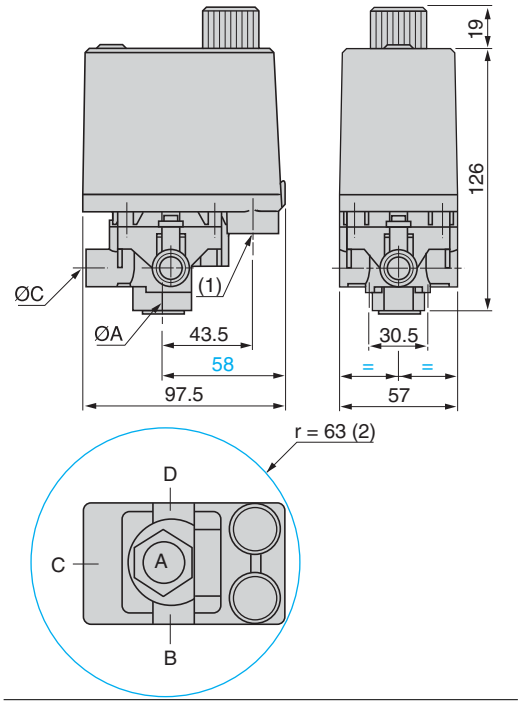



*(1) 2 tapped entries for n° 13 cable gland*

*(2) Minimum clearance zone for screwing-on pressure switch at point A*

### XMP ●25●●●●●

**Fluid connection G 1/4 or 4 x G 1/4 (female)**
**Without decompression valve**



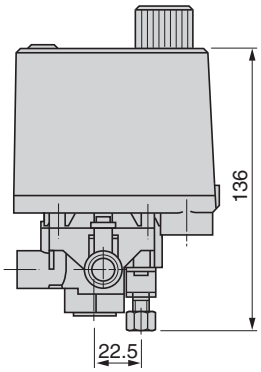

XMP●25●21●●: ØA only = G 1/4 (female)

XMP●25●24●●: ØA = ØB = ØC = ØD = G 1/4 (female)

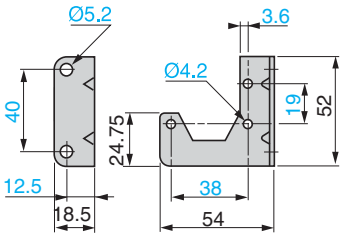
*(1) 2 tapped entries for n° 13 cable gland*

*(2) Minimum clearance zone for screwing-on pressure switch at point A*

**With straight, olive connection, decompression valve**




### Fixing bracket XMA ZL001



# Electromechanical pressure and vacuum switches
OsiSense XM

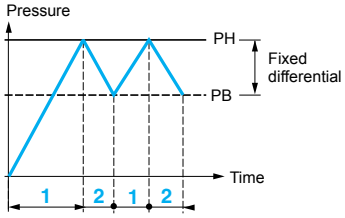


## Function
The function of pressure and vacuum switches is the control or regulation of pressure or vacuum levels in hydraulic or pneumatic systems.
They transform the pressure change into a digital electrical signal when the preset switching points are reached.

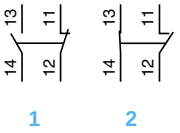
### Switches for power circuits
Switches with power electrical contacts, either 2-pole or 3-pole, designed for direct switching of single-phase or 3-phase motors (pumps, compressors, etc.).

### Switches for control circuits
Switches with standard electrical contacts, designed for control of contactors, relays, power valves, PLC inputs, etc.

## Pressure switch operating principle
### Detection of a single threshold
The switches for detection of a single threshold (fixed differential) have a single adjustable setting point (PH). The differential between the high and low points (PH - PB) depends upon the natural characteristics of the switch. It is not adjustable.



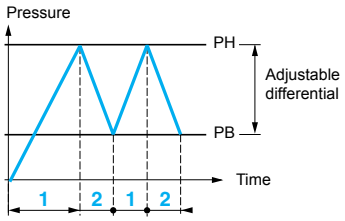

Example: contact schematics of XML A



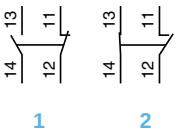

–– Adjustable value
--- Non adjustable value

PH = High point
PB = Low point

### Regulation between 2 thresholds
The switches for regulation between 2 thresholds (adjustable differential) have both a high point setting (PH) and a low point setting (PB). Both of these points can be independently adjusted.



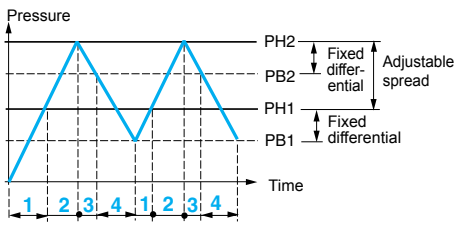

Example: contact schematics of XML B



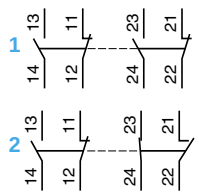

–– Adjustable value

PH = High point
PB = Low point

### Detection of 2 thresholds
The dual stage switches, for detection at each threshold, have an adjustable high point setting for each stage (PH1 and PH2). Both of these points can be independently adjusted. For both stages, the differential between the high point and the low point (PH1 - PB1 and PH2 - PB2) depends upon the natural characteristics of the switch. It is not adjustable.

