

PE5



AVENTICS™

AVENTICS Series PE5 Pressure sensors



Series PE5

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

- Simplified navigation in accordance with VDMA
- Protection class increased to IP65 and IP67
- Contains zero point offset function
- PNP, NPN, and push-pull are freely selectable
- Option to switch between current and voltage
- UL approval and PWIS-free
- Compliant with CE, RoHS and Reach



Product overview

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Pressure sensor, Series PE5, push-in fitting

Electrical connection 2, type: Plug

Electrical connection 2, thread size: M12x1

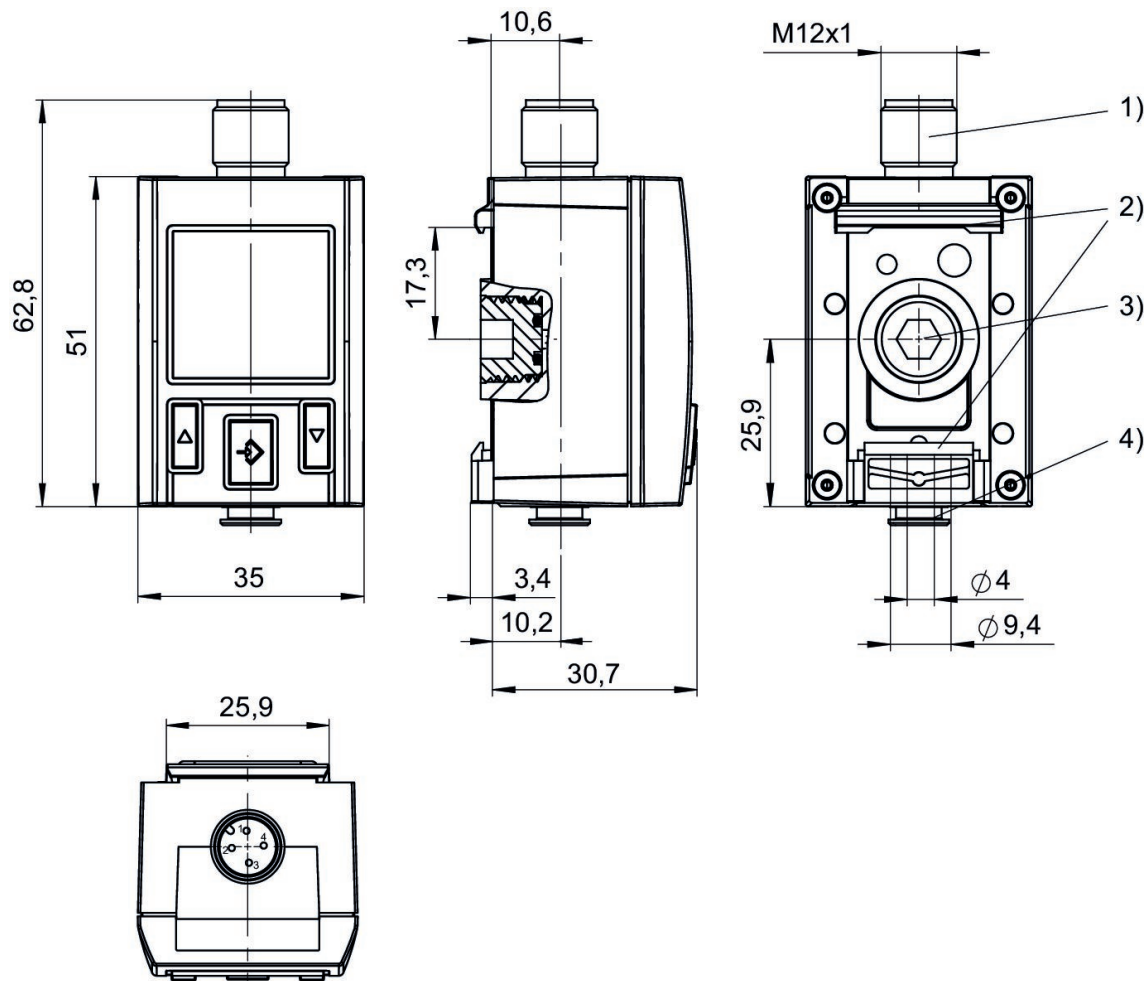
Certificates: CE declaration of conformity cULus RoHS Conforms with REACH Free of substances that impair surface wetting in the coating process

