

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.

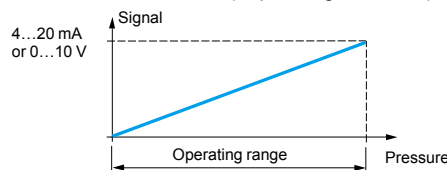
Universal sensors

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.

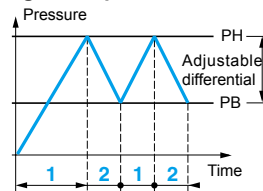


Pressure and vacuum switches

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.

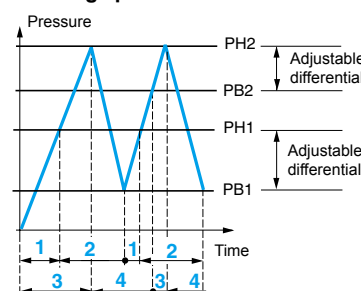
Operating principle with solid-state NC outputs

Pressure switches with digital output

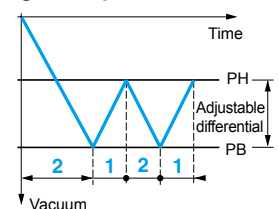


- 1 Output on
- 2 Output off

Dual stage pressure switches



Vacuum switches with digital output



- 1 Output on
- 2 Output off

- 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

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.

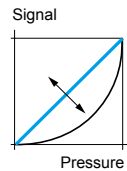
Operating range

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.

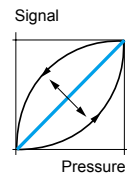
The operating range of a pressure or vacuum switch is the difference between the minimum low point (PB) and the maximum high point (PH) setting values.

Precision

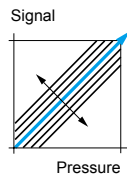
This comprises linearity, hysteresis, repeat accuracy and setting tolerances. It is expressed as a % of the measuring range (MR) of the load cell (% MR).



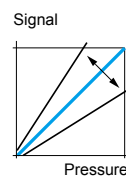
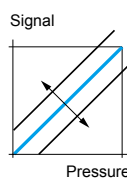
The **linearity** is the maximum deviation between the real transmitted curve and the ideal curve.



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



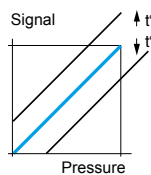
The **repeat accuracy** is the maximum drift encountered at varying pressures under given conditions.



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

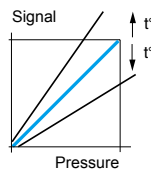
Temperature drift

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.

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:

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

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

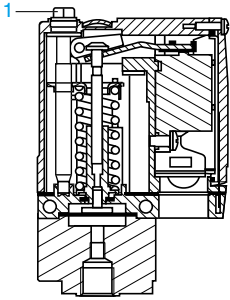
Switching point on rising pressure

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.).



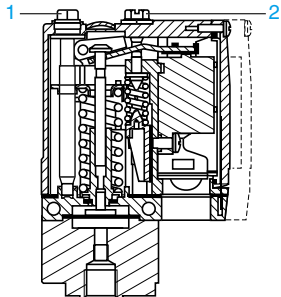
Pressure and vacuum switches with adjustable differential, types XML B and XML C

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

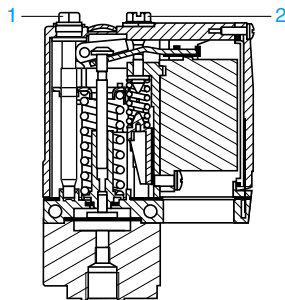
The first stage switching point on rising pressure (PH1) is set by adjusting the red screw **1**.

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

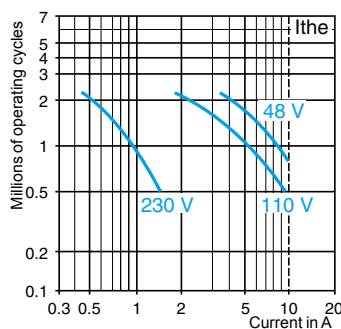
Environment characteristics		
Conformity to standards		CE, IEC/EN 60947-5-1, UL 508, CSA C22-2 n° 14
Product certifications		UL, CSA, CCC, BV, LROS, RINA, GL, DNV, VIT-SEPRO
Protective treatment		Standard version "TC". Special version "TH"
Ambient air temperature	°C	For operation: - 25...+ 70. For storage: - 40...+ 70
Fluids or products controlled		Hydraulic oils, air, fresh water, sea water (0...+ 160°C), depending on model Steam, corrosive fluids, viscous products (0...+ 160°C), depending on model
Materials		Case: zinc alloy 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●●●●●, 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 Connector models: IP 65 conforming to IEC/EN 60529
Operating rate	Op. cycles/min	Piston version switches: ≤ 60 (for temperature > 0°C) 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 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) For an entry tapped 1/2" NPT, please consult our Customer Care Centre 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) --- 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 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 XML A and XML B: 1 CO single-pole contact (4 terminal), snap action XML C: 2 CO single-pole contacts (8 terminal), simultaneous, snap action 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. Minimum clamping capacity: 1 x 0.2 mm ² , max: 2 x 2.5 mm ²