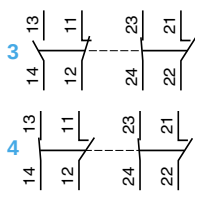



Example: contact schematics of XML D




–– Adjustable value
--- Non adjustable value

PH = High point
PB = Low point



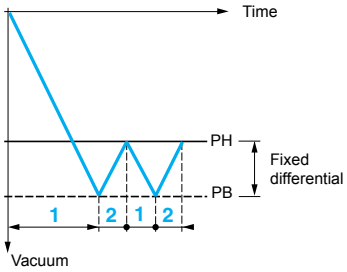
# Electromechanical pressure and vacuum switches
## OsiSense XM



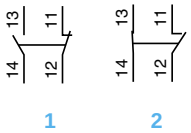
## Vacuum switch operating principle

### Detection of a single threshold

The switches for detection of a single threshold (fixed differential) have a single adjustable setting point (PH). The differential between the high and low points (PH - PB) depends upon the natural characteristics of the switch. It is not adjustable.




Example: contact schematics of XML A

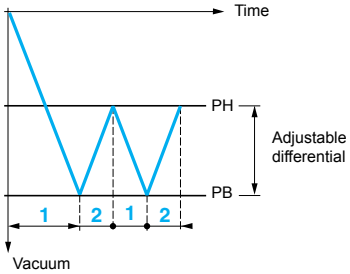



–– Adjustable value
--- Non adjustable value

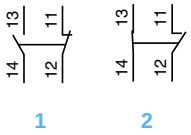
PH = High point
PB = Low point

### Regulation between 2 thresholds

The switches for regulation between 2 thresholds (adjustable differential) have both a high point setting (PH) and a low point setting (PB). Both of these points can be independently adjusted.




Example: contact schematics of XML B

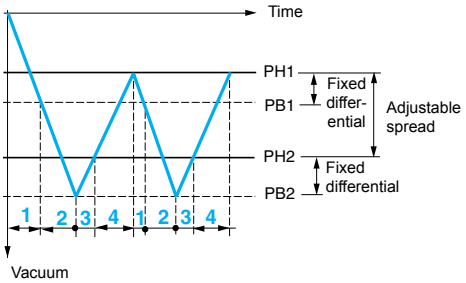



–– Adjustable value

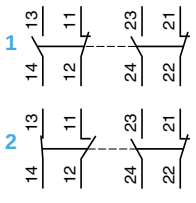
PH = High point
PB = Low point

### Detection of 2 thresholds

The dual stage switches, for detection at each threshold, have an adjustable high point setting for each stage (PH1 and PH2). Both of these points can be independently adjusted.
For both stages, the differential between the high point and the low point (PH1 - PB1 and PH2 - PB2) depends upon the natural characteristics of the switch. It is not adjustable.

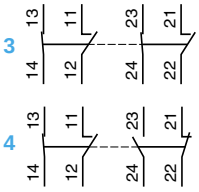



Example: contact schematics of XML D




–– Adjustable value
--- Non adjustable value

PH = High point
PB = Low point



# Electromechanical pressure and vacuum switches
OsiSense XM



## Terminology

### Operating range
The difference between the minimum low point (PB) and the maximum high point (PH) setting values.

### Size
**Pressure switches and vacuum-pressure switches (vacu-pressure switches)**
Maximum value of the operating range.

**Vacuum switches**
Minimum value of the operating range.

### Switching point on rising pressure (PH)
**Pressure switches**
The upper pressure setting at which the pressure switch will actuate the contacts on rising pressure.

**Vacuum switches**
The lower vacuum setting at which the vacuum switch will reset the contacts on rising pressure.

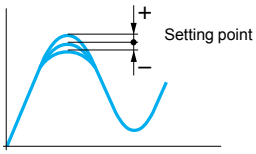
### Switching point on falling pressure (PB)
The pressure at which the switch output changes state on falling pressure.

**Switches with fixed differential**
The lower point (PB) is not adjustable and is entirely dependent on the high point setting (PH) and the natural differential of the switch.

**Switches with adjustable differential**
The adjustable differential enables the independent setting of the lower point (PB).

### Differential
The difference between the switching point on rising pressure (PH) and the switching point on falling pressure (PB).

### Spread
For dual stage switches, the spread indicates the difference between the 2 switching points on rising pressure (PH2 and PH1) and, for vacuum switches, the difference between the 2 switching points on falling pressure (PB2 and PB1).