Electrical connection 2, number of poles: 4-pin



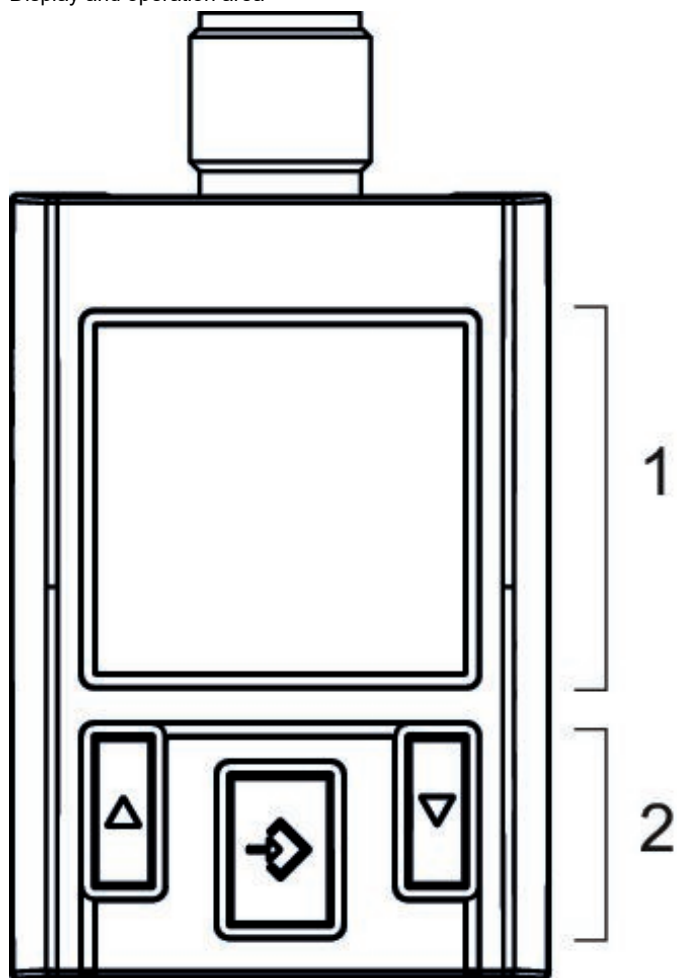
Thread connection	Operating pressure min [bar]	Operating pressure max [bar]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Protection against over-pressure	Output signal digital	Hysteresis	Part No.
Ø 4	-1	0	17	30	5 bar	2 x PNP, NPN, Push-pull	adjustable	R412010760
Ø 4	-1	0	17	30	5 bar	PNP, NPN, Push-pull, 0 - 10 V DC, 4 ... 20 mA	adjustable	R412010768
Ø 4	-1	0	17	30	5 bar	PNP, NPN, push-pull, 1x IO-Link	adjustable	R412010774
Ø 4	-1	1	17	30	5 bar	2 x PNP, NPN, Push-pull	adjustable	R412010762
Ø 4	0	6	17	30	15 bar	PNP, NPN, Push-pull, 0 - 10 V DC, 4 ... 20 mA	adjustable	R412010770
Ø 4	0	6	17	30	15 bar	2 x PNP, NPN, Push-pull	adjustable	R412010764
Ø 4	0	6	17	30	15 bar	PNP, NPN, push-pull, 1x IO-Link	adjustable	R412010776
Ø 4	0	10	17	30	15 bar	PNP, NPN, Push-pull, 0 - 10 V DC, 4 ... 20 mA	adjustable	R412010772
Ø 4	0	10	17	30	15 bar	2 x PNP, NPN, Push-pull	adjustable	R412010766
Ø 4	0	10	17	30	15 bar	PNP, NPN, push-pull, 1x IO-Link	adjustable	R412010778
Ø 4	0	12	17	30	16 bar	2 x PNP, NPN, Push-pull	adjustable	R412010781
Ø 4	0	12	17	30	16 bar	PNP, NPN, push-pull, 1x IO-Link	adjustable	R412010805

Dimensions



- 1) M12x1 electrical connection
- 2) Mounting for hat rail and wall mounting
- 3) Alternative pressure connection (G1/4) closed with plug
- 4) Pressure connection, tubing ϕ 4 mm

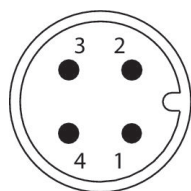
Display and operation area



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

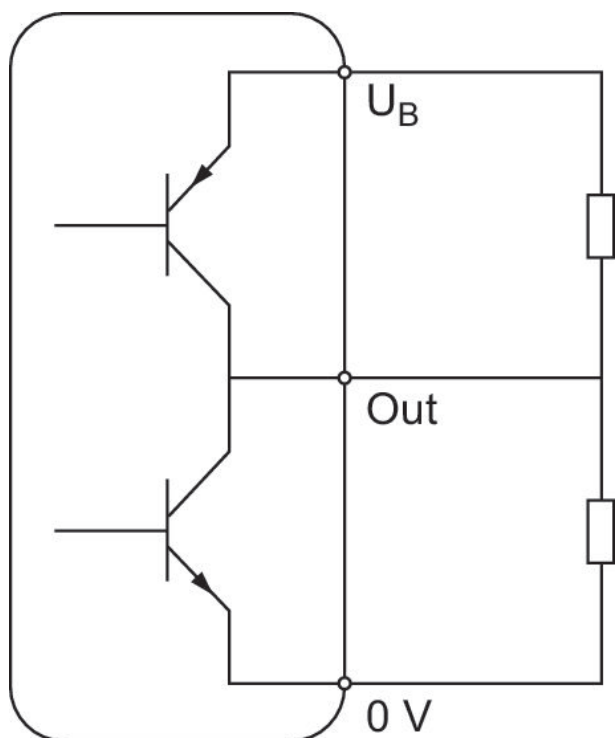
R412010760, R412010768, R412010774, R412010762, R412010770, R412010764, R412010776, R412010772, R412010766, R412010778, R412010781, R412010805

Pin assignments

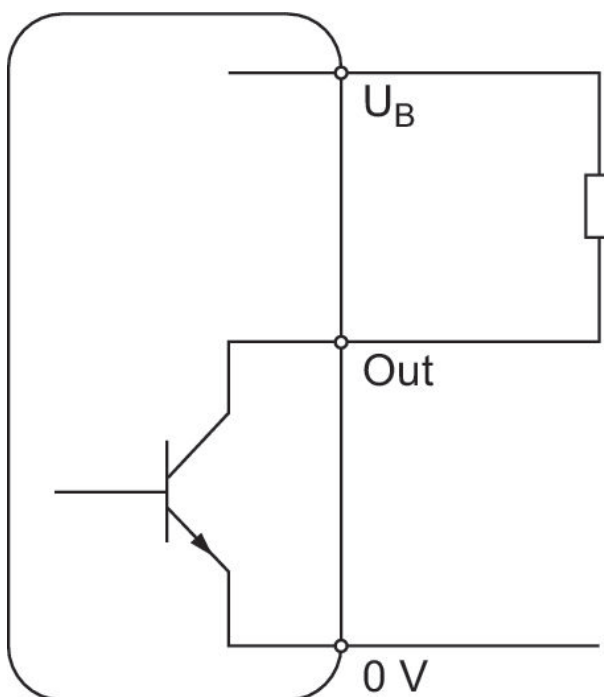


Pin	Allocation
1	operational voltage + UB
2	switch output Out2, analog: A or V, digital: PNP, NPN, push-pull
3	0 V
4	switch output Out1, digital: PNP, NPN, push-pull

