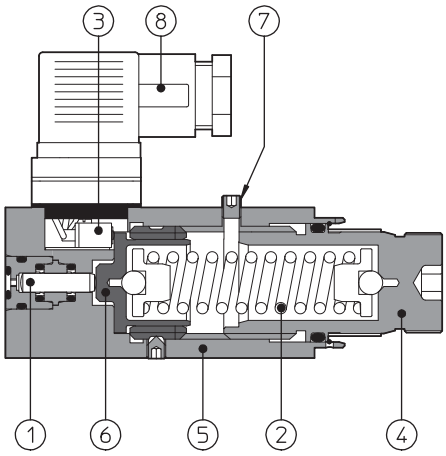
Pressure switches type MAP

with fixed differential



① Servo-piston
② Spring
③ Microswitch
④ Control knob with graduated scale
⑤ Body
⑥ Switch actuator
⑦ Control knob setscrew
⑧ Electric connector

MAP pressure switches produce an electrical make/break contact which is triggered when pressure in the hydrau-lic circuit reaches a given setting.

Fluid pressure in the circuit operates a piston ① flitted with adjustable spring bias ②; once the pressure setting is reached, the piston is urged 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 set-ting 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

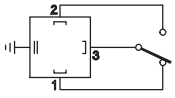
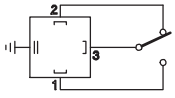
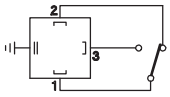
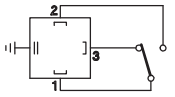
MAP	-	160	/	E	**	/	*
Fixed differential pressure switch		Pressure range: **40** = 5 ÷ 40 bar **80** = 7 ÷ 80 bar **160** = 10 ÷ 160 bar **320** = 30 ÷ 320 bar **630** = 50 ÷ 630 bar		Options: **E** = Common electric contact connected to pin 1 (see section 3)	Series number		Seals material, see section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

Note: special version with gold-plated microswitch contact available on request

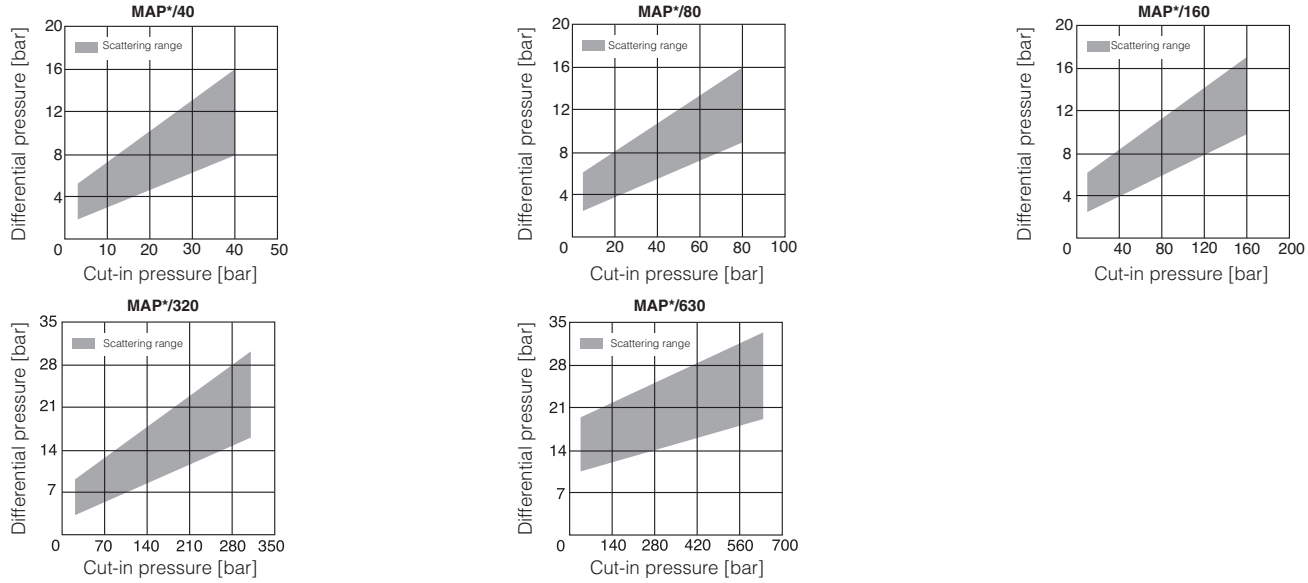
2 MAIN CHARACTERISTICS, SEALS AND HYDRAULIC FLUID - for other fluids not included in below table, consult our technical office

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 mm²/s - max allowed range 2.8 ÷ 500 mm²/s		
Fluid contamination class	ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 µm (β10 ≥75 recommended)		
Hydraulic fluid	**Suitable seals type**	**Classification**	**Ref. Standard**
Mineral oils	NBR, FKM, HNBR	HL, HLP, HLPD, HVLP, HVLPD	DIN 51524
Flame resistant without water	FKM	HFDU, HFDR	ISO 12922
Flame resistant with water	NBR, HNBR	HFC	