### Accuracy (switches with setting scale)


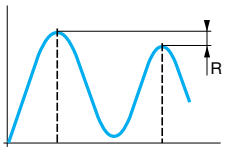

The tolerance between the point at which the switch actuates its contacts and the value indicated on the setting scale. Where very high setting accuracy is required (initial installation of the product), it is recommended to use separate measuring equipment (pressure gauge, etc.).

# Electromechanical pressure and vacuum switches
OsiSense XM



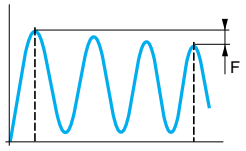
## Terminology (continued)

### Repeat accuracy (R)



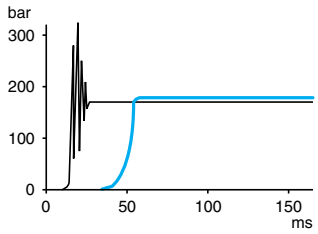

The tolerance between two consecutive switching operations.

### Drift (F)

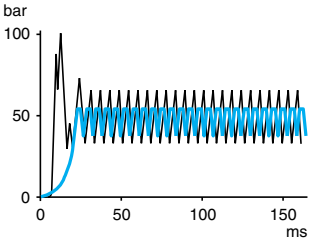



The tolerance of the switching point throughout the entire service life of the switch.

### Accidental overpressure




Example 1: with destructive pressure level.




Example 2: with destructive pressure level and destructive pressure oscillations.

——— Without damping device
——— With damping device

This is an accidental pressure surge of very short duration (a few milliseconds).

If accidental overpressures occur and their duration is less than 50 milliseconds, the pressure damping device incorporated in the XML switches (sizes 10 bar and greater) will diminish the effect.

### Maximum permissible pressure per cycle (Ps)

A pressure switch can withstand this pressure, without detrimental effect, on each cycle throughout its service life.

Its minimum value is at least equal to 1.25 times the switch size.

### Maximum permissible accidental pressure

The maximum accidental pressure is at least equal to 2.25 times the switch size.

### Destruction pressure

The maximum guaranteed pressure that the switch will withstand before its destruction, i.e. bursting, rupturing, component failure, etc.

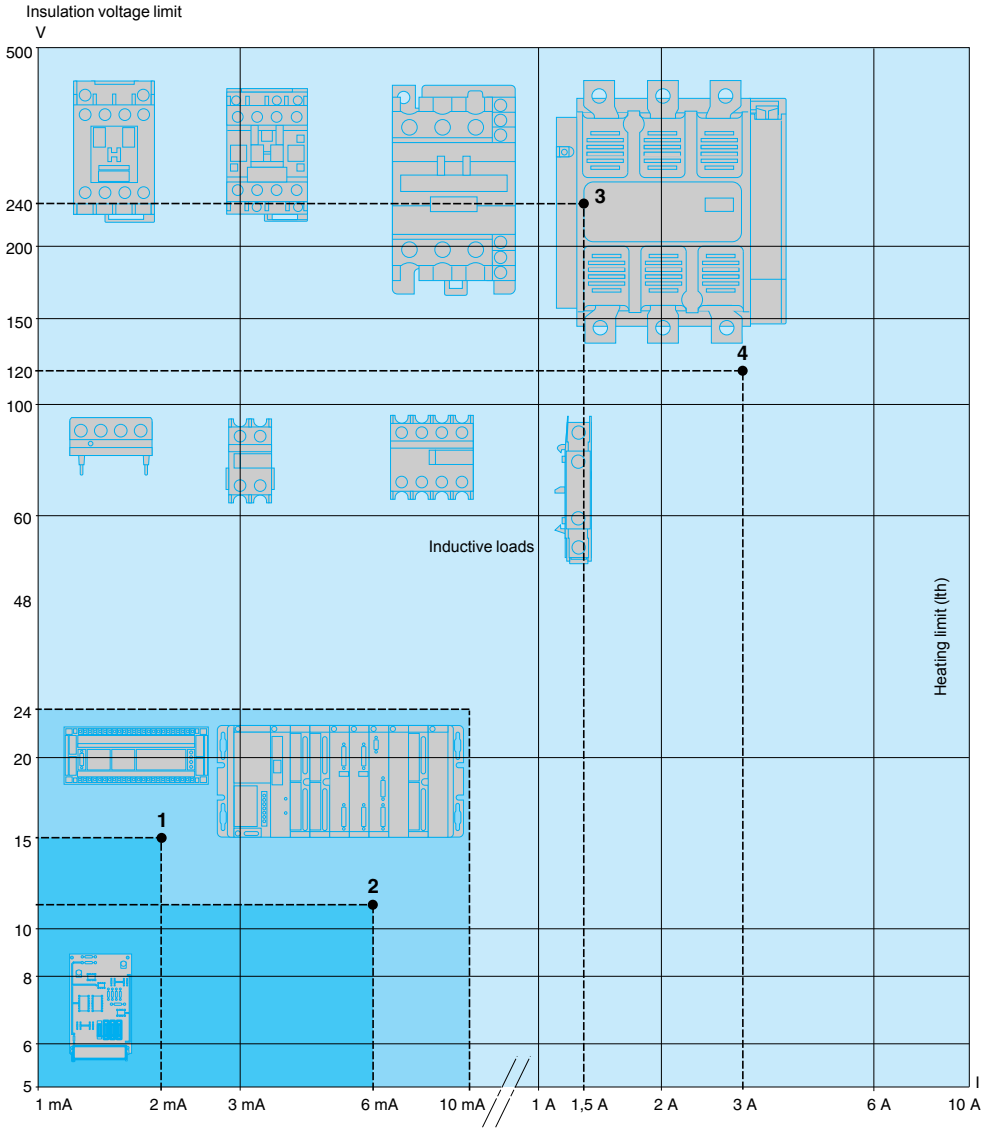
Its value is at least equal to 4.5 times the switch size.