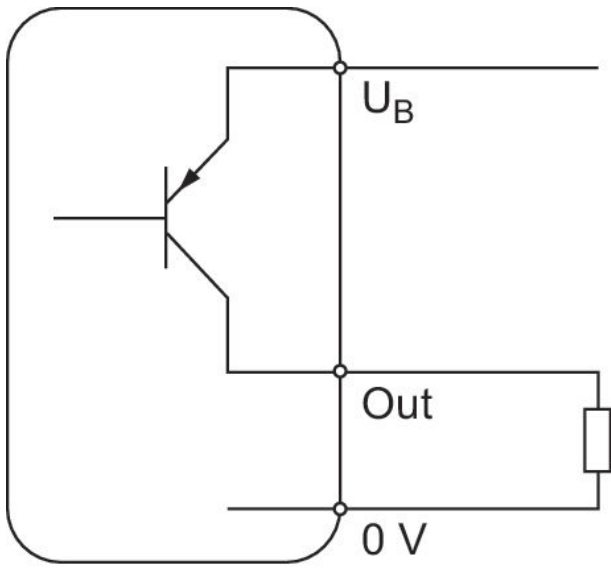
Operating mode



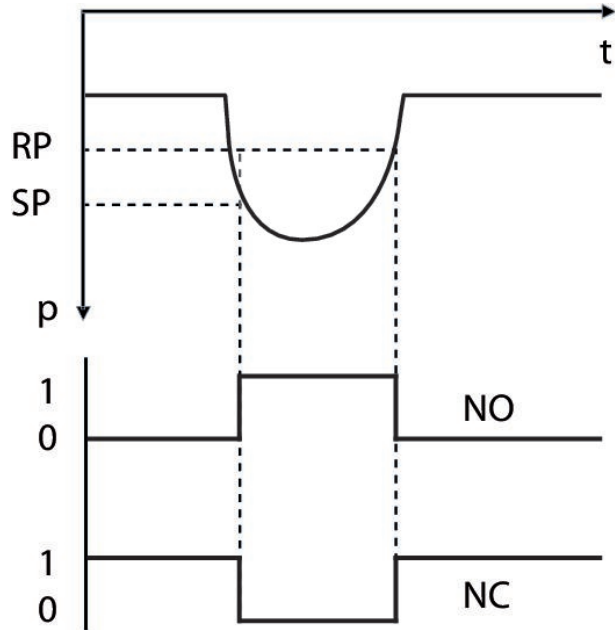
Operating mode



Operating mode

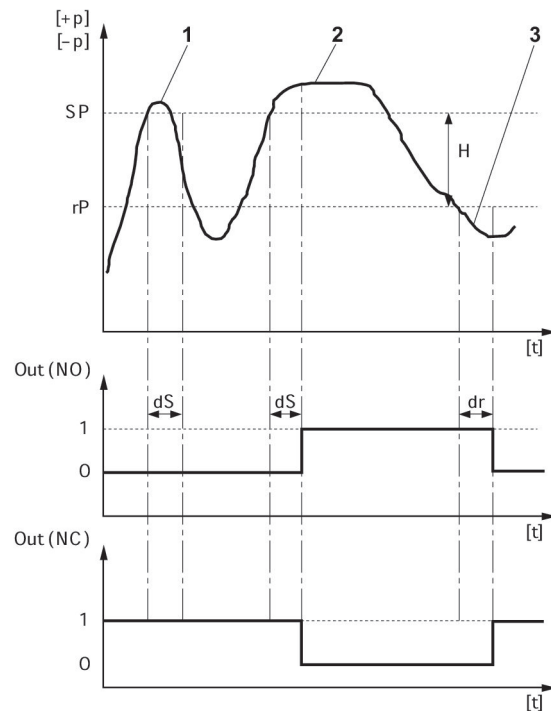
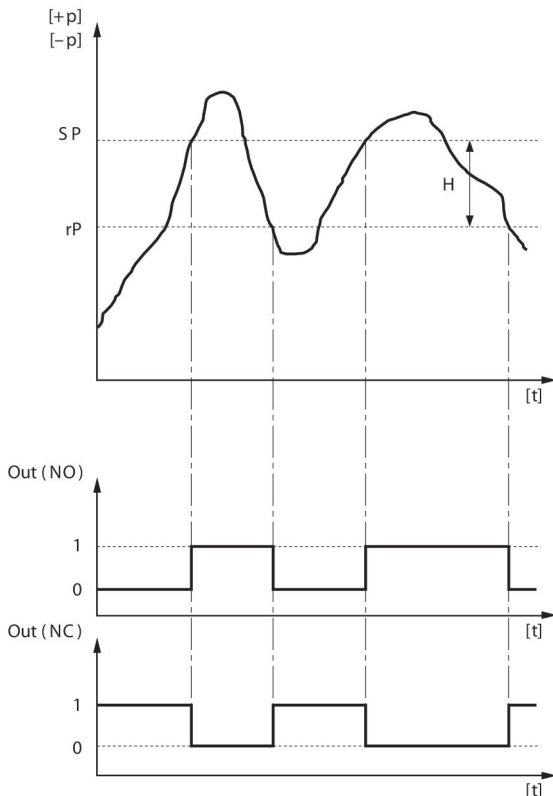


Hysteresis function: switching and resetting behavior dependent on pressure p and time t



Hysteresis function: switching and resetting behavior dependent on pressure p and time t

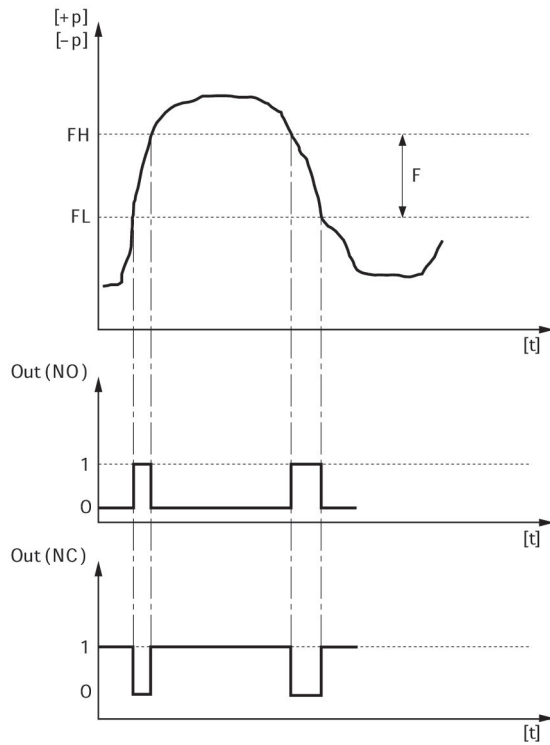
Delayed hysteresis function: switching and resetting behavior depending on pressure p and time t