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

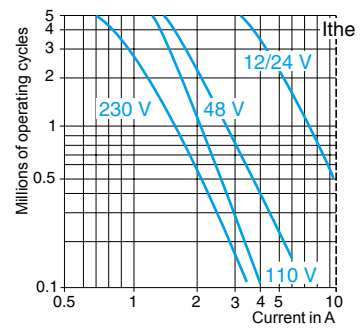
XML A and XML B
AC supply ~ 50/60 Hz
~m. Inductive circuit, Ithe = 10 A



DC supply ---
Power broken in W
for 1 million operating cycles

Voltage V	24	48	120
~m W	31	29	26

XML C and XML D
AC supply ~ 50/60 Hz
~m. Inductive circuit, Ithe = 10 A



DC supply ---
Power broken in W
for 5 million operating cycles

Voltage V	24	48	120
~m W	10	7	4

Electromechanical vacuum switches

OsiSense XM, type XML

Size - 1 bar (- 14.5 psi)

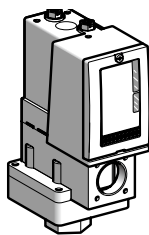
Adjustable differential, for regulation between 2 thresholds

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)

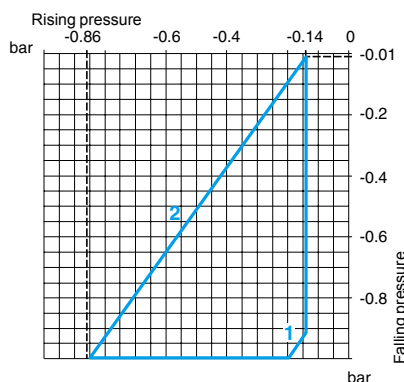
Possible differential (add to PB to give PH)	Min. at low setting (3)	0.13 bar (1.89 psi)
	Min. at high setting (3)	0.14 bar (2.03 psi)
	Max. at high setting	0.8 bar (11.6 psi)
Maximum permissible pressure	Per cycle	5 bar (72.5 psi)
	Accidental	9 bar (130.5 psi)
Destruction pressure		18 bar (261 psi)
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).

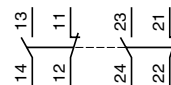
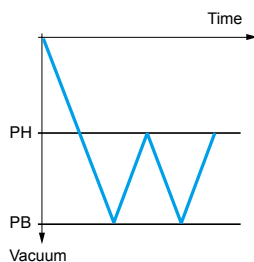
Operating curves



- 1 Maximum differential
- 2 Minimum differential

Connection

Terminal model



— Adjustable value

Other versions

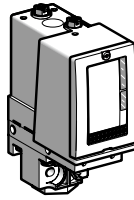
Vacuum switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

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

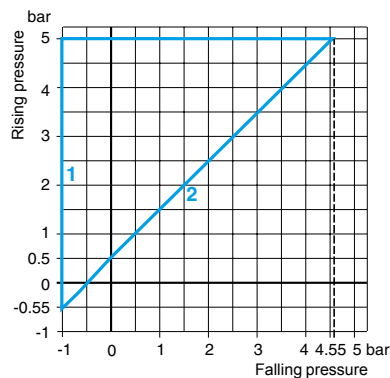
Possible differential (subtract from PH to give PB)	Min. at low setting (3)	0.45 bar (6.52 psi)
	Min. at high setting (3)	0.45 bar (6.52 psi)
	Max. at high setting	6 bar (87 psi)
Maximum permissible pressure	Per cycle	6.25 bar (90.62 psi)
	Accidental	11.25 bar (163.12 psi)
Destruction pressure		23 bar (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).

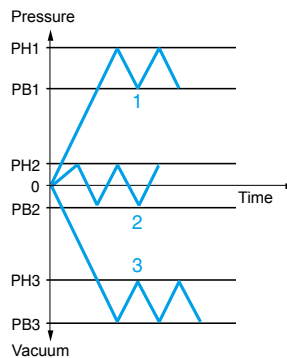
(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.

(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



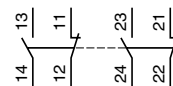
- 1 Maximum differential
- 2 Minimum differential



— Adjustable value

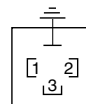
Connection

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.

Electromechanical pressure switches

OsiSense XM, type XML

Size 350 mbar (5.07 psi)

Adjustable differential, for regulation between 2 thresholds

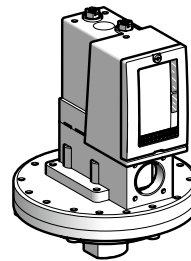
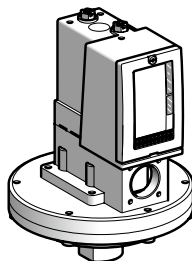
Switches with 2 CO single-pole contacts

Fluid connection G 1/4 (female)

Pressure switches type XML C

With setting scale

30 bar (435 psi) overpressure
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).