# Electromechanical pressure and vacuum switches
OsiSense XM

2

## Application range of pressure and vacuum switches types XML, XMA and XMX, for control circuits

On standard loads
Continuous duty, frequent switching.




1 Standard PLC input, type 1
2 Standard PLC input, type 2
3 Switching capacity conforming to IEC 947-5-1, utilisation category AC-15, DC-13
B300 240 V 1.5 A
R300 250 V 0.1 A
4 Switching capacity conforming to IEC 947-5-1, utilisation category AC-15, DC-13
B300 120 V 3 A
R300 125 V 0.22 A
PLC: Programmable Logic Controller

| Pressure switches | Application range |
|---|---|
| XML A<br>XML B<br>XML C<br>XML D<br>XMX, XMA | |
| XML E<br>XML F<br>XML G<br>XML K | |

**On small loads**
The use of electromechanical pressure and vacuum switches with programmable logic controllers is becoming more predominant.
On small loads, the reliability of the switches maintain a failure rate of less than 1 for 100 million operating cycles.

# Electromechanical pressure and vacuum switches
OsiSense XM

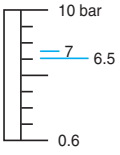


## Selection of switch size

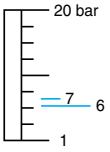
After establishing the type of switch required for the application (single threshold detection or regulation between 2 thresholds), the selection of its size will depend on the following criteria:
- the differential: difference between the high point (PH) and the low point (PB),
- the maximum pressure permissible per cycle,
- repeat accuracy, precision and minimum drift.

### Examples of a fixed differential pressure switch selection, for detection of a single threshold

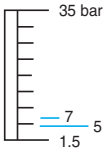
**Main criterion: minimum differential**
Example: for a selected high point (PH) of 7 bar




XML A010●●●●●
Differential = 0.5 bar



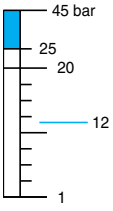

XML A020●●●●●
Differential = 1 bar



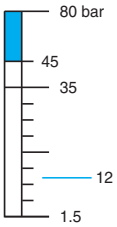

XML A035●●●●●
Differential = 2 bar

Select an XML A010●●●●● (the lowest size)

**Main criterion: tolerance to overpressures**
Example: for a selected high point (PH) of 12 bar



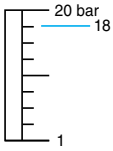

XML A020●●●●●
Permissible accidental overpressure = 45 bar



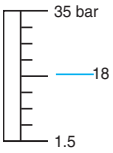

XML A035●●●●●
Permissible accidental overpressure = 80 bar

Select an XML A035●●●●● (the highest size)

**Main criterion: repeat accuracy, precision and minimum drift**
Example: for a selected high point (PH) of 18 bar




XML A020●●●●●
Adjustable from 1 to 20 bar




XML A035●●●●●
Adjustable from 1.5 to 35 bar

Select an XML A035●●●●●

As a general rule, working at the upper or lower limits of the operating range should be avoided.

## Units of pressure conversion table

| | psi | kg/cm² | bar | atm | mm Hg (Torr) | mm $H_2O$ | Pa |
|---|---|---|---|---|---|---|---|
| **1 psi =** | 1 | 0.07031 | 0.06895 | 0.06805 | 51.71 | 703.7 | 6895 |
| **1 kg/cm² =** | 14.22 | 1 | 0.98066 | 0.96784 | 735.55 | 10 000 | 98 066 |
| **1 bar =** | 14.50 | 1.0197 | 1 | 0.98695 | 750.06 | 10 197 | $10^5$ |
| **1 atm =** | 14.70 | 1.0333 | 1.0132 | 1 | 760.0 | 10 333 | 101 325 |
| **1 mm Hg (Torr) =** | 0.01934 | $1.360 \times 10^{-3}$ | $1.333 \times 10^{-3}$ | $1.316 \times 10^{-3}$ | 1 | 13.59 | 133.3 |
| **1 mm $H_2O$ =** | $1.421 \times 10^{-3}$ | $10^{-4}$ | $\sim 10^{-4}$ | $\sim 10^{-4}$ | 0.07361 | 1 | $\sim 9.80$ |
| **1 Pa =** | $1.45 \times 10^{-4}$ | $1.0197 \times 10^{-5}$ | $10^{-5}$ | $9.8695 \times 10^{-6}$ | $7.5 \times 10^{-3}$ | 0.10197 | 1 |

