

Electronic pressure sensors, Pressure sensors  
XM, XMLR 600 bar, G 1/4, 24 VDC, 4...20 mA,  
PNP, M12



## Main

|                                         |                                                                                                                  |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Range of product                        | Telemecanique Pressure sensors XM                                                                                |
| Product or component type               | Electronic pressure sensors                                                                                      |
| Pressure sensor type                    | Pressure transmitter                                                                                             |
| Pressure switch type of operation       | Pressure transmitter with 1 switching output                                                                     |
| Device short name                       | XMLR                                                                                                             |
| Pressure rating                         | 59984.4 KPa<br>600 bar                                                                                           |
| Maximum permissible accidental pressure | 149961.0 KPa<br>1500 Bar<br>150 MPa                                                                              |
| Destruction pressure                    | 250 MPa<br>249934.9 KPa<br>2500 bar                                                                              |
| Controlled fluid                        | Fresh water (0...80 °C)<br>Air (-20...80 °C)<br>Hydraulic oil (-20...80 °C)<br>Refrigeration fluid (-20...80 °C) |
| Fluid connection type                   | G 1/4 (female) conforming to DIN 3852-Y                                                                          |
| [Us] rated supply voltage               | 24 V DC SELV (voltage limits: 17...33 V)                                                                         |

## Complementary

|                                                         |                                                                                           |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Current consumption                                     | <= 50 mA                                                                                  |
| Electrical connection                                   | Male connector M12, 4 pins                                                                |
| Analogue output function                                | 4...20 mA                                                                                 |
| Type of output signal                                   | Analogue + discrete                                                                       |
| Analogue output function                                | 4...20 mA                                                                                 |
| Discrete output type                                    | Solid state PNP, NO/NC programmable                                                       |
| Maximum switching current                               | 250 mA                                                                                    |
| Contacts type and composition                           | NO/NC programmable                                                                        |
| Scale type                                              | Fixed differential                                                                        |
| Maximum voltage drop                                    | 2 V                                                                                       |
| Adjustable range of switching point on rising pressure  | 4.8...60 MPa<br>48...600 Bar<br>4798.8...59984.4 kPa                                      |
| Adjustable range of switching point on falling pressure | 30...582 Bar<br>2999.2...58184.9 KPa<br>3...58.2 MPa                                      |
| Minimum differential travel                             | 1799.5 KPa<br>1.8 MPa<br>18 bar                                                           |
| Materials in contact with fluid                         | 316L stainless steel                                                                      |
| Front material                                          | Polyester                                                                                 |
| Housing material                                        | 316L stainless steel<br>Polyacrylamide                                                    |
| Operating position                                      | Any position, but disposals can falsified the measurement in case of upside down mounting |

The information provided in this documentation contains general descriptions and/or technical characteristics of the products of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither TWSS Holding nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protection type                          | Reverse polarity<br>Overvoltage protection<br>Overload protection<br>Short-circuit protection                                                                                                                                                                                                                                                                                                                                |
| Response time on output                  | $\leq 10$ ms for analog output<br>$\leq 5$ ms for discrete output                                                                                                                                                                                                                                                                                                                                                            |
| Switching output time delay              | 0...50 s in steps of 1 second                                                                                                                                                                                                                                                                                                                                                                                                |
| Display type                             | 4 digits 7 segments                                                                                                                                                                                                                                                                                                                                                                                                          |
| Local signalling                         | 1 LED (yellow) for light ON when switch is actuated                                                                                                                                                                                                                                                                                                                                                                          |
| Display response time type               | Fast 50 ms<br>Normal 200 ms<br>Slow 600 ms                                                                                                                                                                                                                                                                                                                                                                                   |
| Maximum delay first up                   | 300 ms                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Overall accuracy                         | $\leq 1$ % of the measuring range                                                                                                                                                                                                                                                                                                                                                                                            |
| Linearity error on analogue output       | $\leq 0.5$ % of the measuring range                                                                                                                                                                                                                                                                                                                                                                                          |
| Hysteresis on analogue output            | $\leq 0.2$ % of the measuring range                                                                                                                                                                                                                                                                                                                                                                                          |
| Measurement accuracy on switching output | $\leq 0.6$ % of the measuring range                                                                                                                                                                                                                                                                                                                                                                                          |
| Repeat accuracy                          | $\leq 0.2$ % of the measuring range                                                                                                                                                                                                                                                                                                                                                                                          |
| Drift of the sensitivity                 | $\pm 0.03$ % of measuring range/ $^{\circ}\text{C}$                                                                                                                                                                                                                                                                                                                                                                          |
| Drift of the zero point                  | $\pm 0.1$ % of measuring range/ $^{\circ}\text{C}$                                                                                                                                                                                                                                                                                                                                                                           |
| Display accuracy                         | $\leq 1$ % of the measuring range                                                                                                                                                                                                                                                                                                                                                                                            |
| Mechanical durability                    | 10000000 cycles                                                                                                                                                                                                                                                                                                                                                                                                              |
| Depth                                    | 42 mm                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Height                                   | 88 mm                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Width                                    | 41 mm                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Net weight                               | 0.186 kg                                                                                                                                                                                                                                                                                                                                                                                                                     |
| [Uimp] rated impulse withstand voltage   | 0.5 kV DC                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Electromagnetic compatibility            | Susceptibility to electromagnetic fields: 10 V/m 80...2000 MHz conforming to IEC 61000-4-3<br>Immunity to conducted RF disturbances: 10 V 0.15...80 MHz conforming to IEC 61000-4-6<br>Surge immunity test: 1 kV conforming to IEC 61000-4-5<br>Electrical fast transient/burst immunity test: 2 kV conforming to IEC 61000-4-4<br>Electrostatic discharge immunity test: 8 kV air, 4 kV contact conforming to IEC 61000-4-2 |