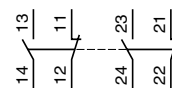
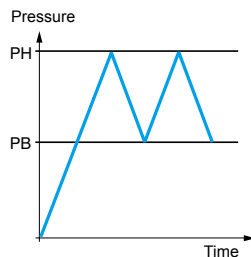
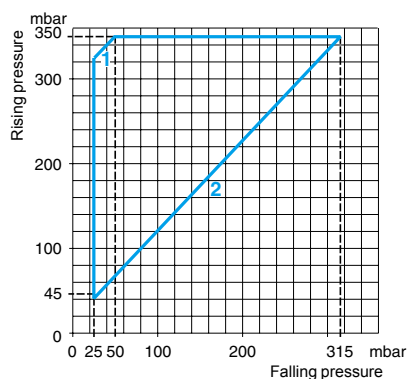
(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.

(3) Deviation of the differential at low setting point for switches of the same size: ± 20 mbar (± 0.29 psi).

Operating curves

Connection

Terminal model



- 1 Maximum differential
- 2 Minimum differential

— Adjustable value

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 1 bar (14.5 psi)

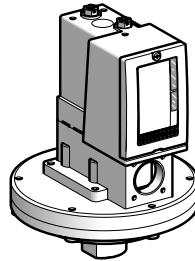
Adjustable differential, for regulation between 2 thresholds

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.

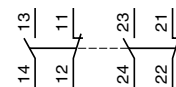
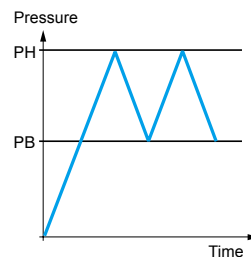
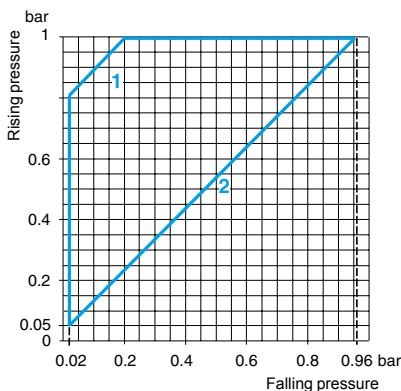
(3) Deviation of the differential at low setting point for switches of the same size: ± 0.01 bar (± 0.14 psi).

(4) Deviation of the differential at high setting point for switches of the same size: ± 0.03 bar (± 0.43 psi).

Operating curves

Connection

Terminal model



- 1 Maximum differential
- 2 Minimum differential

— Adjustable value

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

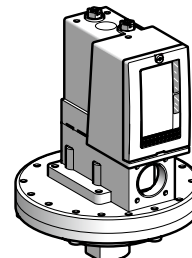
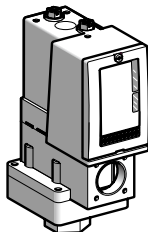
Switches with 2 CO single-pole contacts

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	

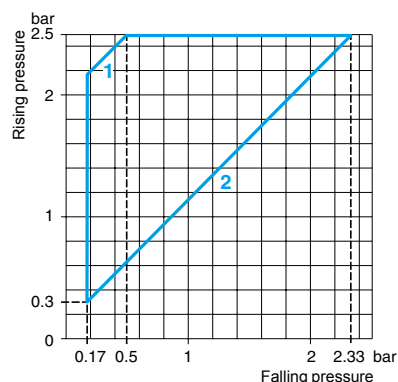
(1) For 1 entry tapped for n° 13 cable gland, replace S12 by S11 (example: XML C002B2S12 becomes XML C002B2S11).

(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

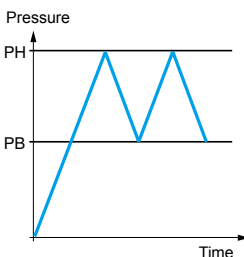


- 1 Maximum differential
- 2 Minimum differential

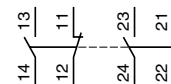
Other versions

Connection

Terminal model



— Adjustable value



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

Electromechanical pressure switches

OsiSense XM, type XML

Size 4 bar (58 psi)

Adjustable differential, for regulation between 2 thresholds

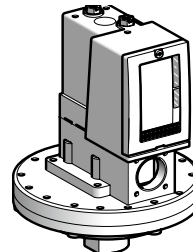
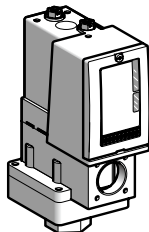
Switches with 2 CO single-pole contacts

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).

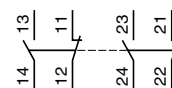
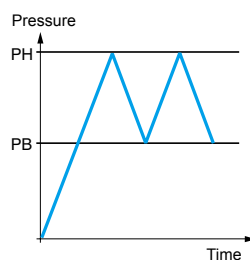
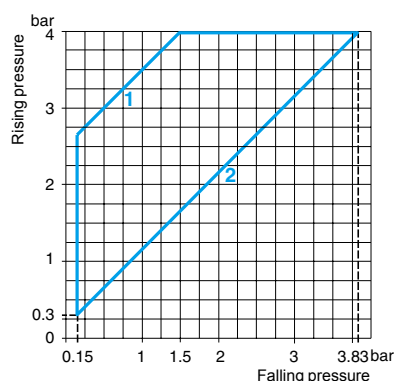
(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.

