# Pressure Switches, Series PM1, flange, M12, 0,2 - 16 bar

**R412010720**

Series PM1

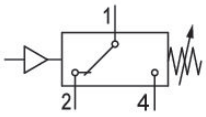
2024-12-12

- Robust housing
- Available with the pressure ranges -0.9 to 0 bar, -0.9 to 1 bar, -0.9 to 3 bar or 0.2 to 16 bar
- Various process connections
- ATEX version available

## AVENTICS Series PM1 Pressure switches

The AVENTICS Series PM1 is a compact pressure switch for measuring compressed air and hydraulic oil. The Series PM1 allows users to select between different pressure ranges from -0.9 to 16 bar.




## Technical information

| | |
|---|---|
| Industry | Industrial |
| Type | Mechanical |
| Type | Diaphragm, spring loaded, adjustable |
| Mounting orientation | Any |
| Operating pressure min | 0.2 bar |
| Operating pressure max | 16 bar |
| Protection against overpressure | 80 bar |
| Operational voltage | 12-125 V DC<br>12-30 V AC |
| Max. shock resistance | 15 g IEC 60068 - 2-64 |
| Vibration resistance | 10 g (60 - 500 Hz) IEC 60068 - 2-6 |
| Precision (% of full scale value) | ± 2 % |
| Hysteresis | max. switching pressure difference |
| Measurement | Relative pressure |
| Compressed air connection | Ø 5x1,5 |
| Compressed air connection type | Flange with O-ring |
| Min. medium temperature | -10 °C |
| Max. medium temperature | 80 °C |
| Medium | Compressed air<br>Hydraulic oil |

| | |
|---|---|
| Electrical connection type | Plug |
| Electrical connection size | M12x1 |
| Min. ambient temperature | -20 °C |
| Max. ambient temperature | 80 °C |
| Switching element | microswitch (input/output) |
| Max. switching frequency | 100/min. |
| Switching point | adjustable |
| Protection class | IP65 |
| Mounting types | via through holes |
| Weight | 0.37 kg |

## Material

| | |
|---|---|
| Housing material | Aluminum |
| Seal material | Acrylonitrile butadiene rubber |
| Material electrical connection | Brass |
| Part No. | R412010720 |

## Technical information

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.

Min. switching pressure range 0.2 bar falling/0.5 bar rising

The pressure dew point must be at least 15 °C less than ambient and medium temperature and may not exceed 3 °C.

