

Pressure sensor, Series PE5, suitable for leak tests

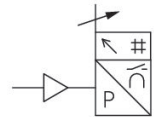
R412026774

PE5

2024-05-28

AVENTICS Series PE5 Pressure sensors

The AVENTICS Series PE5 is an electronic pressure sensor, which combines electronic precision and versatile functions with ideal user friendliness.



Technical information

Industry

Industrial

Output signal

2x PNP, NPN, push-pull in standard mode, 1x in leakage mode

0 - 10 V DC

4 ... 20 mA

Type

electronic

Operating pressure min

-1 bar

Operating pressure max

10 bar

Protection against overpressure

15 bar

Operational voltage

17-30 V DC

Switching logic

NO/NC (adjustable)

Max. shock resistance

30 g

Vibration resistance

5 g (10 - 150 Hz)

Precision (% of full scale value)

± 0,2 %

Hysteresis

adjustable

Measurement

Relative pressure

Display

LCD display, 4 digits

Color setting: green or red

Units displayed

bar

psi

kPa

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	MPa
	inHg
Compressed air connection	G 1/4
Compressed air connection type	Internal thread
Min. medium temperature	0 °C
Max. medium temperature	60 °C
Medium	Compressed air (max. 40 µm)
Certificates	CE declaration of conformity cULus RoHS Conforms with REACH Free of substances that impair surface wetting in the coating process
Electrical connection type	Plug
Electrical connection size	M12x1
Electrical connection number of poles	5-pin
Min. ambient temperature	0 °C
Max. ambient temperature	60 °C
Max. oil content of compressed air	40 mg/m ³
Switching time	< 5 ms
Resetting point	adjustable 0 ... 100%
Switching point	adjustable 0 ... 100%
Quiescent current consumption	<40 mA
Delayed hysteresis	adjustable
Analog output linearity	<± 0.5% of the final value
Maximum load (analog current output)	600 Ω
Protection class	IP65 IP67 with connections assembled
Short circuit resistance	Max. 600 ohms (current output) Min. 3K ohms (voltage output)
Mounting types	Directly on hat rail and wall mounting For panel installation using mounting kit via double nipple
Weight	0.04 kg
Material	
Housing material	Polycarbonate
Seal material	Acrylonitrile butadiene rubber
Material electrical connection	Aluminum
Part No.	R412026774

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Technical information

Alternative pressure connection (G1/4) on the rear side (closed with plug)