3 CHARACTERISTICS AND WIRING OF INTERNAL MICROSWITCH

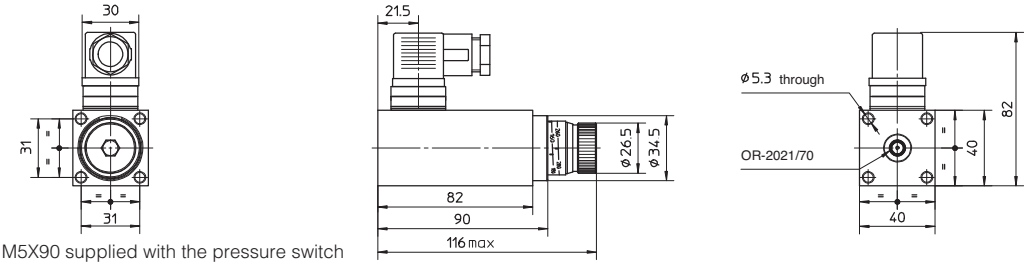
	Supply voltage [V]					Resting position	Pressure operated position
	125 AC	250 AC	30 DC	250 DC			
Max current [A] - resistive load -	7	5	5	0,2	**STD**		
Max current [A] - inductive load (Cos φ = 0,4) -	4	2	3	0,02			
Insulating resistance	≥100MΩ				**/E**		
Contact resistance	15 mΩ						
Electrical life-expectancy	≥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 MAP WITHOUT ADAPTORS [mm]



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

6 MODEL CODE FOR ADAPTORS WHEN SUPPLIED SEPARATELY - BHM and BKM with option **/PE** or **/BT** are available on request

BHM	–	**

Type of adaptor
BMM = male
BMF = female
BFM = in-line
BHM = ISO 4401 size 06
BKM = ISO 4401 size 10

Threated connections for BMM and BFM adaptors, see section 7

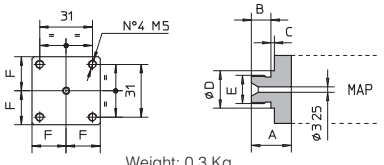
06 = G 1/4" (BMM, BMF, BFM)
10 = G 3/8" (BMM, BFM)
15 = G 1/2" (BMM, BFM)
20 = G 3/4" (BFM)
25 = G 1" (BFM)
32 = G 1 1/4"(BFM)

BHM and BKM adaptors, see section 7

11 = port P
12 = port A and B
13 = port A
14 = port B
17 = port P and A
18 = port P and B

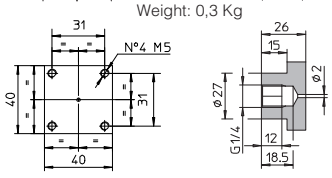
7 DIMENSIONS OF ADAPTORS [mm]

BMM - Male fittings:



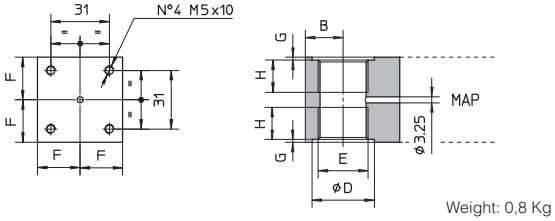
Weight: 0,3 Kg

BMF - Female fittings:



	A	B	C	Ø D	E	F
BMM-06	22,5	11	1,5	18	G 1/4"	20
BMM-10	23,5	11,5	2	22	G 3/8"	20
BMM-15	27,5	15	2,5	26	G 1/2"	20

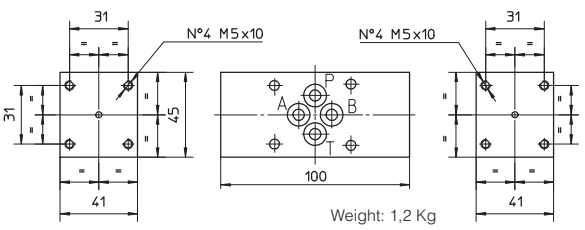
BFM - In-line mounting:



Weight: 0,8 Kg

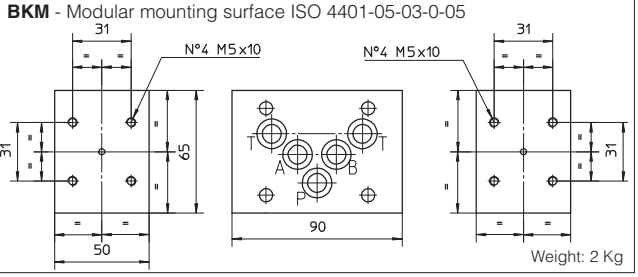
	A	B	Ø D	E	F	G	H
BFM-06	50	20	19	G 1/4"	22,5	1	12
BFM-10	50	20	23	G 3/8"	22,5	1	12
BFM-15	50	20	27	G 1/2"	22,5	1	15
BFM-20	50	20	33	G 3/4"	22,5	1,5	17
BFM-25	70	30	40	G 1"	30	1,5	19
BFM-32	70	30	50	G 1 1/4"	30	1,5	22

BHM - Modular mounting surface ISO 4401-03-02-0-05



Weight: 1,2 Kg

BKM - Modular mounting surface ISO 4401-05-03-0-05



Weight: 2 Kg

For versions 11 and 13 the pressure switch is mounted on side of port A. For version 14 the pressure switch is mounted on side of port B. For versions 12, 17, 18 the pressure switch is mounted on both sides.