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

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 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

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



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

Pressure sensor, Series PE5, Internal thread

Electrical connection 2, type: Plug

Electrical connection 2, thread size: M12x1

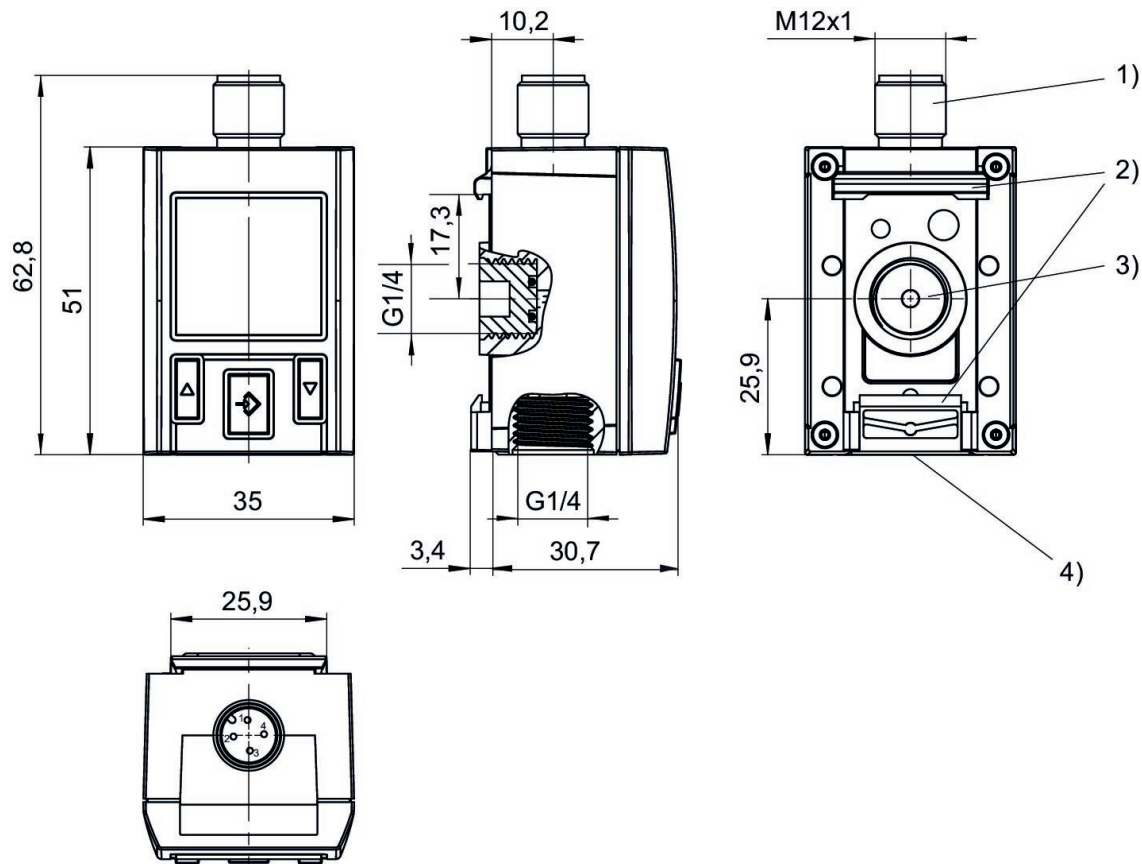
Certificates: CE declaration of conformity cULus RoHS Conforms with REACH Free of substances that impair surface wetting in the coating process

Electrical connection 2, number of poles: 4-pin



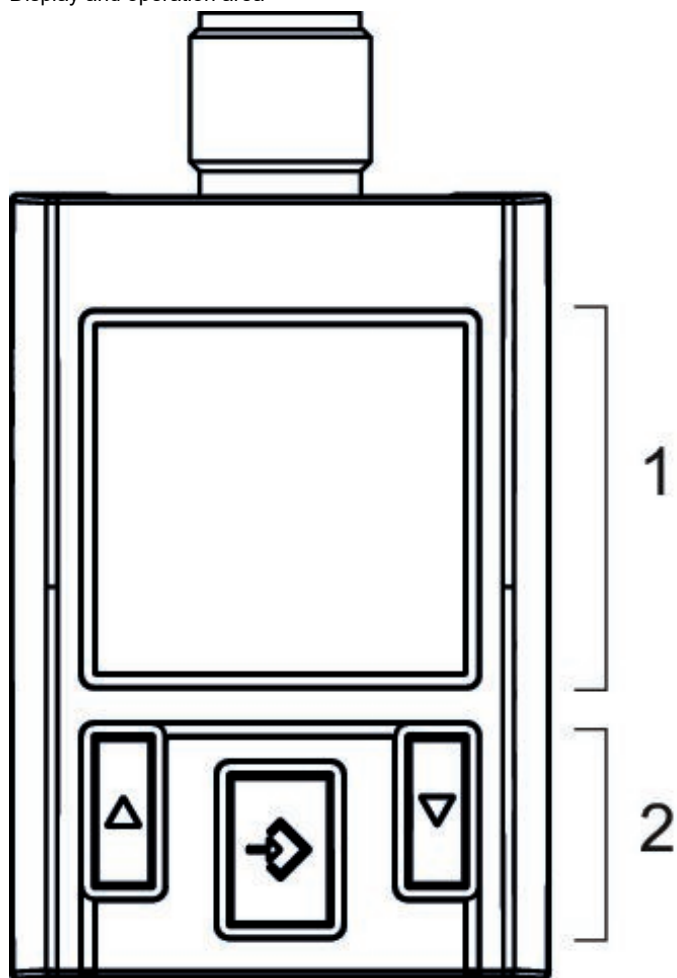
Thread connection	Operating pressure min [bar]	Operating pressure max [bar]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Protection against over-pressure	Output signal digital	Hysteresis	Part No.
G 1/4	-1	0	17	30	5 bar	2 x PNP, NPN, Push-pull	adjustable	R412010761
G 1/4	-1	0	17	30	5 bar	PNP, NPN, Push-pull, 0 - 10 V DC, 4 ... 20 mA	adjustable	R412010769
G 1/4	-1	0	17	30	5 bar	PNP, NPN, push-pull, 1x IO-Link	adjustable	R412010775
G 1/4	-1	1	17	30	5 bar	2 x PNP, NPN, Push-pull	adjustable	R412010763
G 1/4	0	6	17	30	15 bar	PNP, NPN, Push-pull, 0 - 10 V DC, 4 ... 20 mA	adjustable	R412010771
G 1/4	0	6	17	30	15 bar	2 x PNP, NPN, Push-pull	adjustable	R412010765
G 1/4	0	6	17	30	15 bar	PNP, NPN, push-pull, 1x IO-Link	adjustable	R412010777
G 1/4	0	10	17	30	15 bar	PNP, NPN, Push-pull, 0 - 10 V DC, 4 ... 20 mA	adjustable	R412010773
G 1/4	0	10	17	30	15 bar	2 x PNP, NPN, Push-pull	adjustable	R412010767
G 1/4	0	10	17	30	15 bar	PNP, NPN, push-pull, 1x IO-Link	adjustable	R412010779
G 1/4	0	12	17	30	16 bar	2 x PNP, NPN, Push-pull	adjustable	R412010782
G 1/4	0	12	17	30	16 bar	PNP, NPN, push-pull, 1x IO-Link	adjustable	R412010806

