

Sensor technologies ▶ Pressure sensors

Pressure Switches, Series PM1

▶ Operating pressure: -0.9 - 16 bar ▶ mechanical ▶ electr. connection: Plug, ISO 4400, form A ▶ Spring-loaded bellow, adjustable



21212

Measurement	Relative pressure
Switching element	microswitch (input/output)
Max. switching frequency	1,5 Hz
Protection against overpressure	80 bar
Ambient temperature min./max.	-20°C / +80°C
Medium temperature min./max.	-10°C / +80°C
Medium	Compressed air hydraulic oil
Shock resistance max. (XYZ direction)	15 g
Vibration resistance (XYZ direction)	10 g (60 - 500 Hz)
Switching point	adjustable
Hysteresis	max. switching pressure difference
DC operating voltage min./max.	12 - 30
Operational voltage AC min./max.	12 V AC - 250 V AC
Mounting orientation	Any
Mounting types	via through holes
Function	change-over contact (mechanical)
Protection class	IP65
Weight	0.16 kg
Materials:	
Housing	Aluminum
Seals	Acrylonitrile Butadiene Rubber
Electr. connection	Brass, nickel-plated

Technical Remarks

- Switching function increasing pressure: contact switches from 1-2 to 1-3. Switching function decreasing pressure: contact switches from 1-3 to 1-2.
- Notice: Too-high currents can damage contacts. Inductive or capacitive loads must be equipped with appropriate spark-quenching!
- The microswitch has silver-plated contacts.

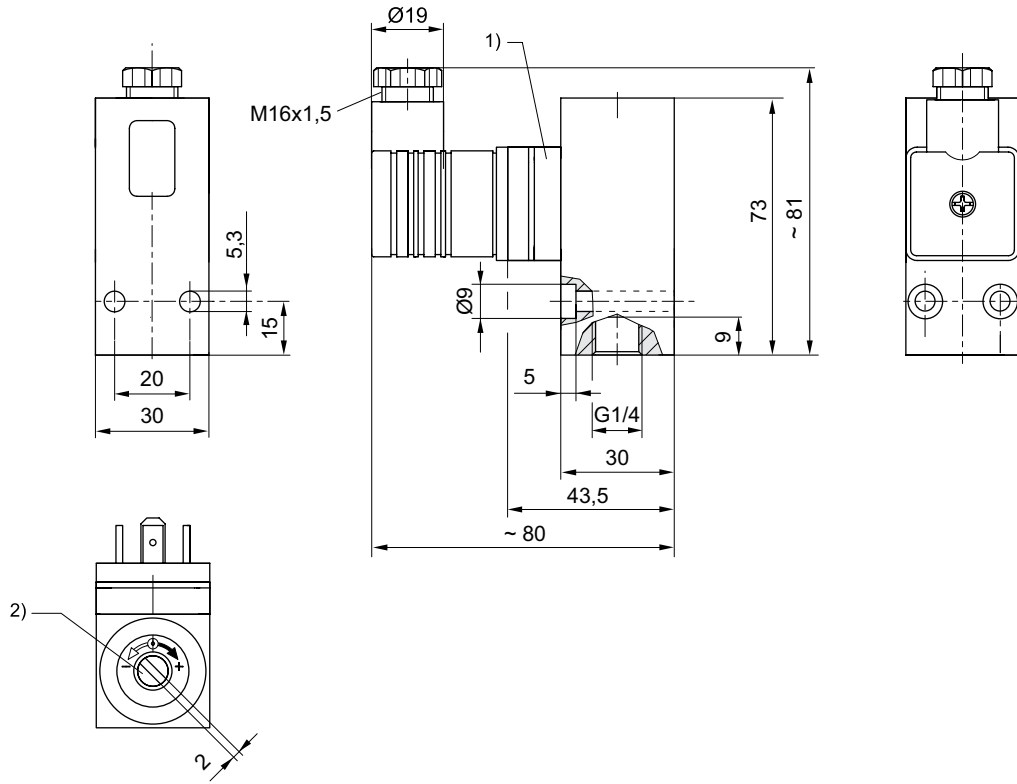
	Type	Operating pressure range min./max.	Compressed air connection	Repeatability (% of full scale value)	Fig.	Note	Part No.
		[bar]					
	PM1-M3-G014	-0.9 / 0	Internal thread, G 1/4	± 1 %	Fig. 1	2)	R412010711
	PM1-M3-G014	-0.9 / 3				3)	R412022752
	PM1-M3-G014	0.2 / 16	Internal thread, G 1/4	± 1 %	Fig. 1	1); 3)	R412010712
	PM1-M3-G014	0.2 / 16				1); 2)	R412010713
	PM1-M3-F001	-0.9 / 0	Flange with O-ring, Ø 5x1,5	± 1 %	Fig. 2	2)	R412010714
	PM1-M3-F001	-0.9 / 0				1); 3)	R412010715
	PM1-M3-F001	0.2 / 16	Flange with O-ring, Ø 5x1,5	± 1 %	Fig. 2	1); 2)	R412010718
	PM1-M3-F001	0.2 / 16				1); 2)	R412010718