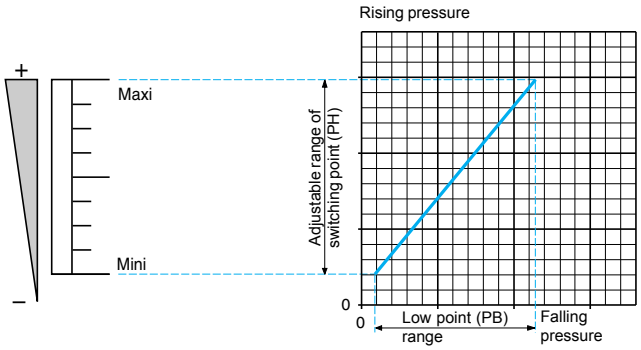
Example: 1 bar = 14.50 psi = $10^5$ Pa

# Electromechanical pressure and vacuum switches

## Fixed differential switches, for detection of a single threshold



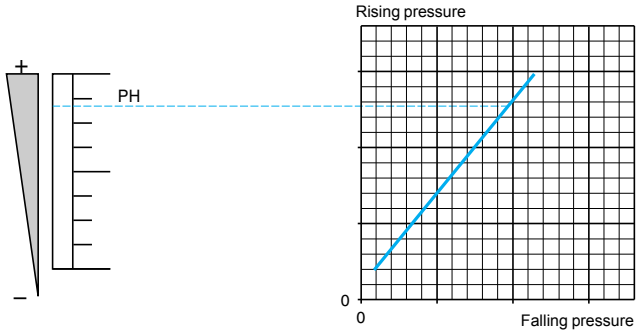
### Adjustment range of the high point




Defined by the difference between the minimum and maximum high point (PH) setting values.

For a high set point (PH), the lower point (PB) is fixed and cannot be adjusted.
For a low set point (PB1 or PB2), the higher point (PH1 or PH2) is fixed and cannot be adjusted.

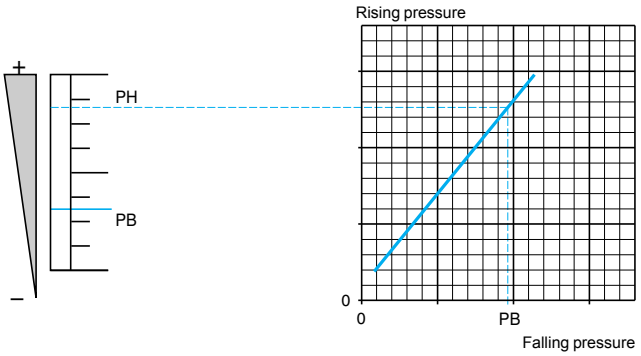
### Switching point on rising pressure (PH)




The upper pressure setting at which the pressure or vacuum switch will actuate the contacts on rising pressure.

Adjustable throughout the range on rising pressure.

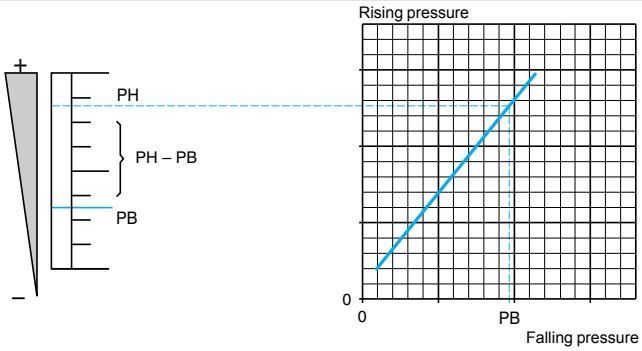
### Switching point on falling pressure (PB)




The pressure at which the switch contact changes state on falling pressure.

The lower point (PB) is not adjustable and is entirely dependent on the high point setting (PH) and the natural differential of the switch.

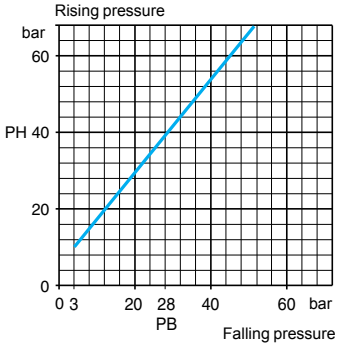
### Differential




PH - PB = natural differential
The difference between the switching point on rising pressure (PH) and the switching point on falling pressure (PB).

This point is not adjustable and therefore, the value of the differential is fixed.
It is the natural differential of the switch (contact differential, friction, etc.).