Dimensions



- 1) M12x1 electrical connection
- 2) Mounting for hat rail and wall mounting
- 3) Alternative pressure connection (G1/4) closed with plug
- 4) Pressure connection G1/4

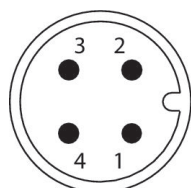
Display and operation area



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

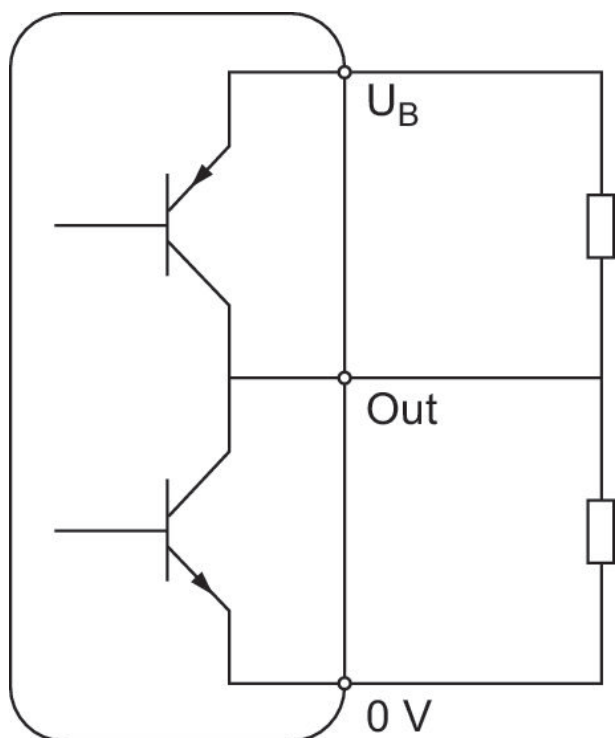
R412010761, R412010769, R412010775, R412010763, R412010771, R412010765, R412010777, R412010773, R412010767, R412010779, R412010782, R412010806

Pin assignments

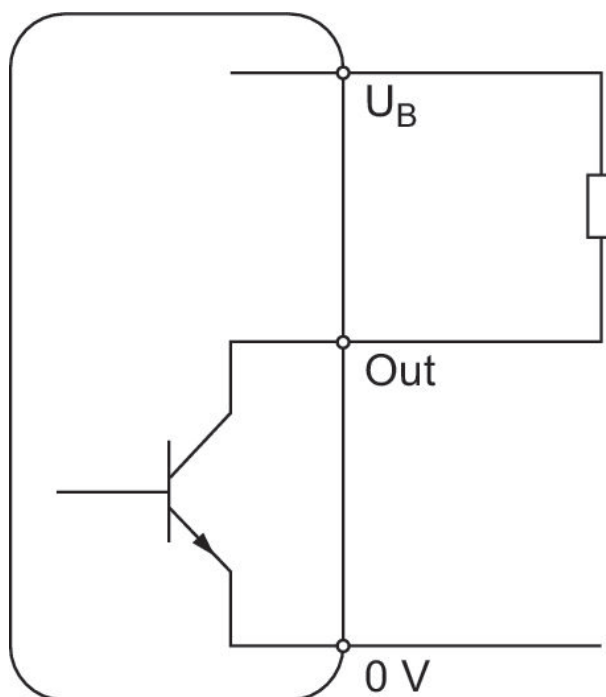


Pin	Allocation
1	operational voltage + UB
2	switch output Out2, analog: A or V, digital: PNP, NPN, push-pull
3	0 V
4	switch output Out1, digital: PNP, NPN, push-pull