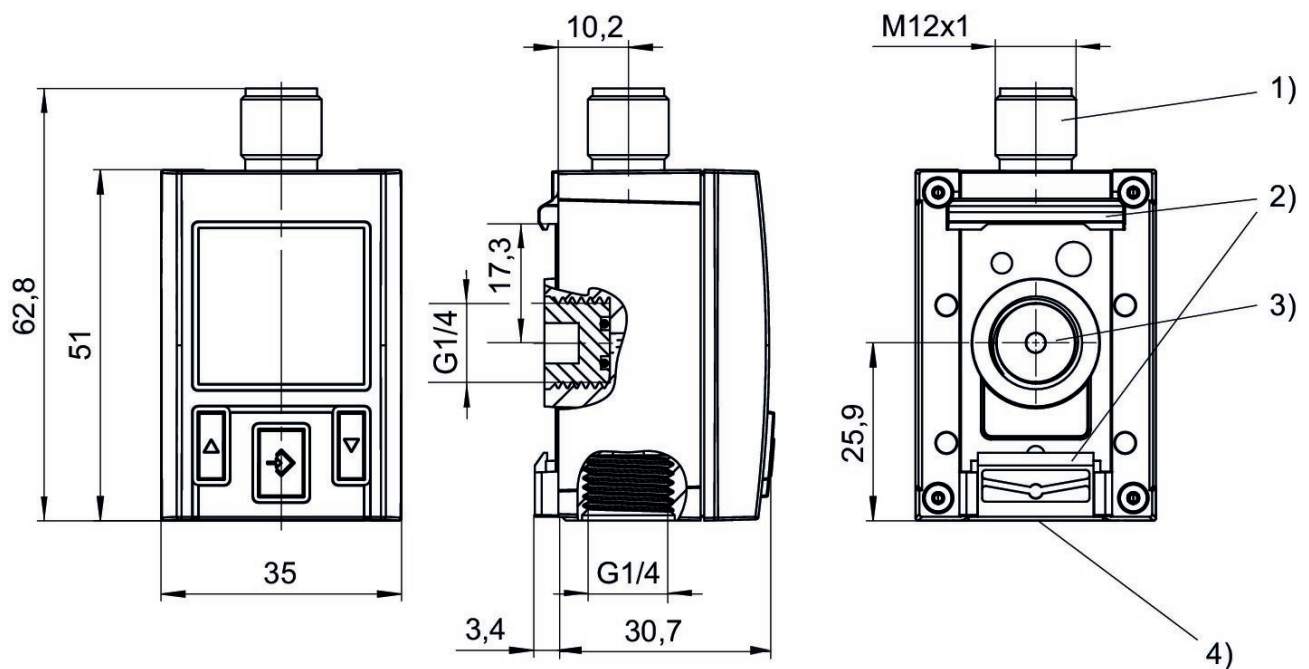
Display color selectable, red or green

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



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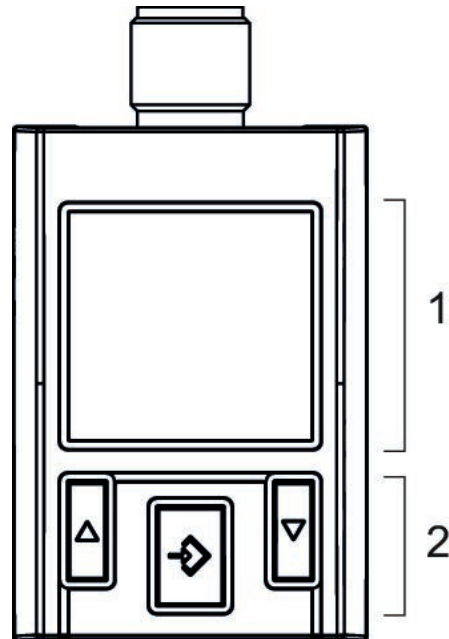
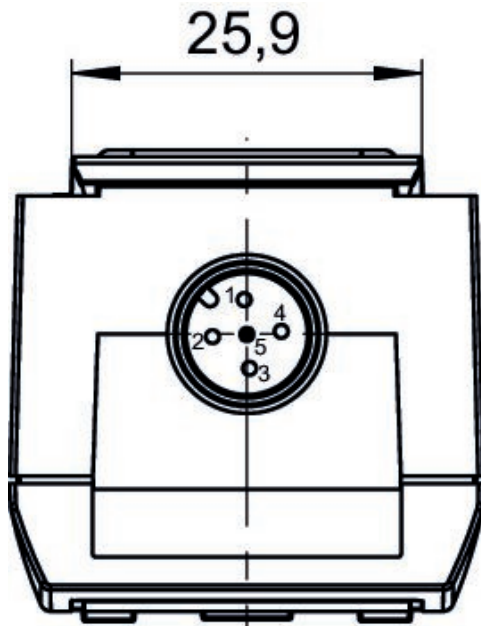
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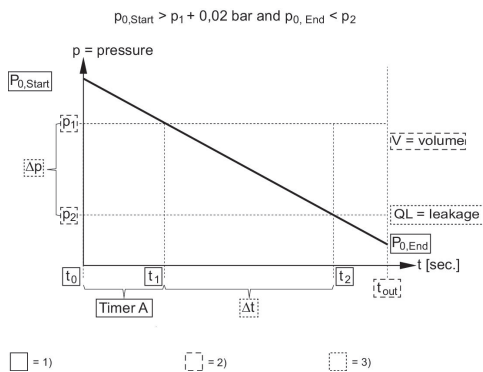
Electr. connection for leak test

Display and operation area



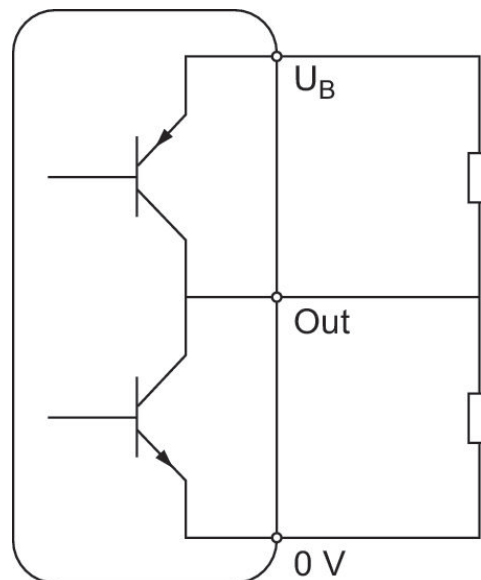
- 1) LCD display
- 2) Control panel with 3 buttons