- 1) Min. switching pressure range 0.2 bar falling/0.5 bar rising
 2) Scope of delivery: with electrical connector
 3) Scope of delivery: without electrical connector

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Fig. 1



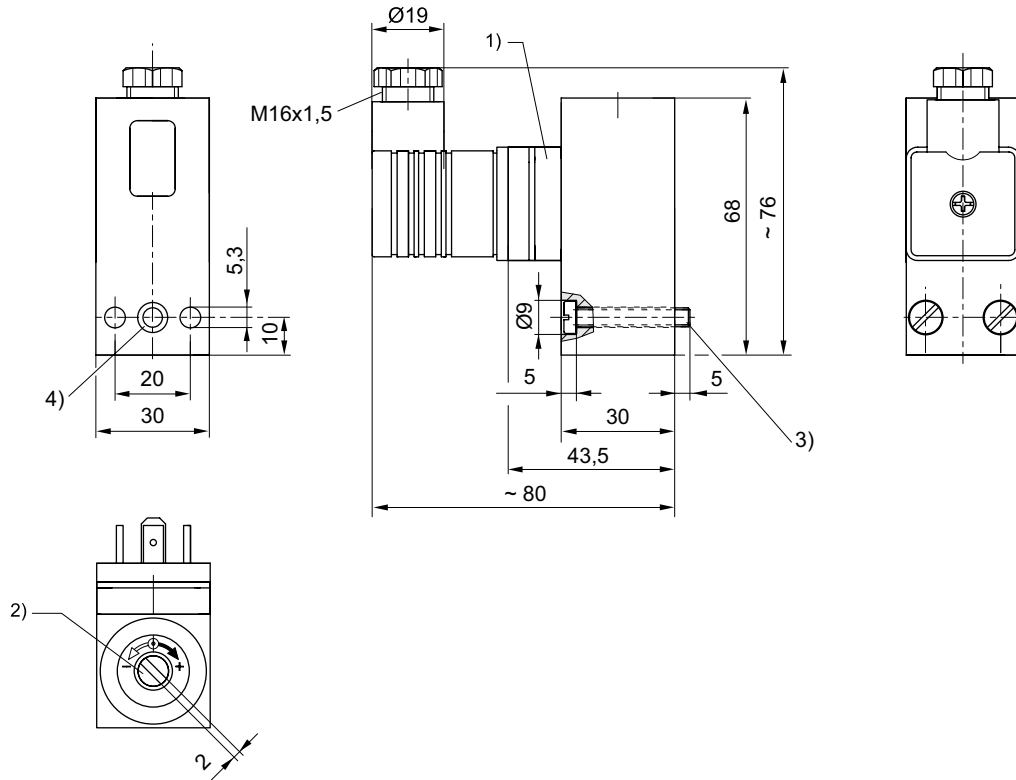
- 1) Electrical connector
- 2) Adjustment screw, self-holding

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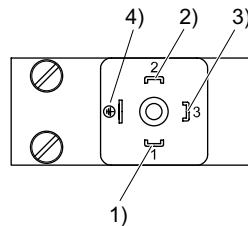
Fig. 2



- 1) Electrical connector
- 2) Adjustment screw, self-holding
- 3) cylinder screw M5x30 (included in scope of delivery)
- 4) O-ring Ø5x1,5 (included)

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PIN assignment for electrical connector