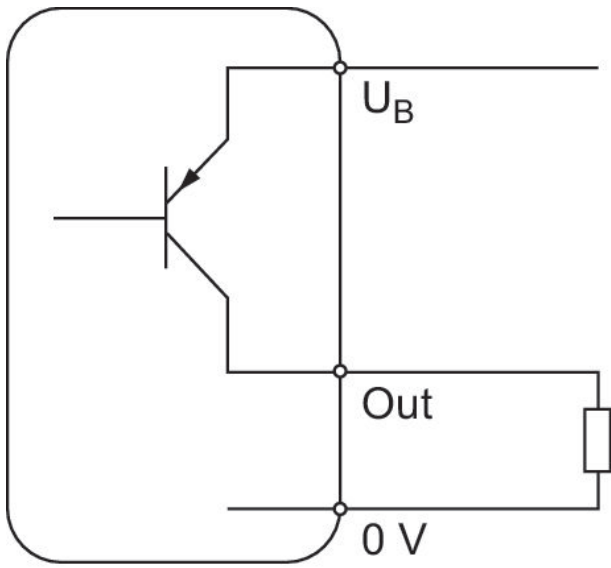
Operating mode



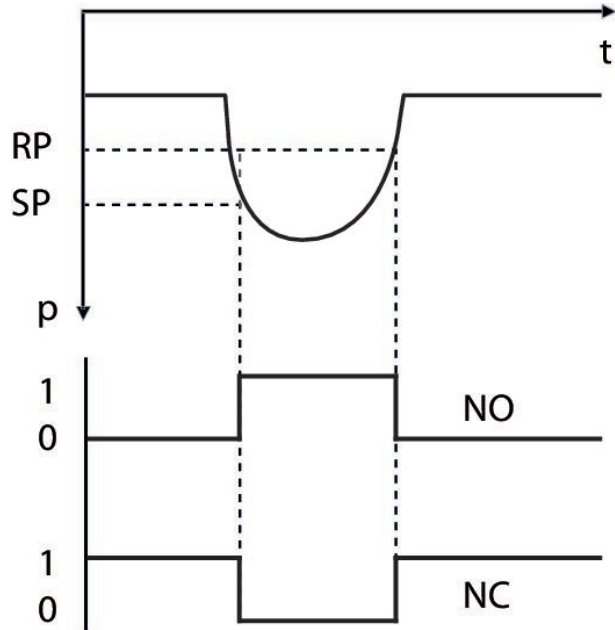
Operating mode



Operating mode

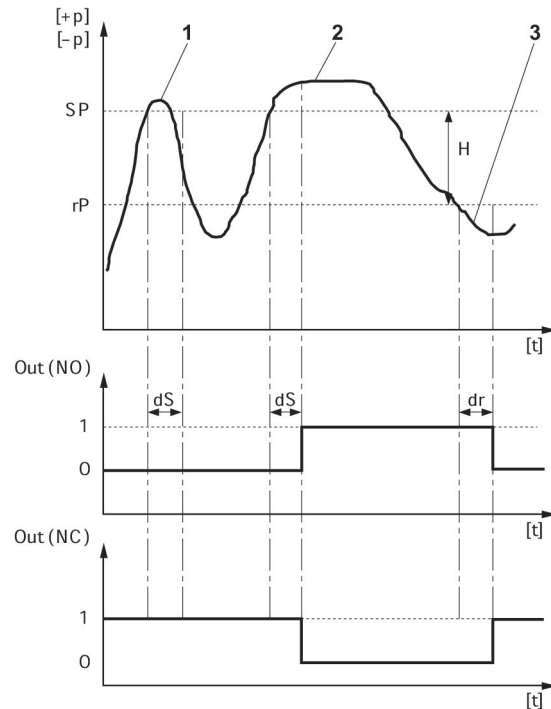
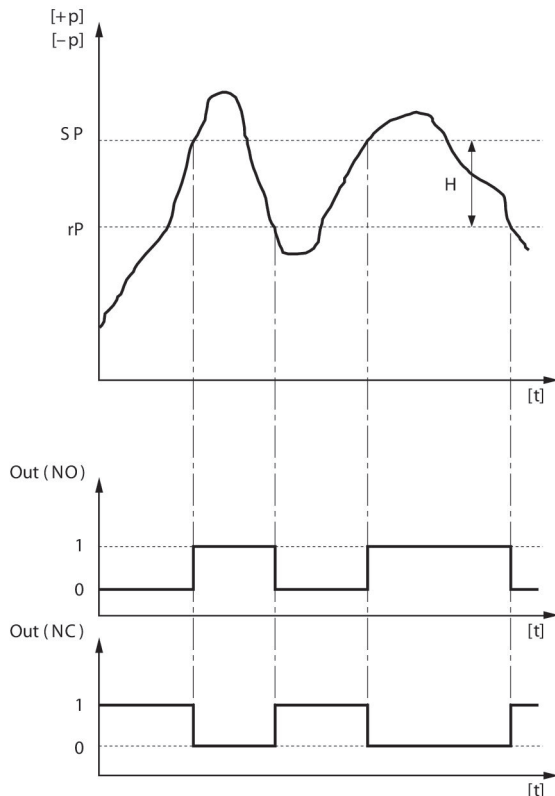


Hysteresis function: switching and resetting behavior dependent on pressure p and time t



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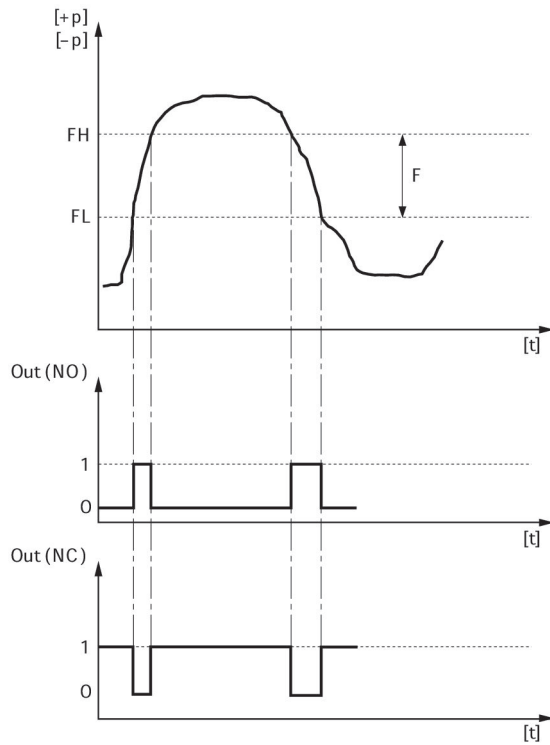
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Window function: switching and resetting behavior depending on pressure p and time t