(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

Connection

Terminal model



- 1 Maximum differential
- 2 Minimum differential

— Adjustable value

Other versions

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

Electromechanical pressure switches

OsiSense XM, type XML

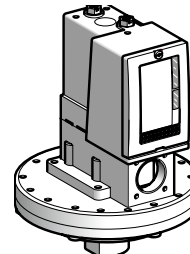
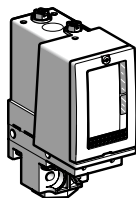
Size 10 bar (145 psi)

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 With setting scale
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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	

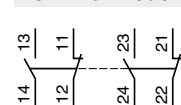
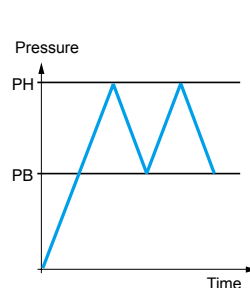
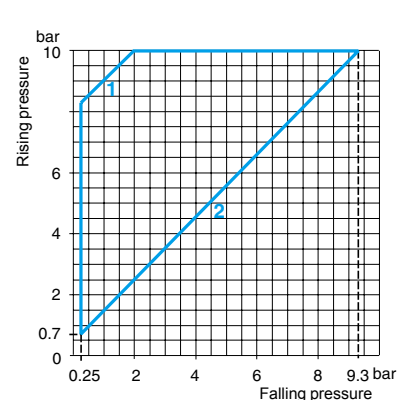
(1) For 1 entry tapped for n° 13 cable gland, replace S12 by S11 (example: XML C010B2S12 becomes XML C010B2S11).

(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

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

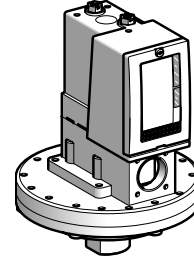
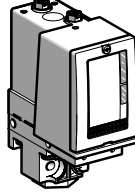
Switches with 2 CO single-pole contacts

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)

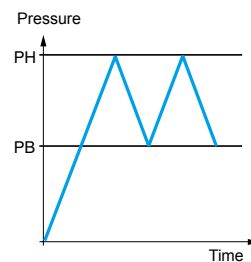
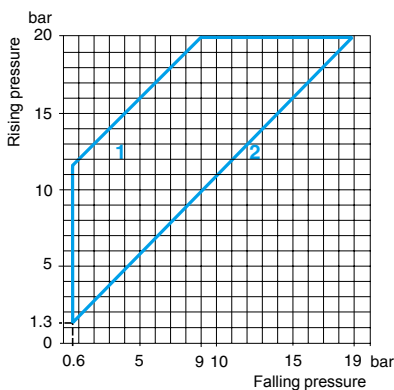
Possible differential (subtract from PH to give PB)	Min. at low setting (3)	0.7 bar (10.15 psi)	0.7 bar (10.15 psi)
	Min. at high setting (3)	1 bar (14.5 psi)	1.15 bar (16.67 psi)
	Max. at high setting	11 bar (159.5 psi)	11.70 bar (169.6 psi)
Maximum permissible pressure	Per cycle	25 bar (362.5 psi)	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.

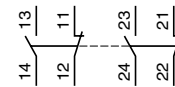
(3) Deviation of the differential at low and high setting points for switches of the same size:
± 0.2 bar (± 2.9 psi).

Operating curves



Connection

Terminal model



- 1 Maximum differential
- 2 Minimum differential

— Adjustable value

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)

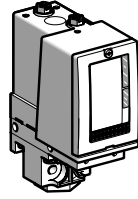
Adjustable differential, for regulation between 2 thresholds

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
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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.

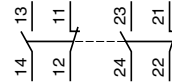
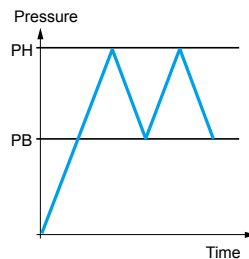
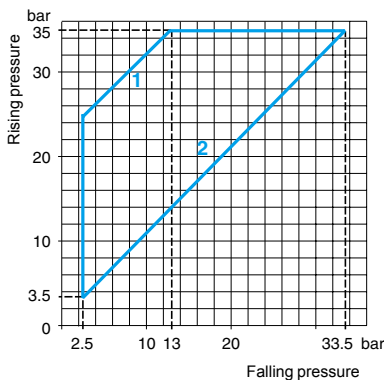
(3) Deviation of the differential at low setting point for switches of the same size: ± 0.2 bar (± 2.9 psi).

(4) Deviation of the differential at high setting point for switches of the same size: ± 0.5 bar (± 7.25 psi).

Operating curves

Connection

Terminal model



- 1 Maximum differential
- 2 Minimum differential

— Adjustable value

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)

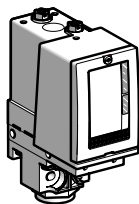
Adjustable differential, for regulation between 2 thresholds

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).

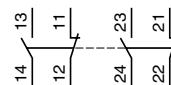
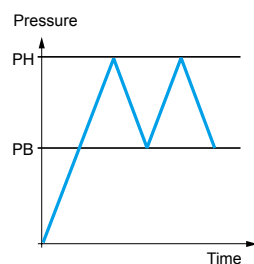
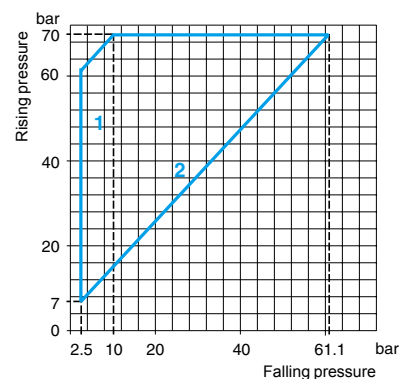
(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.