## Environment

|                                       |                                                              |
|---------------------------------------|--------------------------------------------------------------|
| Marking                               | CE                                                           |
| Product certifications                | cULus                                                        |
| Standards                             | UL 61010-1<br>IEC 61326-2-3                                  |
| Ambient air temperature for operation | -20...80 $^{\circ}\text{C}$                                  |
| Ambient air temperature for storage   | -40...80 $^{\circ}\text{C}$                                  |
| IP degree of protection               | IP65 conforming to IEC 60529<br>IP67 conforming to IEC 60529 |
| Vibration resistance                  | 20 gn ( $f = 10 \dots 2000$ Hz) conforming to IEC 60068-2-6  |
| Shock resistance                      | 50 gn conforming to IEC 60068-2-27                           |

## Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 6.5 cm  |
| Package 1 Width              | 7.5 cm  |
| Package 1 Length             | 12.7 cm |
| Package 1 Weight             | 181.0 g |

## Offer Sustainability

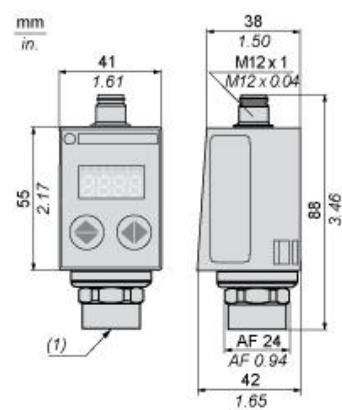
California proposition 65

WARNING: This product can expose you to chemicals including: Diisononyl phthalate (DINP), which is known to the State of California to cause cancer, and Di-isodecyl phthalate (DIDP), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

For all Reach Rohs enquiries contact us at

[sustainability@tesensors.com](mailto:sustainability@tesensors.com)

## Dimensions



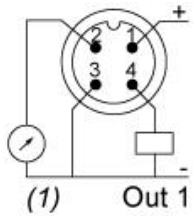
(1) Fluid entry: G 1/4 A female

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## Connections and Schema

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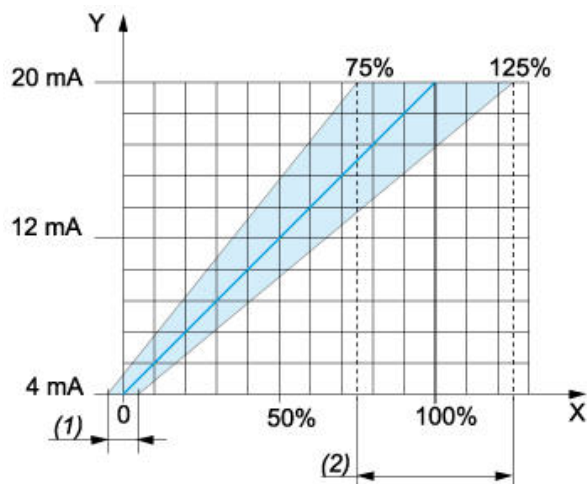
### Connector Wiring