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

Pressure sensor, Series PE5, suitable for leak tests

Electrical connection 2, type: Plug

Electrical connection 2, thread size: M12x1

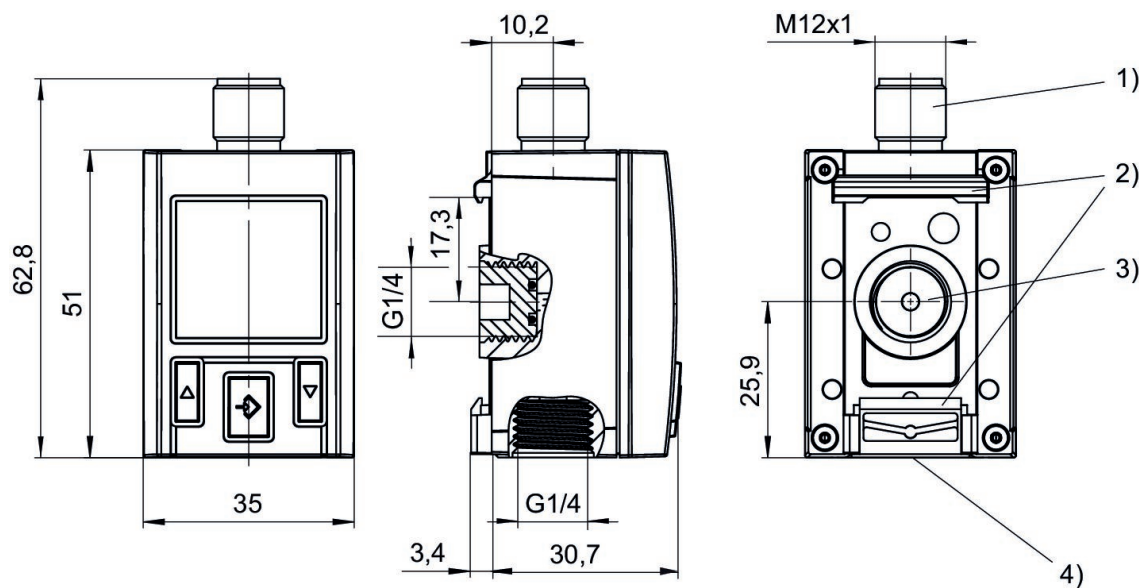
Certificates: CE declaration of conformity cULus RoHS Conforms with REACH Free of substances that impair surface wetting in the coating process

Electrical connection 2, number of poles: 5-pin

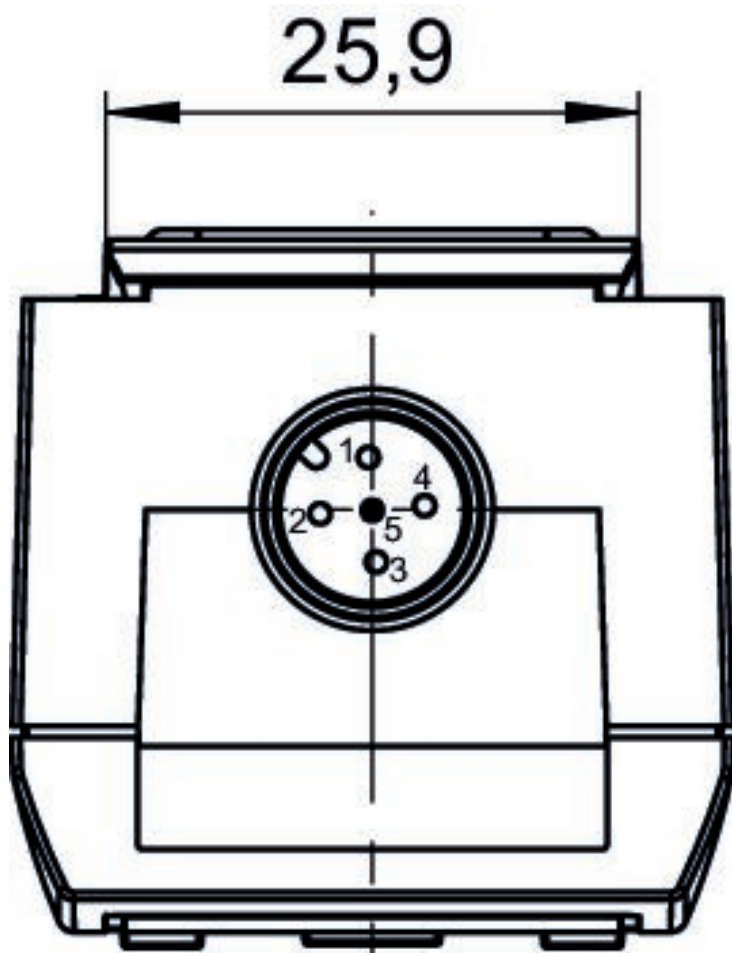


Thread connection	Operating pressure min [bar]	Operating pressure max [bar]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Protection against over-pressure	Output signal digital	Hysteresis	Part No.
G 1/4	-1	10	17	30	15 bar	2x PNP, NPN, push-pull in standard mode, 1x in leakage mode, 0 - 10 V DC, 4 ... 20 mA	adjustable	R412026774

Dimensions

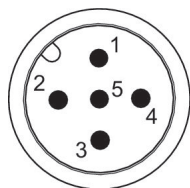


Electr. connection for leak test



R412026774

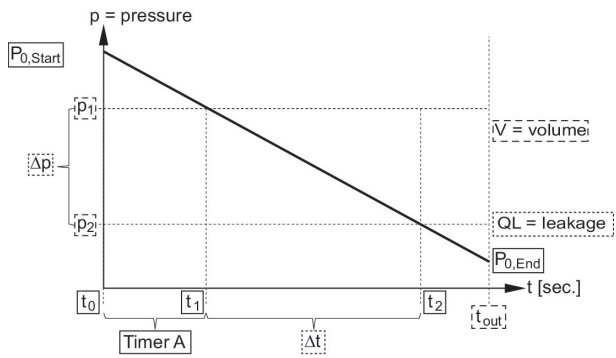
Pin assignments



Pin	Allocation
1	operational voltage + UB
2	switch output Out2, analog: A or V, digital: PNP, NPN, push-pull
3	0 V
4	switch output Out1, digital: PNP, NPN, push-pull

Leakage characteristic

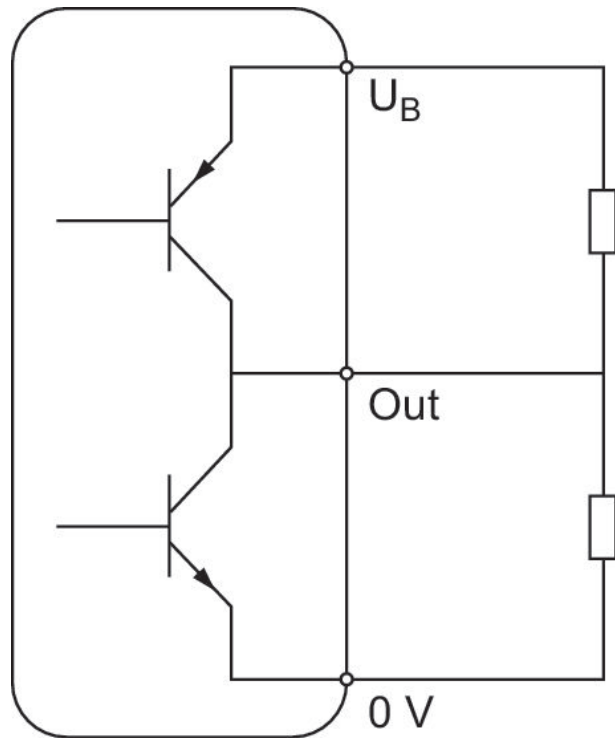
$p_{0,Start} > p_1 + 0,02 \text{ bar}$ and $p_{0,End} < p_2$