(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

Connection

Terminal model



- 1 Maximum differential
- 2 Minimum differential

— Adjustable value

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)

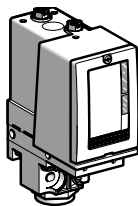
Adjustable differential, for regulation between 2 thresholds

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
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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 ⁸ 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).

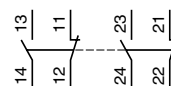
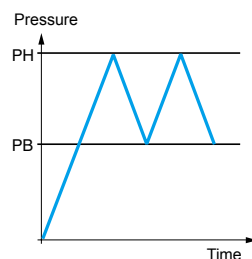
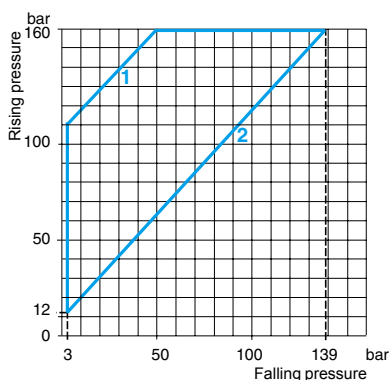
(2) Component materials of units in contact with the fluid, see pages 2/136 and 2/137.

(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

Connection

Terminal model



- 1 Maximum differential
- 2 Minimum differential

— Adjustable value

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 300 bar (4350 psi)

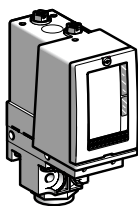
Adjustable differential, for regulation between 2 thresholds

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 10⁸ 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.

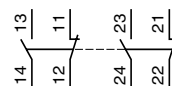
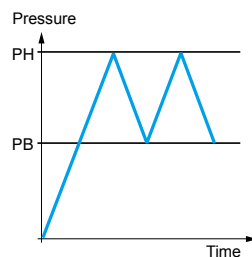
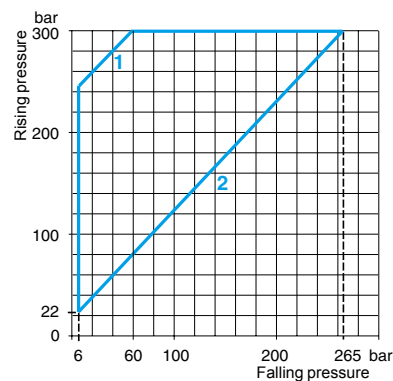
(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.9 bar (± 13.05 psi).

(4) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.

Operating curves

Connection

Terminal model



1 Maximum differential

2 Minimum differential

— Adjustable value

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 500 bar (7250 psi)

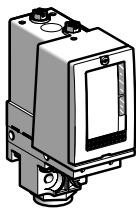
Adjustable differential, for regulation between 2 thresholds

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 10⁸ 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.

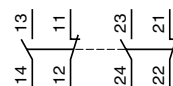
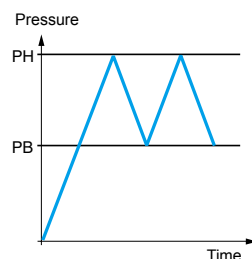
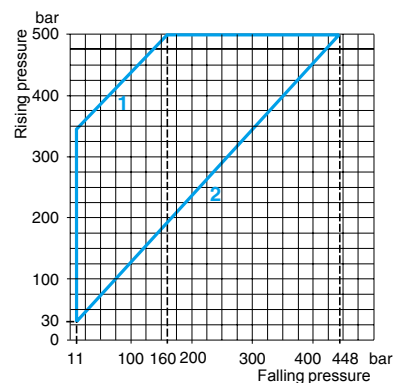
(3) Deviation of the differential at low and high setting points for switches of the same size: ± 0.9 bar (± 13.05 psi).

(4) Only for control of group 2 fluids, in accordance with directive 97/23/EEC.

Operating curves

Connection

Terminal model



1 Maximum differential

2 Minimum differential

— Adjustable value

Other versions

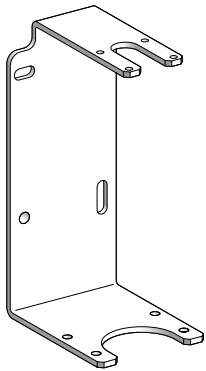
Pressure switches with alternative tapped cable entries: NPT etc. Please consult our Customer Care Centre.

