# Pressure Switches, Series PM1, M12, ATEX

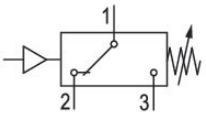
**R412024681**



- 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 | 60 bar |
| Operational voltage | 12-125 V DC<br>12-250 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 % |
| Measurement | Relative pressure |
| Compressed air connection | G 1/4 |
| Compressed air connection type | Internal thread |
| Min. medium temperature | -10 °C |
| Max. medium temperature | 80 °C |
| Medium | Compressed air<br>Hydraulic oil |
| Certificates | ATEX |

| | |
|---|---|
| Electrical connection type | open cable ends |
| ATEX ID | Ex II 3G ec nC IIC T4 Gc<br>Ex II 3D tc IIIC T135° Dc |
| 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 | 0.65 kg |

## Material

| | |
|---|---|
| Housing material | Aluminum |
| Seal material | Acrylonitrile butadiene rubber |
| Material electrical connection | Copper/brass |
| Part No. | R412024681 |

## Technical information

PM1 series pressure switches are suitable for measuring the pressure or vacuum of air and hydraulic oil.

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.

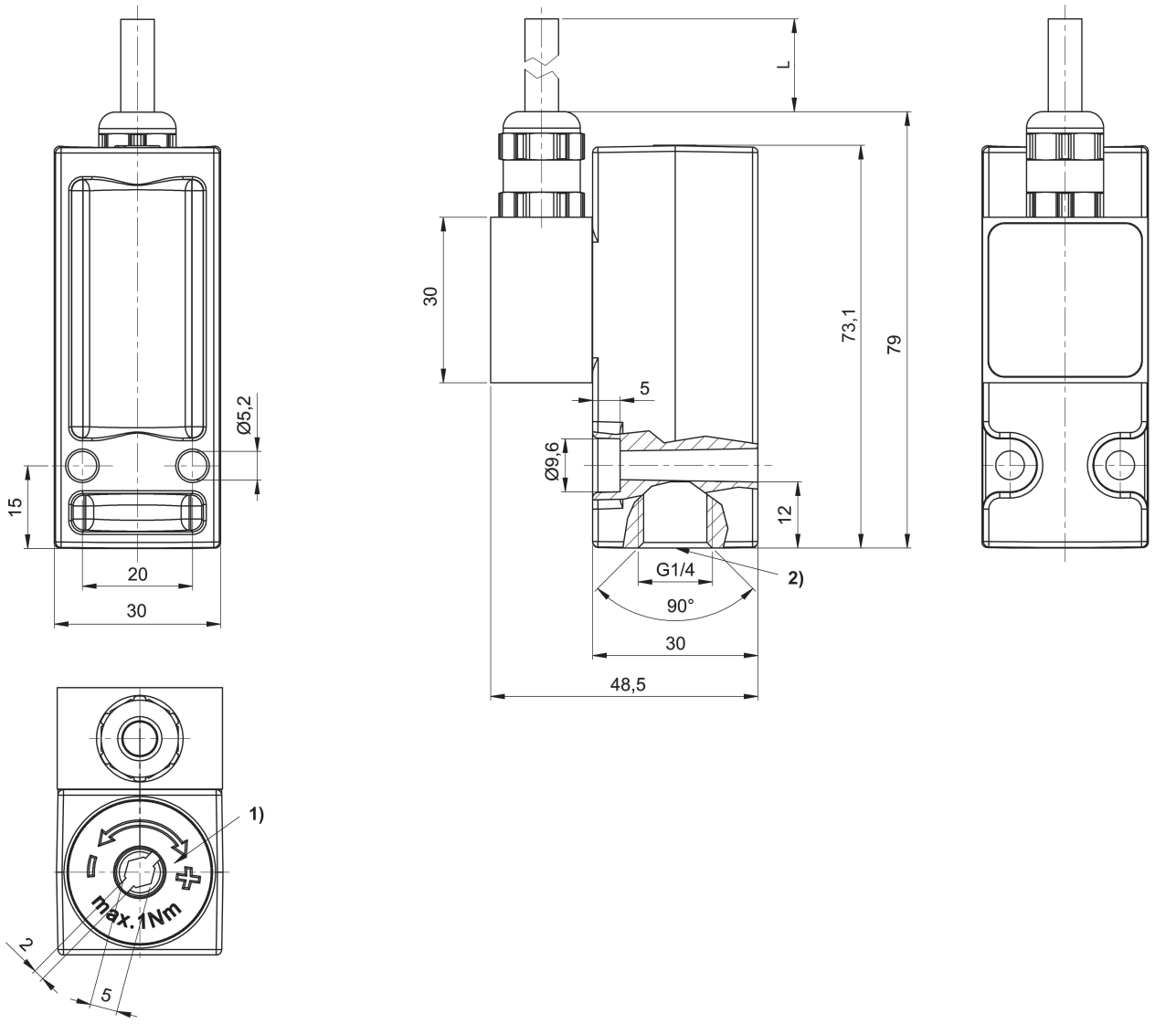
The pressure range is set via the adjustment screw.

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.

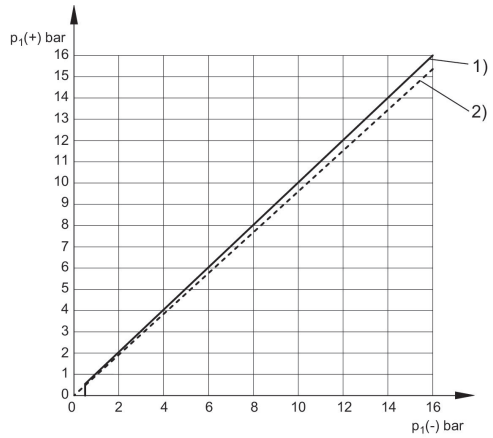
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in https://www.emerson.com/en-us/support).

## Dimensions in mm




1) Adjustment screw, self-holding
2) Tightening torque MA = 12 + 1 Nm

## 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

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

| U [V] | I [A] 1) 3) | I [A] 2) 4) |
|---|---|---|
| 30-250 | 3 | - |
| 30 / 48 / 60 / 125 | - | 2 / 0,55 / 0,4 / 0,05 |

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) |
|---|---|---|
| 30-250 | 3 | - |
| 30 / 48 / 60 / 125 | - | 3 / 1,2 / 0,8 / 0,4 |

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