Leakage characteristic



- 1) Internally stored parameter
- 2) Adjustable parameter
- 3) Output value

Operating mode Push-pull



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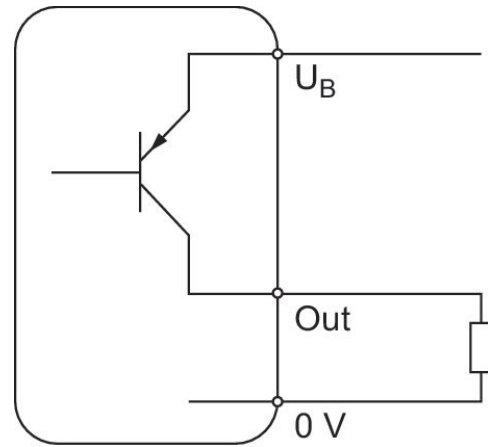
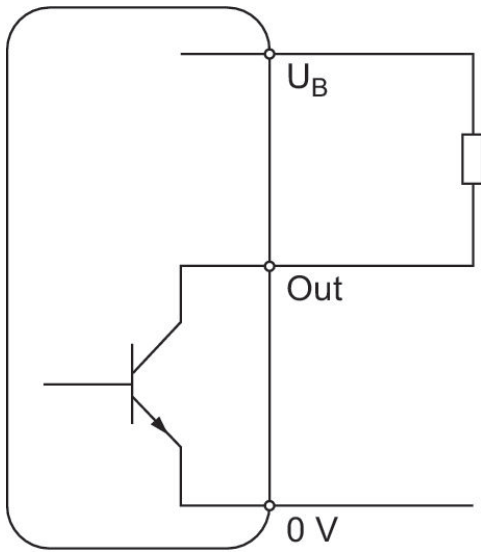
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Operating mode

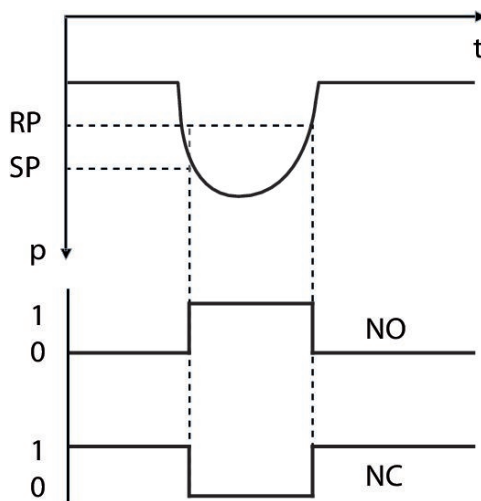
NPN

Operating mode

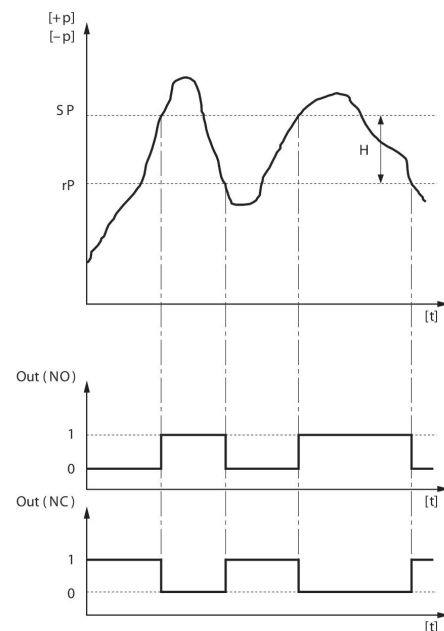
PNP



Hysteresis function: switching and resetting behavior dependent on pressure p and time t
In case of underpressure



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In case of overpressure



H: Hysteresis
SP = switching point RP = resetting point
Out (NC): switch output, break contact Out (NO): switch output, make contact