Electromechanical pressure and vacuum switches

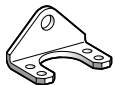
OsiSense XM

Types XML A, XML B, XML C and XML D

Accessories and replacement parts



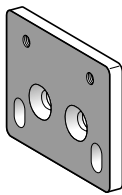
XML ZL006



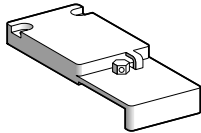
XML ZL002



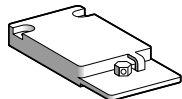
XML ZL003



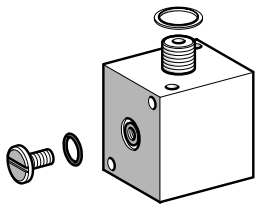
XML ZL004



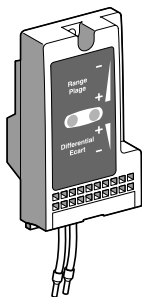
XML ZL001



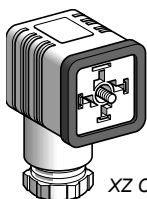
XML ZL011



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 XML●001	XML ZL006	0.230	
Additional top support bracket for vibrations > 4 gn	–	XML AM01 XML●M05 XML A004 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 XML●M05 XML A004 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 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

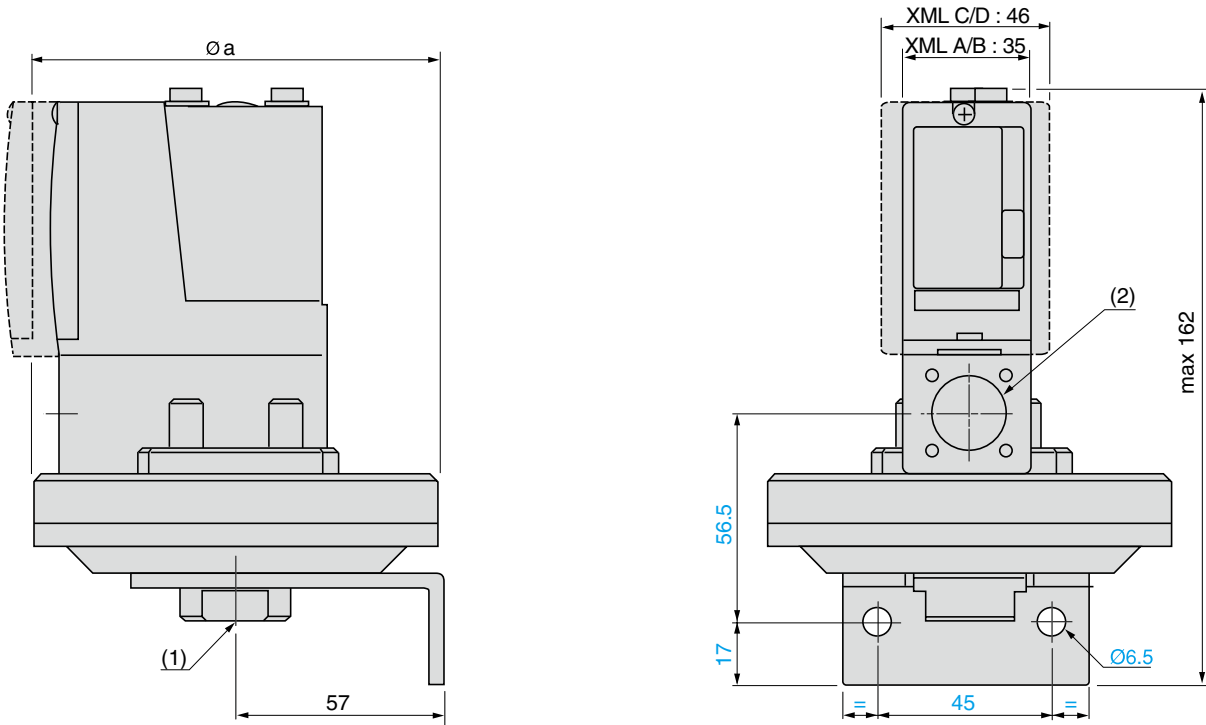
Sealing gasket	For sizes ≥ 300 bar (XML A/B/C/D)		XML ZL010	0.015
Diaphragms	–	XML●S35	XML ZL013	0.060
	–	XML●S02	XML ZL014	0.040
	–	XML●S04	XML ZL015	0.030

