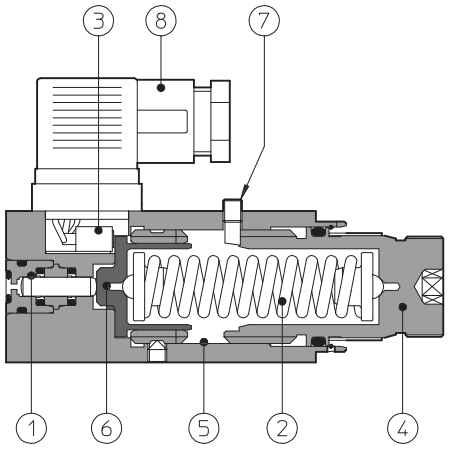
Pressure switches type MAP

with fixed differential



① Servo-piston
② Spring
③ Microswitch
④ Control knob
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 hydraulic 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 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

MAP - 160 /M 06 /E ** /WG

Fixed differential pressure switch

Pressure range:
40 = 3 ÷ 40 bar
80 = 4 ÷ 80 bar
160 = 8 ÷ 160 bar
320 = 16 ÷ 320 bar
630 = 32 ÷ 630 bar

Type of adaptor (if required), see section 6 and 7
/M = BMM – adaptor - male fittings
/MF = BMF – adaptor - female fittings
/F = BFM – adaptor - in line mounting
/H = BHM adaptor - modular mounting ISO 4401 size 06
/K = BKM adaptor - modular mounting ISO 4401 size 10

Threated connections for BMM and BFM adaptors, see section 7

BMM
06 = G 1/4"
10 = G 3/8"
15 = G 1/2"

BMF
06 = G 1/4"

BFM
06 = G 1/4"
10 = G 3/8"
15 = G 1/2"
20 = G 3/4"
25 = G 1"
32 = G 1 1/4"

Port to serve for BHM and BKM adaptors, see section 7
11 = port P
12 = port A und B
13 = port A
14 = port B
17 = port P and A
18 = portP and B

Options:
E = Common electric contact connected to pin 1 (see section 3)

Series number

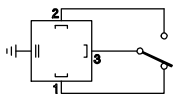
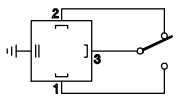
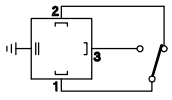
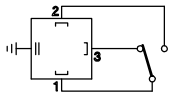
Synthetic fluids:
WG = water-glycol
PE = phosphate ester

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

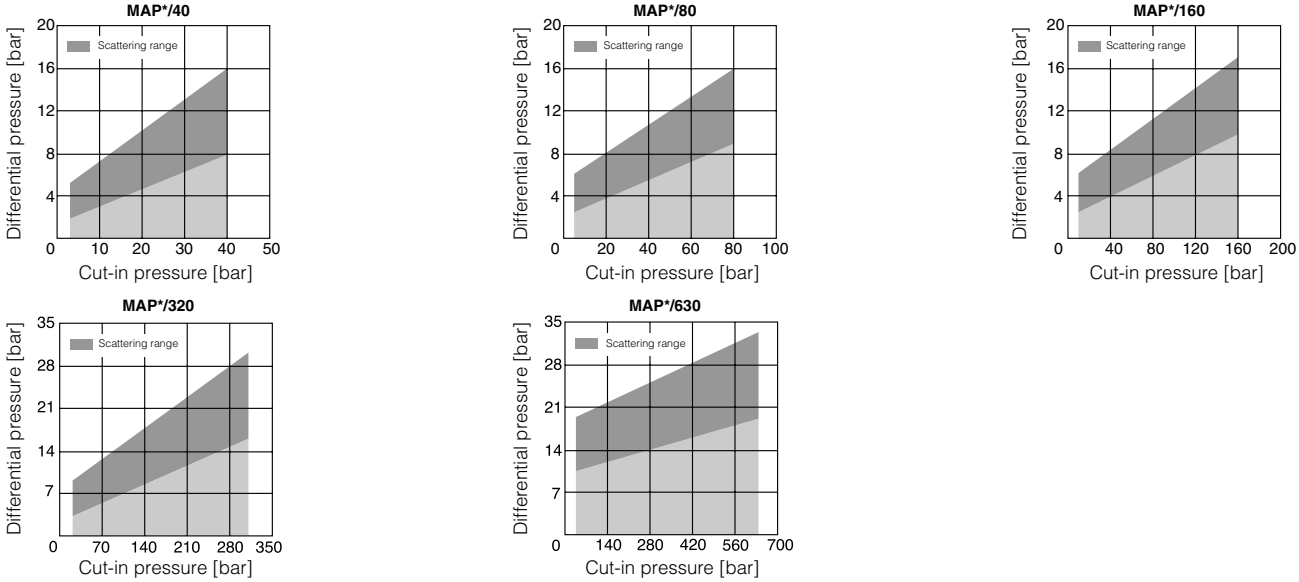
2 MAIN CHARACTERISTICS OF PRESSURE SWITCHES TYPE MAP