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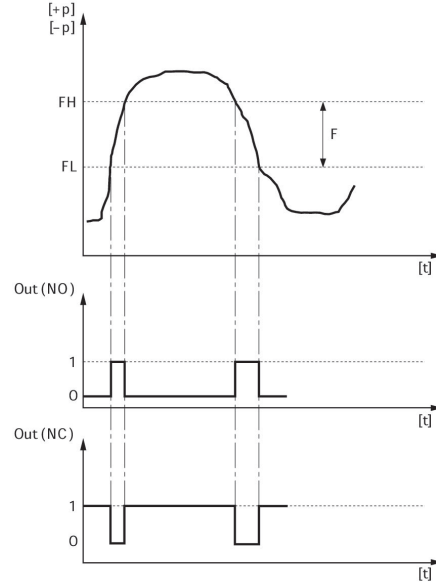
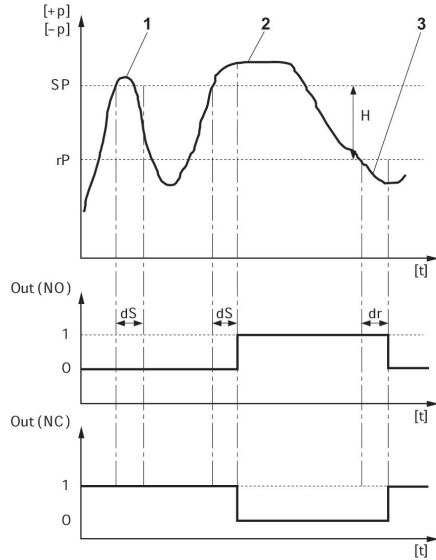
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Delayed hysteresis function: switching and resetting behavior depending on pressure p and time t

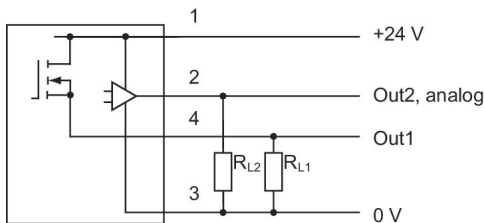
Window function: switching and resetting behavior depending on pressure p and time t



H: Hysteresis
 SP = switching point RP = resetting point
 Out (NC): switch output, break contact Out (NO): switch output, make contact
 dS: switching delay dR = reset delay
 1) period of pressure over the switching point $< dS$: pressure sensor does not switch
 2) Period of pressure over the switching point $> dS$: pressure sensor switches
 3) Period of pressure under the resetting point $> dR$: pressure sensor switches

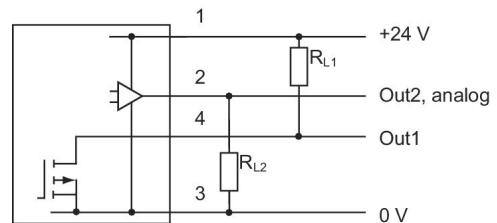
FH: pressure band, upper value
 FL: pressure band, lower value
 Out (NC): switch output, break contact Out (NO): switch output, make contact

Block diagram 1x PNP and 1x analog



RL = storable position

Block diagram 1x NPN and 1x analog



RL = storable position

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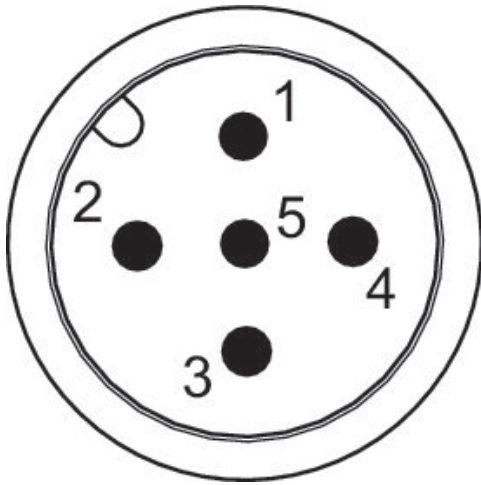
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Pin assignments

M12x1

5-pin



Pin assignments

Pin	Allocation
1	Supply Voltage
2	Switch output PNP/NPN/push-pull, switchable
3	0 V
4	Switch output PNP/NPN/push-pull/leakage mode, digital switch input PNP
5	Analog output (0 to 10 V DC, 4 to 20 mA)