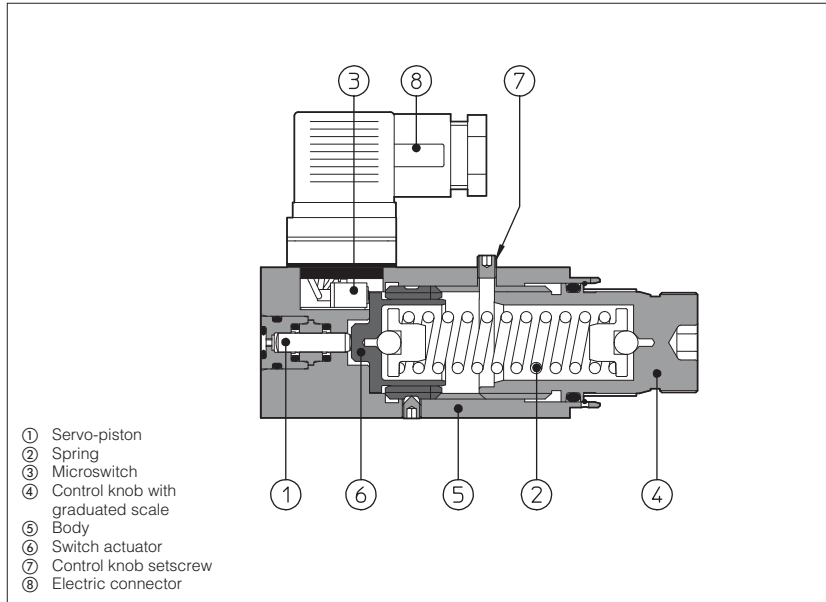


# Pressure switches type SMAP

with fixed differential



**SMAP** are pressure switches with fixed differential which open/closed the electrical contact when the pressure in the hydraulic circuit reaches the set value.

The fluid pressure in the circuit operates the piston ① acting against the adjustable spring ②; once the pressure setting is reached, the piston is pushed forward so as to actuate a microswitch ③ and make or break its contacts.

The pressure setting is selected by turning a graduated control knob ④.

Clockwise rotation increases the setting pressure.

Pressure switches are designed to operate in hydraulic systems with hydraulic mineral oil or synthetic fluid having similar lubricating characteristics.

Max pressure: **650 bar**

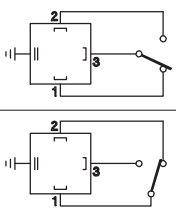
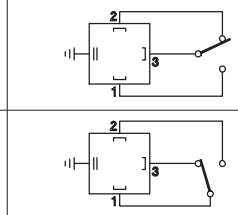
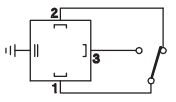
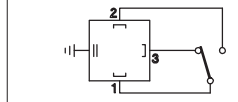
## 1 MODEL CODE

<b>SMAP</b>	-	<b>160</b>	/	<b>E</b>	**	/	*
Fixed differential pressure switch				Series number			
Pressure range: <b>160</b> = 10 ÷ 160 bar <b>40</b> = 5 ÷ 40 bar <b>320</b> = 30 ÷ 320 bar <b>80</b> = 7 ÷ 80 bar <b>630</b> = 50 ÷ 630 bar				Options: <b>E</b> = Common electric contact connected to pin 1 (see section ③)			
				Seals material, see section ②: - = NBR <b>PE</b> = FKM			