Electromechanical pressure and vacuum switches

OsiSense XM

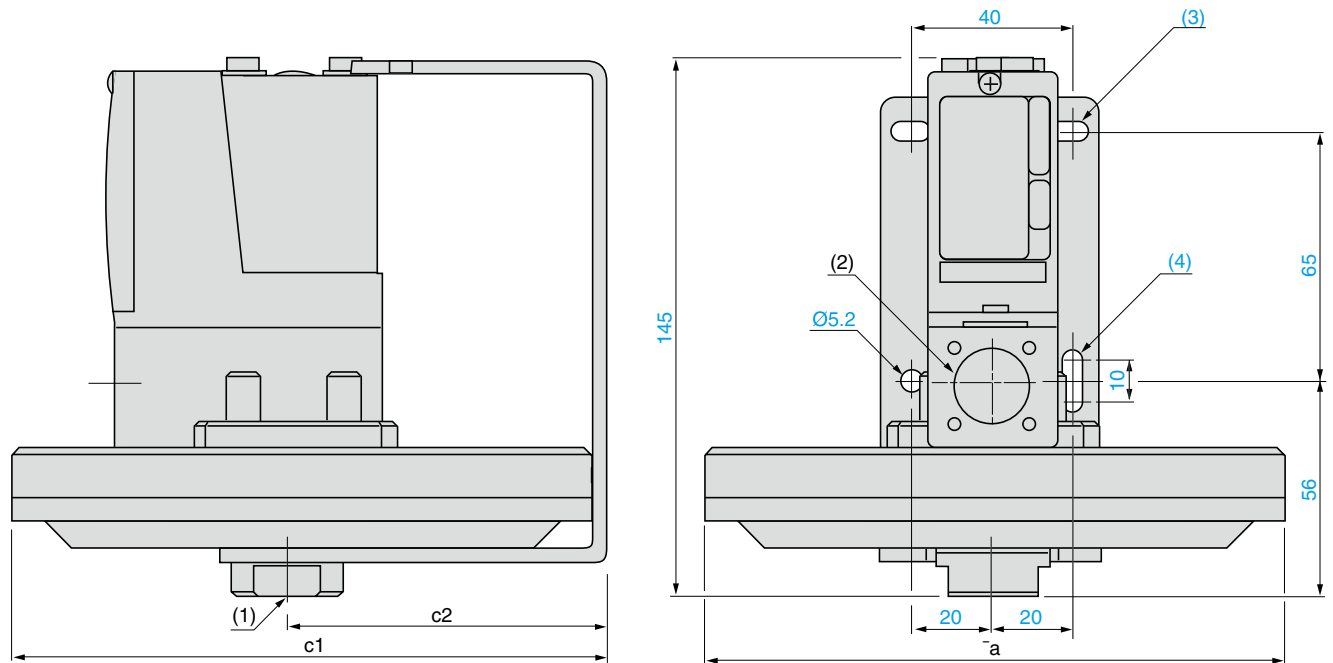
Types XML A, XML B, XML C and XML D

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

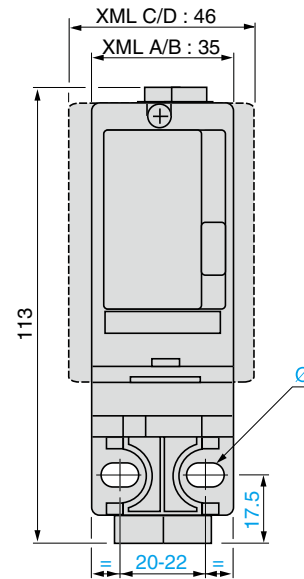
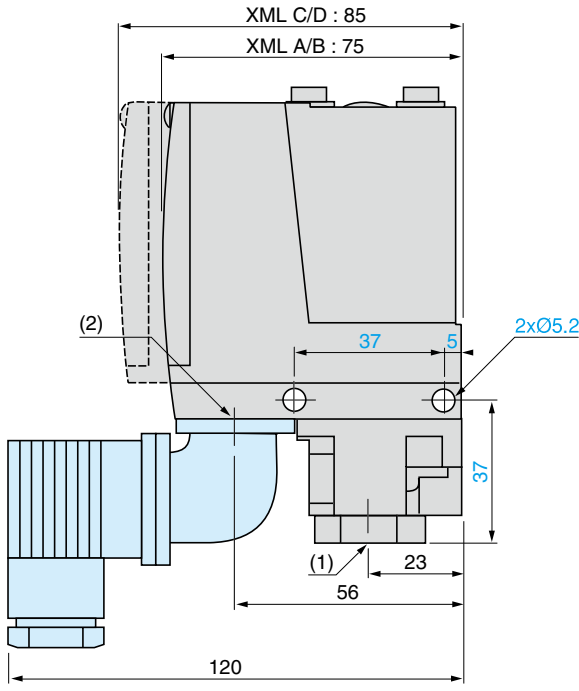
XML	Øa	c1	c2
BM03	150	155.5	80.5
BL05	200	204	104
●L35, ●001	110	-	-
●S35, ●S02, ●S04	110	-	-
●S10, ●S20	86	-	-

Electromechanical pressure and vacuum switches

OsiSense XM

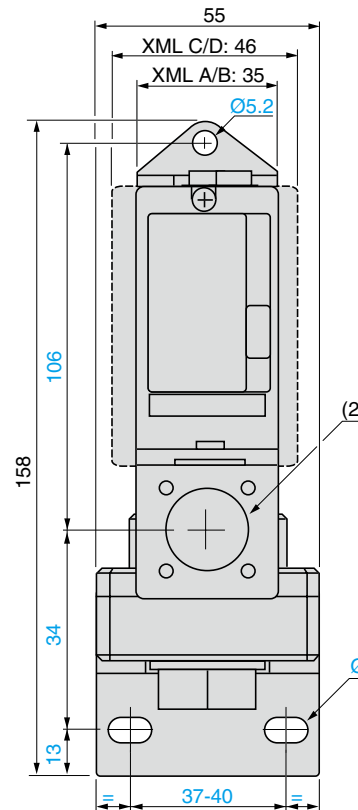
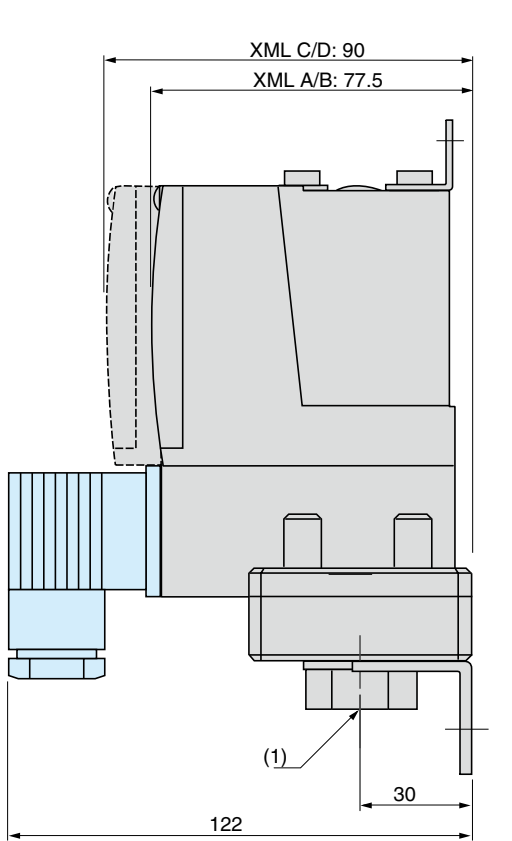
Types XML A, XML B, XML C and XML D