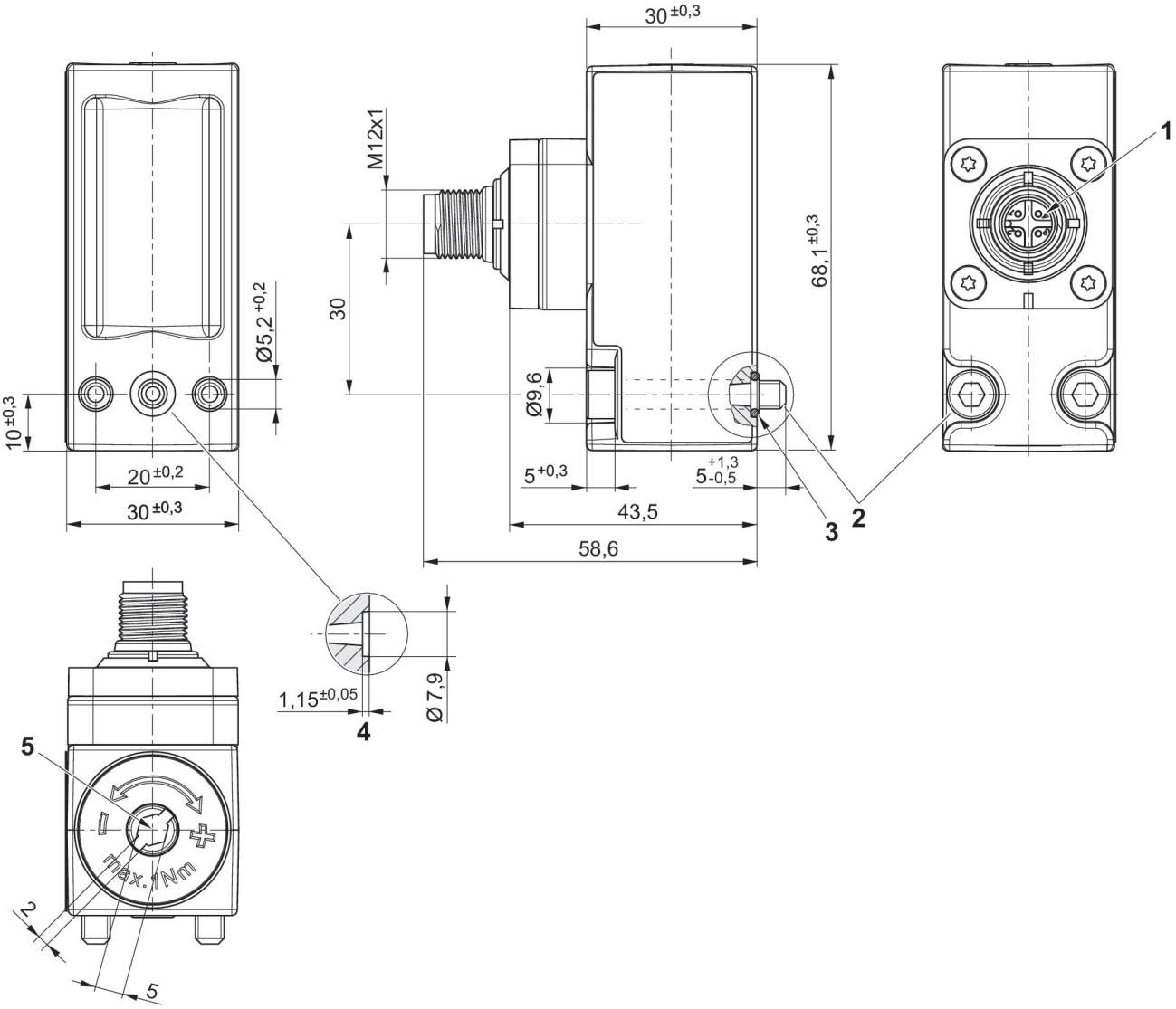
The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in https://www.emerson.com/en-us/support).

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## Dimensions in mm

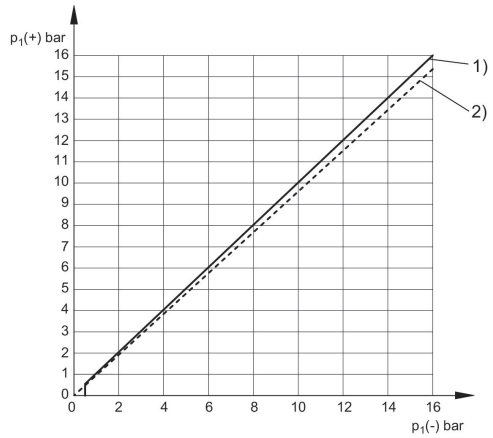



1) M12 connection rotatable by 90° and 30° with detent
2) cylinder screw M5x30 (included in scope of delivery)
3) O-ring Ø5x1,5 (included)
4) O-ring countersink
5) adjustment screw

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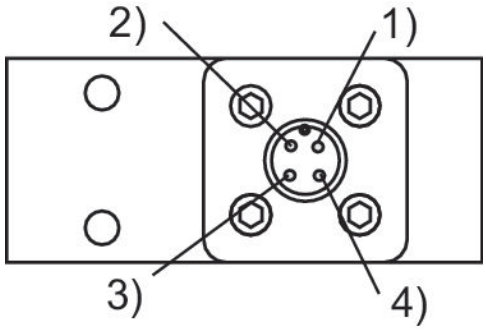
## Differential switching pressure characteristic curve (0,2 - 16 bar)




p1 (+) = upper switching pressure with increasing pressure
p1 (-) = lower switching pressure with decreasing pressure
1) Rising
2) Falling

## Pin assignments

M12x1




## Pin assignments

M12x1

| Pin | Allocation |
|---|---|
| 1 | +UB |
| 2 | break contact |
| 3 | No function |
| 4 | NO (make contact) |

## Max. permissible continuous current I max. [A] with inductive load

| U [V] | I [A] 1) 3) | I [A] 2) 4) |
|---|---|---|
| 30 | 3 | 2 |

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

## Max. permissible continuous current I max. [A] with ohmic load

| U [V] | I [A] 1) | I [A] 2) |
|---|---|---|
| 30 | 4 | 3 |

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