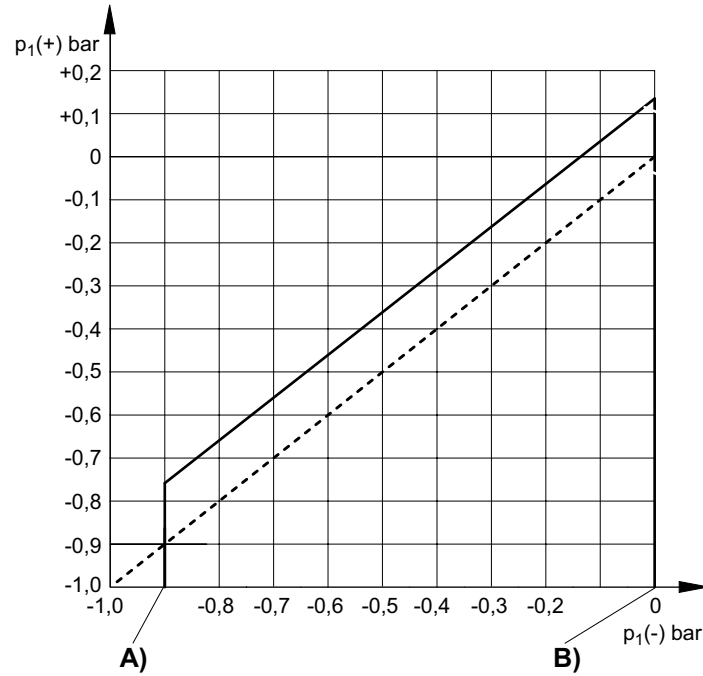
- 1) +UB
- 2) break contact
- 3) NO (make contact)
- 4) GND

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differential switching pressure characteristic curve (-0,9 – 0 bar)



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A) $p_1(-)$, min.

B) $p_1(-)$, max.

$p_1(+)$ = upper switching pressure with increasing pressure

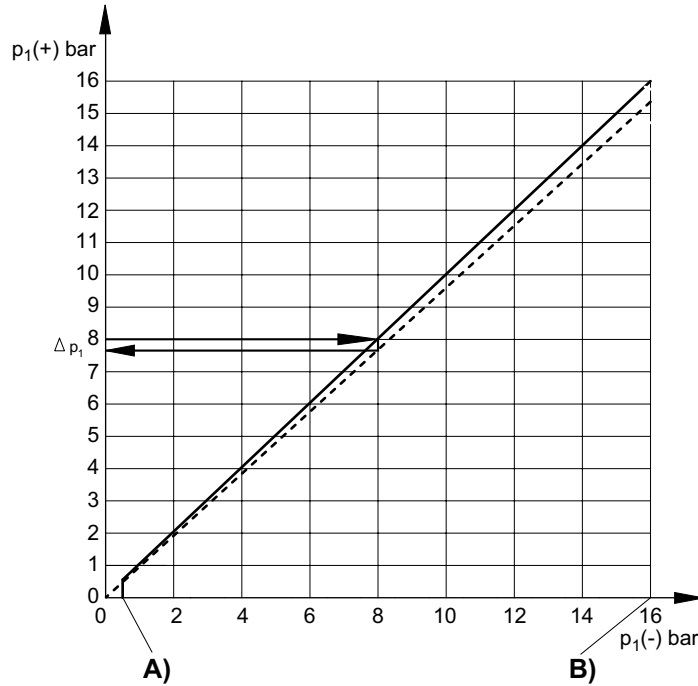
$p_1(-)$ = lower switching pressure with decreasing pressure

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differential switching pressure characteristic curve (0,2 – 16 bar)



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- A) $p_1(-)$, min.
- B) $p_1(-)$, max.
- $p_1(+)$ = upper switching pressure with increasing pressure
- $p_1(-)$ = lower switching pressure with decreasing pressure
- Δp_1 = max. operating pressure difference or hysteresis
- Example:
- $p_1(+)$ = 8 bar > $p_1(-)$ = 7.6 bar
- Δp_1 = 0.4 bar

max. permissible continuous current I_{max} [A] with ohmic load

U [V]	30	48	60	125	250						
I [A] 1)	5	5	5	5	5						
I [A] 2)	3	1,2	0,8	0,4	-						

reference cycle: 30/min., reference temperature: +30 °C
 1) AC
 2) DC

max. permissible continuous current I_{max} [A] with inductive load

U [V]	30	48	60	125	250						
I [A] 1) 3)	3	3	3	3	3						
I [A] 2) 4)	2	0,55	0,4	0,15	-						

reference cycle: 30/min., reference temperature: +30 °C
 1) AC
 2) DC
 3) $\cos \approx 0,7^\circ$
 4) $L/R \approx 10$ ms