

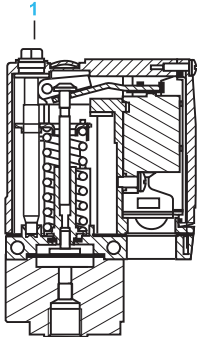
# Electromechanical pressure and vacuum switches

## XML range

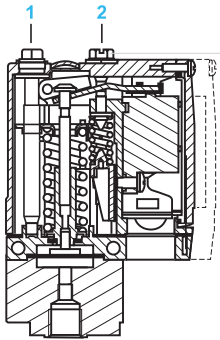
### Introduction

XML pressure and vacuum switches for control circuits are used to control the pressure of hydraulic oils, fresh water, sea water, air, steam, corrosive fluids, or viscous products, up to 7250 psi (500 bar).

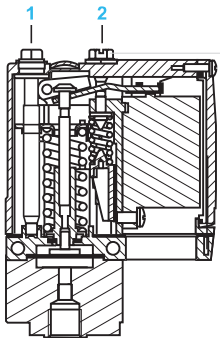
- **XMLA** pressure and vacuum switches have a fixed differential and are for detection of a single threshold. They incorporate a 1 C/O single-pole contact.
- **XMLB** pressure and vacuum switches have an adjustable differential and are for regulation between two thresholds. They incorporate a 1 C/O single-pole contact.
- **XMLC** pressure and vacuum switches have an adjustable differential and are for regulation between two thresholds. They incorporate two C/O single-pole contacts.
- **XMLD** pressure and vacuum switches are dual-stage switches, each stage with a fixed differential, and are for detection at each threshold. They incorporate two C/O single-pole contacts (one per stage).



XMLA



XMLB, XMLC



XMLD

### Setting

#### XMLA: pressure and vacuum switches with fixed differential

- **Rising pressure**—Operating point PH is set by adjusting the red screw **1**.
- **Falling pressure**—Operating point PB is not adjustable.

The difference between the trip and reset points of the contact is the inherent differential of the switch (contact differential, friction, etc.).

#### XMLB and XMLC: pressure and vacuum switches with adjustable differential

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

- **Rising pressure**—Operating point PH is set by adjusting the red screw **1**.
- **Falling pressure**—Operating point PB is set by adjusting the green screw **2**.

#### XMLD: dual-stage pressure and vacuum switches with fixed differential for each threshold

##### Operating point on rising pressure of stage 1 and stage 2

- **First stage** operating point on rising pressure (PH1) is set by adjusting the red screw **1**
- **Second stage** operating point on rising pressure (PH2) is set by adjusting the blue screw **2**.

##### Operating point on falling pressure

The operating points on falling pressure (PB1 and PB2) are not adjustable.

The difference between the trip and reset points of each contact is the inherent differential of the switch (such as contact differential or friction).

# Electromechanical pressure and vacuum switches

## XML range

Specifications	
<b>Environmental specifications</b>	
Conformity to standards	CE, UKCA, IEC/EN/UL/CSA 60947-5-1
Product certifications	CCC, BV, cULus
Ambient air temperature, °F (°C)	For operation: -13 to +158 (-25 to +70). Storage: -40 to +158 (-40 to +70)
Fluids or products controlled	Hydraulic oils, air, fresh water, sea water, 32–320 °F (0 to 160 °C), depending on model Steam, corrosive fluids, viscous products, 32–320 °F (0 to 160 °C), depending on model
Materials	Case: zinc alloy. Component materials in contact with fluid: see page 62.
Operating position	All positions
Vibration resistance	4 gn (30–500 Hz) conforming to IEC 68-2-6 except <b>XMLL35</b> , <b>XML001</b> and <b>XMLBM03</b> : 2 gn
Shock resistance	50 gn conforming to IEC 68-2-27 except <b>XMLL35</b> , <b>XML001</b> and <b>XMLBM03</b> : 30 gn
Electric shock protection	Class I conforming to IEC 1140
Degree of protection	Screw terminal models: IP66 conforming to IEC/EN 60529 Connector models: IP65 conforming to IEC/EN 60529
Operating rate (operating cycles/minute)	Piston version switches: up to 60 cycles/minute for temperatures greater than 32 °F (0 °C) Diaphragm version switches: up to 120 cycles/minute for temperatures greater than 32 °F (0 °C),
Repeat accuracy	< 2%
Pressure connection (1)	<ul style="list-style-type: none"> <li>G 1/4 (BSP female)</li> <li>1/4"-18 NPTF female</li> <li>PT 1/4 (JIS B0203).</li> </ul>
Electrical connection (1) for screw terminal models	<ul style="list-style-type: none"> <li>1/2" NPT electrical connections</li> <li>ISO M20 x 1.5 tapped entry</li> <li>DIN Pg 13.5 (n° 13) tapped entry</li> <li>Connector models, either M12 or DIN 43650 A: please consult our Customer Care Center.</li> </ul>

Contact block specifications	
Rated operational specifications	~ 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)
Rated insulation voltage	Ui = 500 V conforming to IEC/EN Ui = 300 V conforming to UL/CSA
Rated impulse withstand voltage	Uimp = 6 kV
Type of contacts Silver tipped contacts	<b>XMLA</b> and <b>XMLB</b> : 1 C/O single-pole contact (4 terminal), snap action <b>XMLC</b> : 2 C/O single-pole contacts (8 terminal), simultaneous, snap action <b>XMLD</b> : 2 C/O single-pole contacts (8 terminal), staggered, snap action
Short-circuit protection	10 A cartridge fuse type gG (gl)
Connection	Screw clamp terminals. Clamping capacity, min: 1 x 0.2 mm <sup>2</sup> , max: 2 x 2.5 mm <sup>2</sup>

Electrical durability Utilization categories AC-15 and DC-13	XMLA and XMLB AC supply ~ 50/60 Hz ~ Inductive circuit, Ithe = 10 A		XMLC and XMLD AC supply ~ 50/60 Hz ~ Inductive circuit, Ithe = 10 A							
	<b>Operating rate:</b> <b>3600 operating cycles/hour</b> <b>Load factor: 0.5</b>									
	<b>DC supply ---</b> Power broken in W for 1 million operating cycles		<b>DC supply ---</b> Power broken in W for 5 million operating cycles							
	Voltage	V	24	48	120	Voltage	V	24	48	120
	~m	W	31	29	26	~m	W	10	7	4

(1) See page 18, "Interpreting the reference for XML Devices" for more information on specifying the electrical and pressure connections.