### Example



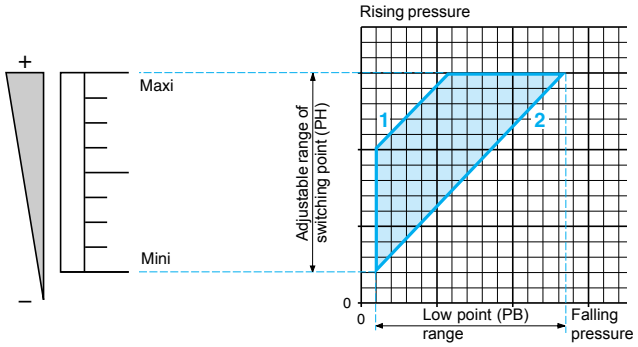

■ Consider a switching point on rising pressure (PH) of 40 bar (set value at which the contact will change state on rising pressure).
■ It can be seen that the switching point on falling pressure (PB) is 28 bar (fixed value at which the contact will return to its original state).
Conclusion:
□ the differential will be 40 - 28 = 12 bar.

# Electromechanical pressure and vacuum switches

## Adjustable differential switches, for regulation between 2 thresholds

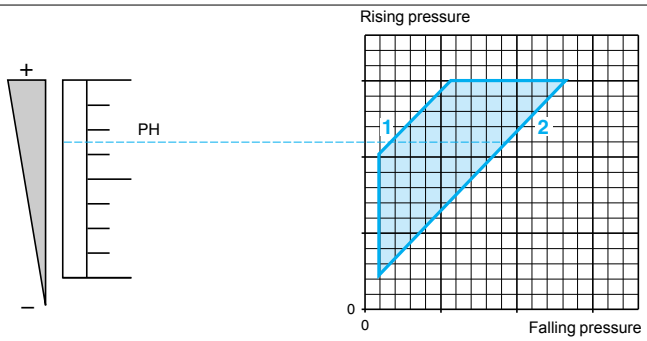


### Adjustment range of the high point




Defined by the difference between the minimum and maximum high point (PH) setting values.

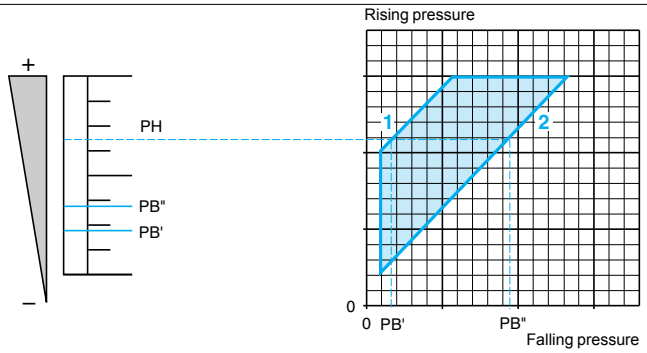
### Switching point on rising pressure (PH)




The upper pressure setting at which the pressure or vacuum switch will actuate the contacts on rising pressure.

Adjustable throughout the range on rising pressure.

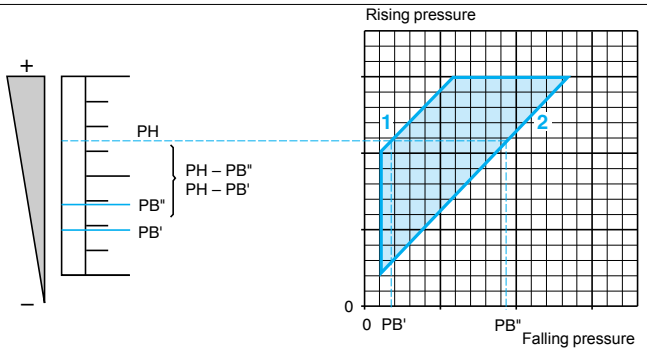
### Switching point on falling pressure (PB)




The pressure at which the switch contact changes state on falling pressure.

The adjustable differential enables the independent setting of the lower point (PB).

### Differential

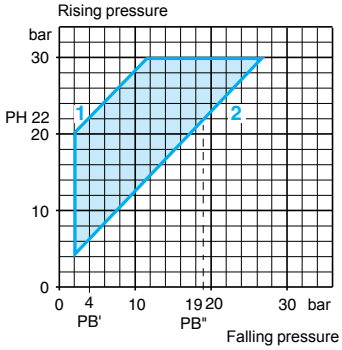



Low point < High point
PH - PB' = natural differential
PH - PB" = minimum differential

The difference between the switching point on rising pressure (PH) and the switching point on falling pressure (PB).