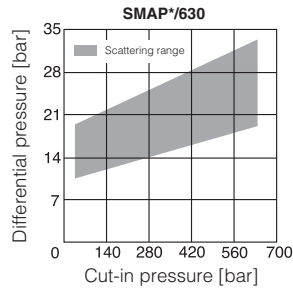
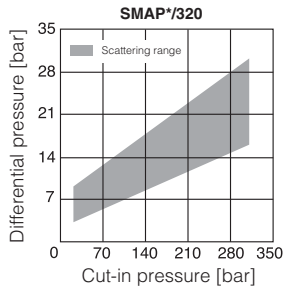
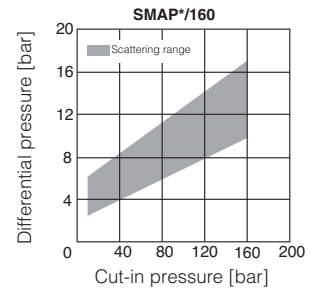
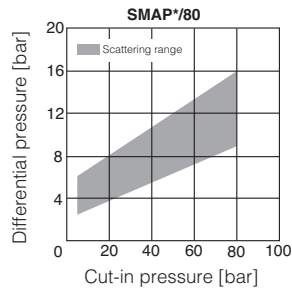
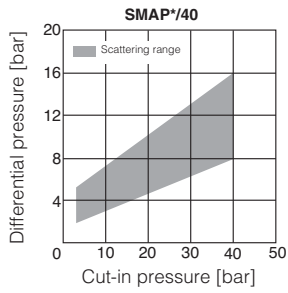
## 2 MAIN CHARACTERISTICS, SEALS AND HYDRAULIC FLUID - for other fluids not included in below table, consult our technical office

Assembly position / location	Any position		
Subplate surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)		
Ambient temperature	Standard execution = -30°C ÷ +70°C /PE option = -20°C ÷ +70°C /BT option = -40°C ÷ +70°C		
Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +60°C, with HFC hydraulic fluids = -20°C ÷ +50°C FKM seals (/PE option) = -20°C ÷ +80°C HNBR seals (/BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C		
Recommended viscosity	15 ÷ 100 mm <sup>2</sup> /s - max allowed range 2.8 ÷ 500 mm <sup>2</sup> /s		
Fluid contamination class	ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 µm (β10 ≥ 75 recommended)		
<b>Hydraulic fluid</b>	<b>Suitable seals type</b>	<b>Classification</b>	<b>Ref. Standard</b>
Mineral oils	NBR, FKM, HNBR	HL, HLP, HLPD, HVL, HVLDP	DIN 51524
Flame resistant without water	FKM	HFDR, HFDR	ISO 12922
Flame resistant with water	NBR, HNBR	HFC	

### 3 CHARACTERISTICS AND WIRING OF INTERNAL MICROSWITCH

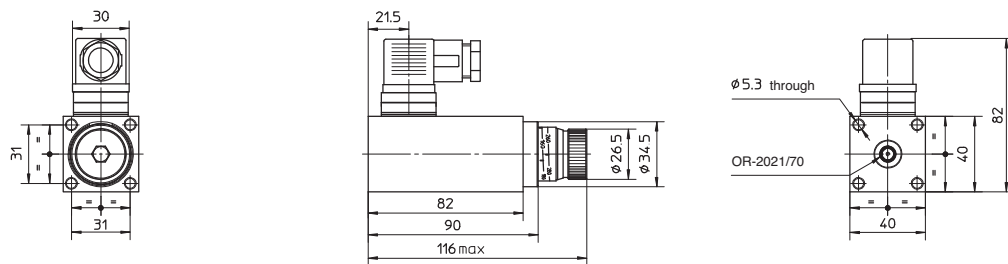
	Supply voltage [V]				STD	Resting position	Pressure operated position
	125 AC	250 AC	30 DC	250 DC			
Max current - resistive load - [A]	7	5	5	0,2	/E		
Max current - inductive load (Cos φ = 0,4) - [A]	4	2	3	0,02			
Insulating resistance	≥100MΩ				/E		
Contact resistance	15 mΩ						
Electrical life-expectancy	≥1.000.000 switchings						
Mechanical life-expectancy	≥10.000.000 switchings						

### 4 DIAGRAMS



The graphs show, according to the set cut-in pressure, the pressure difference between the insert and the at-rest positions of the pressure switch electric contacts.

### 5 DIMENSIONS OF SMAP WITHOUT ADAPTORS [mm]



Fastening bolts:  
4 socket head screws M5X90 supplied with the pressure switch