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 0M02, XML 0002, XML B004, XML C004, XML D004



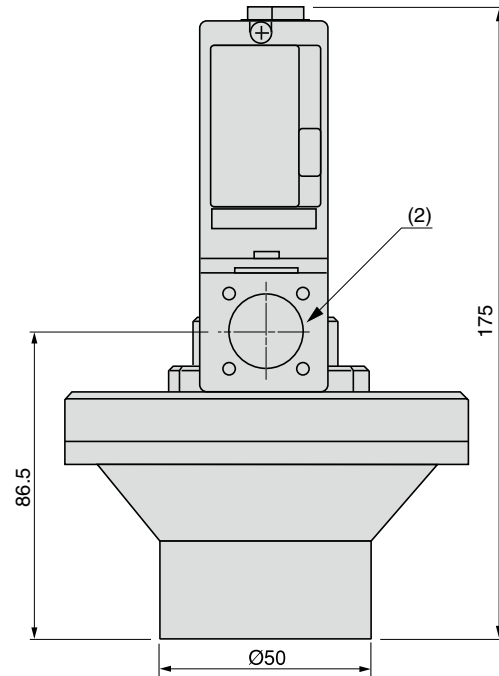
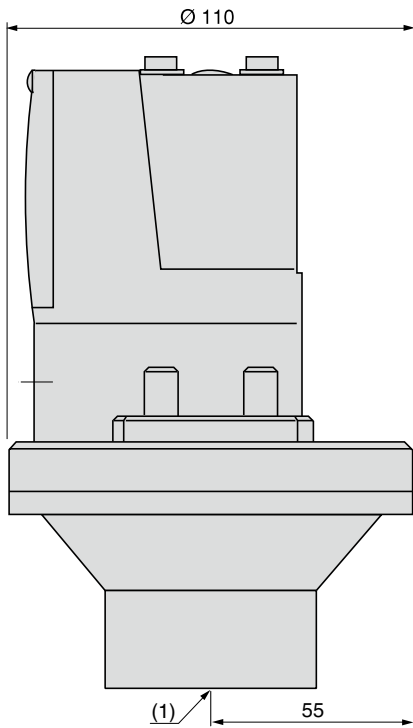
(1) 1 fluid entry, tapped G 1/4 (BSP female)
 (2) 1 electrical connections entry, tapped M20 x 1.5 or Pg 13.5
 Ø: 2 elongated holes Ø 10.2 x 5.2

Electromechanical pressure and vacuum switches

OsiSense XM

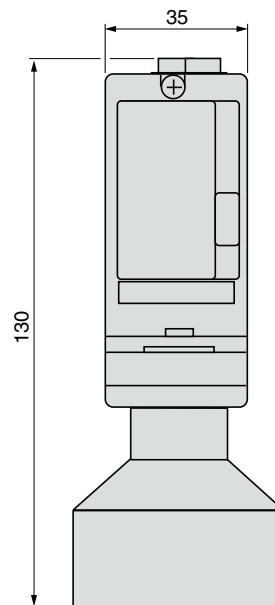
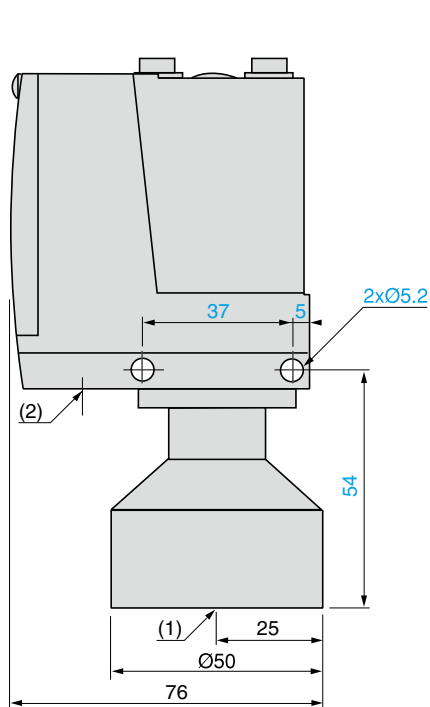
Types XML A, XML B, XML C and XML D

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

Electromechanical pressure and vacuum switches

OsiSense XM

Equivalent model references of pressure and vacuum switches XML for previous range switches XM2 JM, XMJ and XMJ

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

Old XM2 JM	New XML A
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

Old XMJ A	New XML A
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

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 (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)