***Note:*** *the low point can be set at any value between PB' and PB".*

### Example




1 Maximum differential
2 Minimum differential

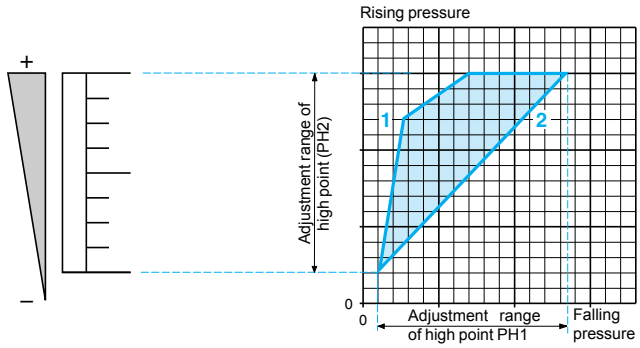
■ Consider a switching point on rising pressure (PH) of 22 bar (set value at which the contact will change state on rising pressure).
■ It can be seen that the switching point on falling pressure (PB) can be between 4 and 19 bar inclusive (set value at which the contact will return to its original state).
Conclusion:
□ the maximum differential will be: 22 - 4 = 18 bar,
□ the minimum differential will be: 22 - 19 = 3 bar.

# Electromechanical pressure and vacuum switches

## Dual stage, fixed differential switches, for detection at each threshold

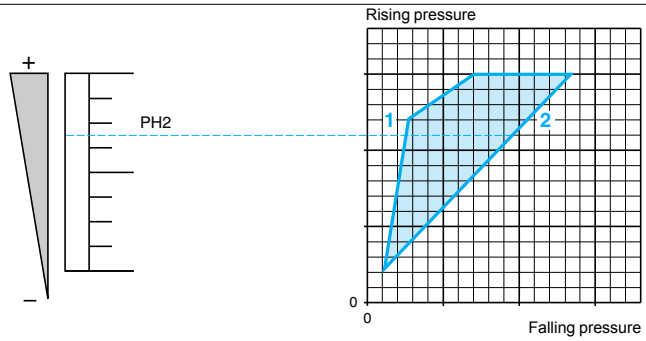


### Adjustment ranges of the switching points PH1 and PH2 on rising pressure




Defined by the difference between the minimum and maximum high point setting values of each stage (PH1 and PH2).

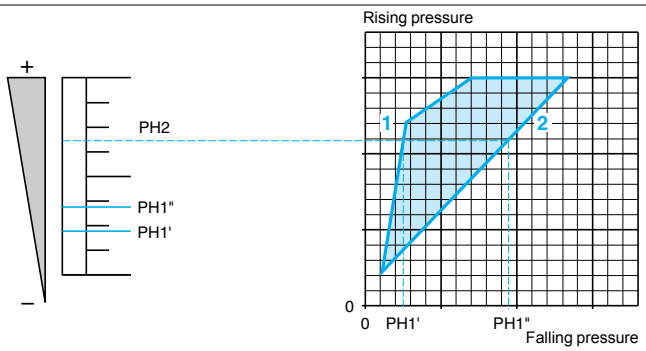
### Switching point PH2 on rising pressure




The upper pressure setting at which the pressure or vacuum switch will actuate the contacts on rising pressure.

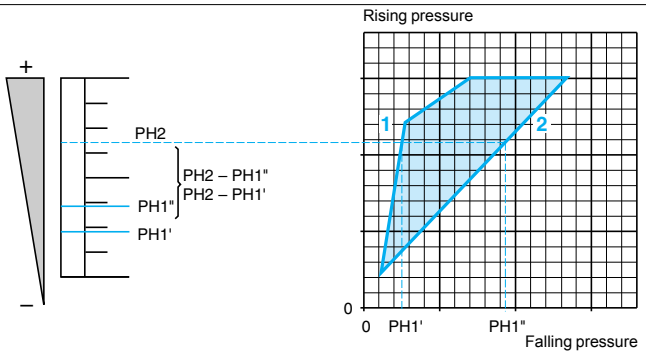
Adjustable throughout the range on rising pressure.

### Switching point PH1 on rising pressure




The upper pressure setting at which the pressure or vacuum switch will actuate contact 1 on rising pressure.

### Spread

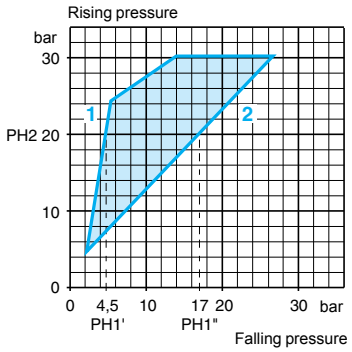



PH1 < PH2
PH2 - PH1' = maximum spread
PH2 - PH1" = minimum spread

The difference between switching points PH2 and PH1 on rising pressure.

***Note:*** *switching point PH1 can be set at any value between PH1' and PH1".*

### Example: Determining switching points on rising pressure for the 2 stages




1 Maximum spread
2 Minimum spread

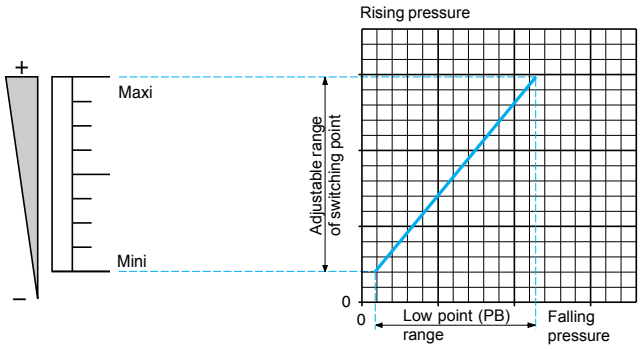
■ Consider a 2nd stage switching point on rising pressure (PH2) of 20 bar (set value at which contact 2 will change state on rising pressure).
■ It can be seen that the 1st stage switching point (PH1) can be set between 4.5 and 17 bar on rising pressure.
Conclusion:
□ the maximum spread will be:
20 - 4.5 = 15.5 bar,
□ the minimum spread will be:
20 - 17 = 3 bar.