Assembly position / location	Any position
Subplate surface finishing	Roughness index $\sqrt{}^{0.4}$ flatness ratio 0,01/100 (ISO 1101).
Ambient temperature	from -20°C to +70°C.
Fluid	Hydraulic oil as per DIN 51524 .... 535; for other fluids see section 1.
Recommended viscosity	15 ÷ 100 mm²/s at 40°C (ISO VG 15 ÷ 100).
Fluid contamination class	ISO 19/16, achieved with in line filters at 25 µ value and $ß_{25} \geq 75$ (recommended).
Fluid temperature	T ≤ 80°C; if T ≤ 60°C select /PE seals

3 MAIN CHARACTERISTICS AND WIRING OF INTERNAL MICROSWITCH

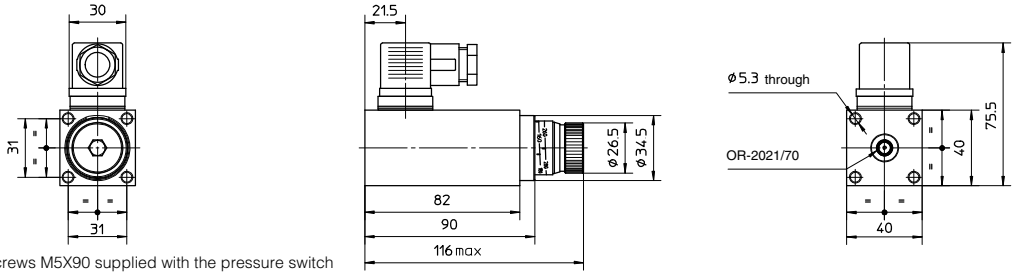
	Supply voltage [V] 125 AC	250 AC	30 DC	250 DC		Resting position	Pressure operated position
Max current [A] - resistive load -	7	5	5	0,2	STD		
Max current [A] - inductive load (Cos φ = 0,4) -	4	2	3	0,02			
Insulating resistance	≥ 100 MΩ				/E		
Contact resistance	= 15 mΩ						
Electrical life-expectancy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

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

BMM
06 = G 1/4"
10 = G 3/8"
15 = G 1/2"

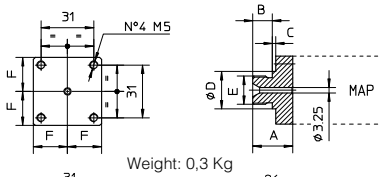
BMF
06 = G 1/4"

BFM
06 = G 1/4"
10 = G 3/8"
15 = G 1/2"
20 = G 3/4"
25 = G 1"
32 = G 1 1/4"

Port to serve for 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

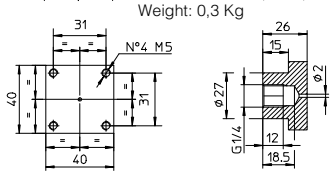
7 DIMENSIONS OF ADAPTORS [mm]

BMM - Male fittings:



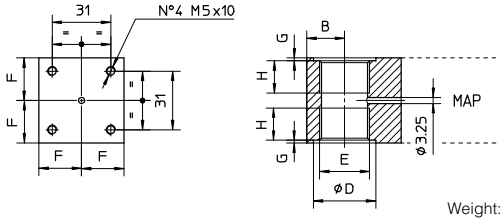
Weight: 0,3 Kg

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

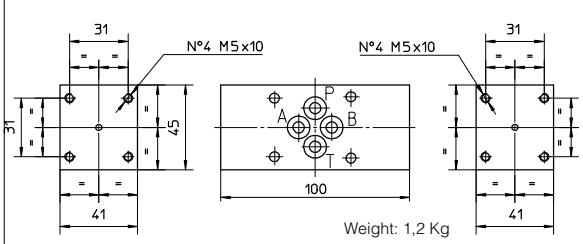
BFM - In-line mounting:



Weight: 0,8 Kg

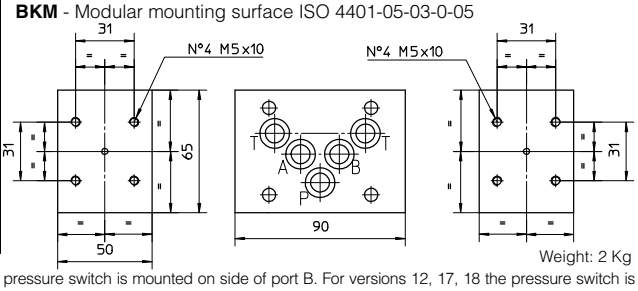
	A	B	Ø D	E	F	G	H
BFM-06	50	20	19	G 1/4"	22,5	1	12
BFM-10	50	20	23	G 3/8"	22,5	1	12
BFM-15	50	20	27	G 1/2"	22,5	1	15
BFM-20	50	20	33	G 3/4"	22,5	1,5	17
BFM-25	70	30	40	G 1"	30	1,5	19
BFM-32	70	30	50	G 1 1/4"	30	1,5	22

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.