(1) I Out or V Out

## Analogue Output Description

Analogue Output Signal



X : Pressure

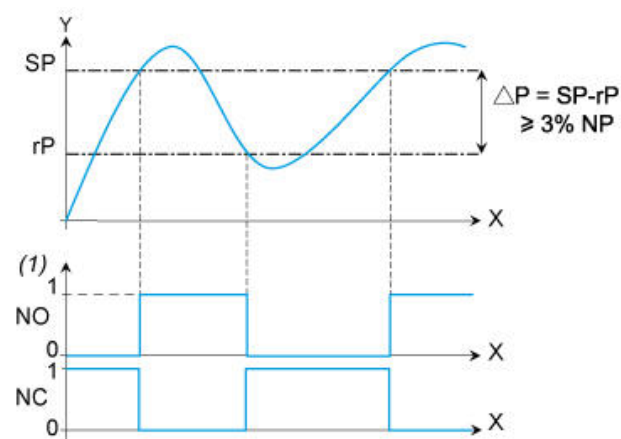
Y : Analogue output signal

(1) An offset of +/-5% of nominal pressure can be compensated (with Cof Configuration menu. Cof: Offset Compensation)

(2) The analogue curve can be adjusted from -25% to +25% of nominal pressure (with AEP Configuration menu. AEP: analogue end point).

## Switching Output Description. Hysteresis Mode

The hysteresis switching mode is typically used for the "pumping and/or emptying applications".



X : Time

Y : Pressure

(1) Output

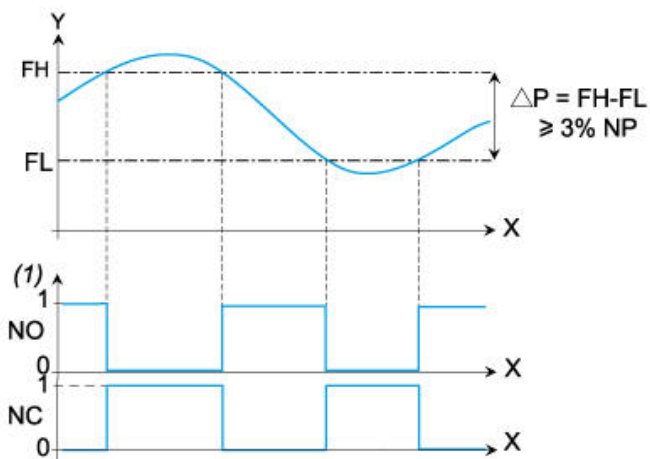
NP : Nominal Pressure

SP : Set point (adjustable from 8 % to 100 % NP)

rP : Reset point (adjustable from 5 % to 97 % NP)

## Switching Output Description. Window Mode

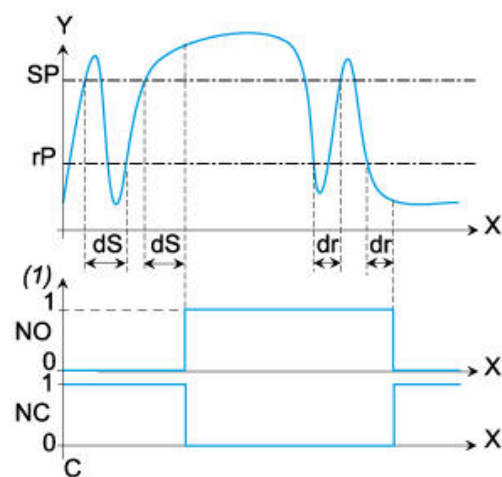
The window switching mode is typically used for the "pressure regulation applications"



X : Time  
Y : Pressure  
(1) Output  
NP : Nominal pressure  
FH : High switching point (adjustable from 8 % to 100 % NP)  
FL : Low switching point (adjustable from 5 % to 97 % NP)

### Switching Output Description. Time Delay

The Time Delay is typically used to filter out the fast pressure transients.  
The output only switches after a time "dS" and "dr" adjustable from 0 to 50 seconds.



X : Time  
Y : Pressure  
(1) Output  
SP : Set point  
rP : Reset point  
dS : Time delay on the set point  
dr : Time delay on the reset point