# Electromechanical pressure and vacuum switches

## Dual stage, fixed differential switches, for detection at each threshold



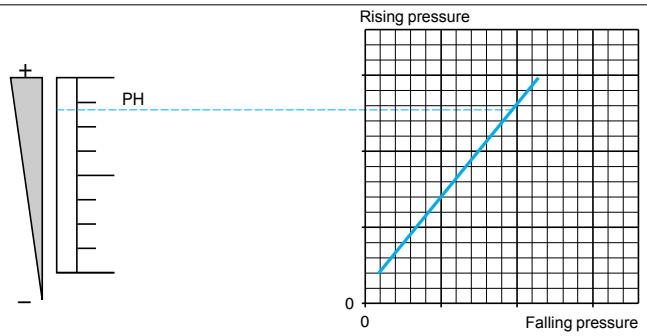
### Adjustment range of high point (PH1 or PH2)




Defined by the difference between the minimum and maximum high point (PH1 or PH2) setting values for each stage.

For a high set point (PH), the lower point (PB) is fixed and cannot be adjusted.
For a low set point (PB1 or PB2), the higher point (PH1 or PH2) is fixed and cannot be adjusted.

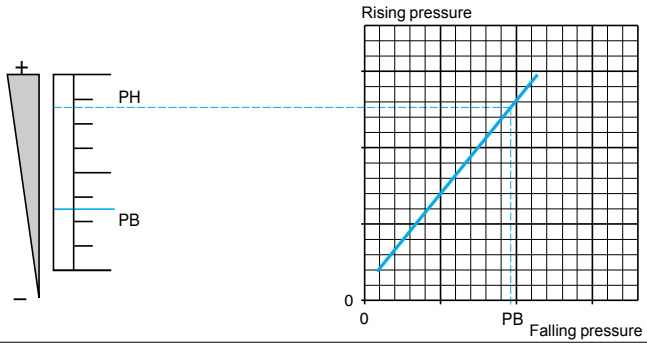
### Switching point on rising pressure (PH1 or PH2)




The upper pressure setting at which the pressure or vacuum switch will actuate the contact, for each stage, on rising pressure.

Adjustable throughout the range on rising pressure.

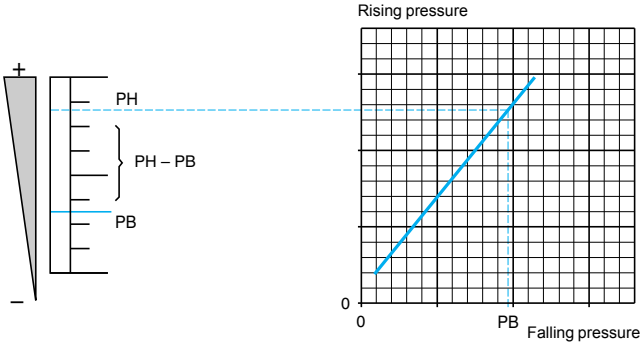
### Switching point on falling pressure (PB1 or PB2)




The pressure at which the switch contact changes state, for each stage, on falling pressure.

The lower point (PB) is not adjustable and is entirely dependent on the high point setting (PH) and the natural differential of the switch.

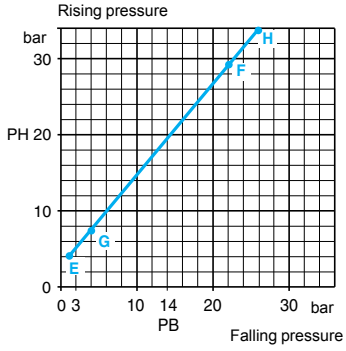
### Differential




PH - PB = natural differential
The difference between the switching point on rising pressure (PH) and the switching point on falling pressure (PB), for each stage.

This point is not adjustable and therefore, the value of the differential is fixed.
It is the natural differential of the switch (contact differential, friction, etc.), for each of its 2 stages.

### Example: stage 1 = segment EF stage 2 = segment GH




1 Maximum spread
2 Minimum spread

For stage 2 (segment GH):
- Consider a switching point on rising pressure (PH2) of 20 bar (set value at which contact 2 will change state on rising pressure).
- It can be seen that the switching point on falling pressure (PB2) is 14 bar (fixed value at which contact 2 will return to its original state).

Conclusion:
for stage 2, the differential will be:
20 - 14 = 6 bar.
Repeat the same procedure for stage 1 (segment EF).