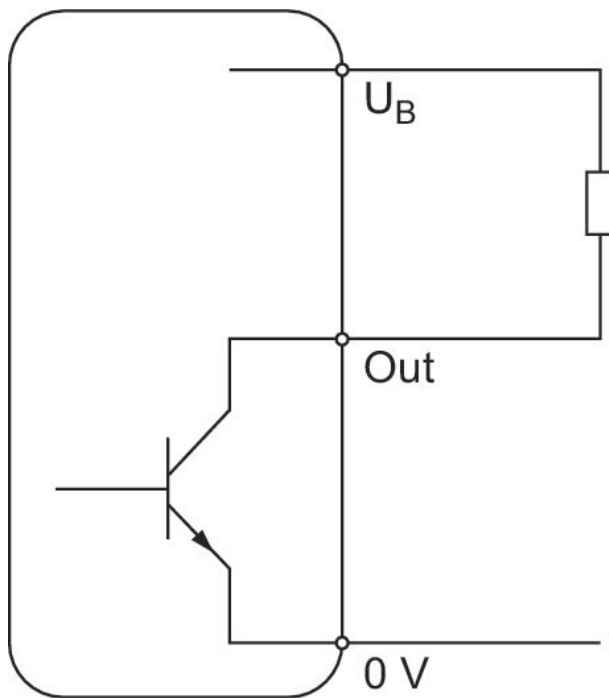
□ = 1) □ = 2) □ = 3)

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

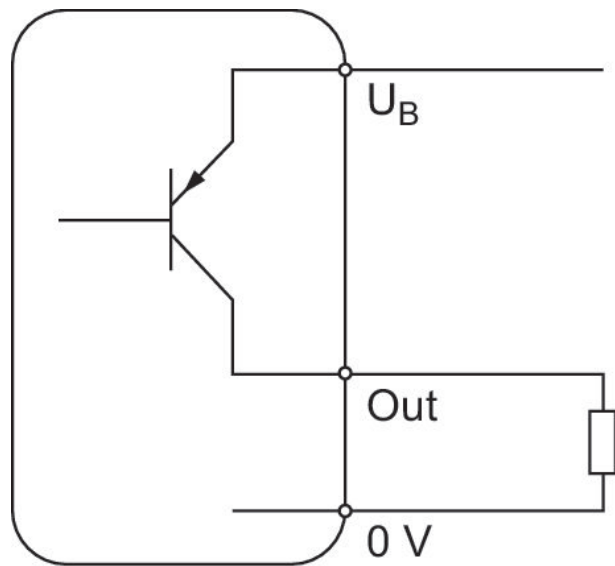
Operating mode



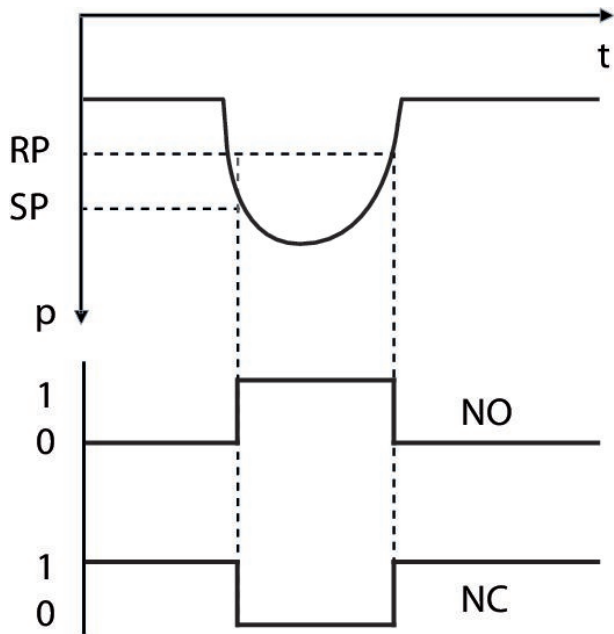
Operating mode



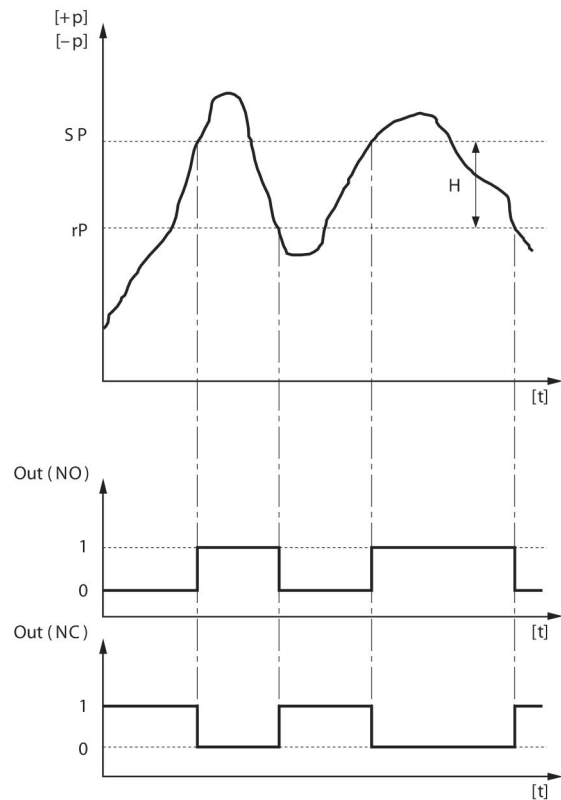
Operating mode



Hysteresis function: switching and resetting behavior dependent on pressure p and time t

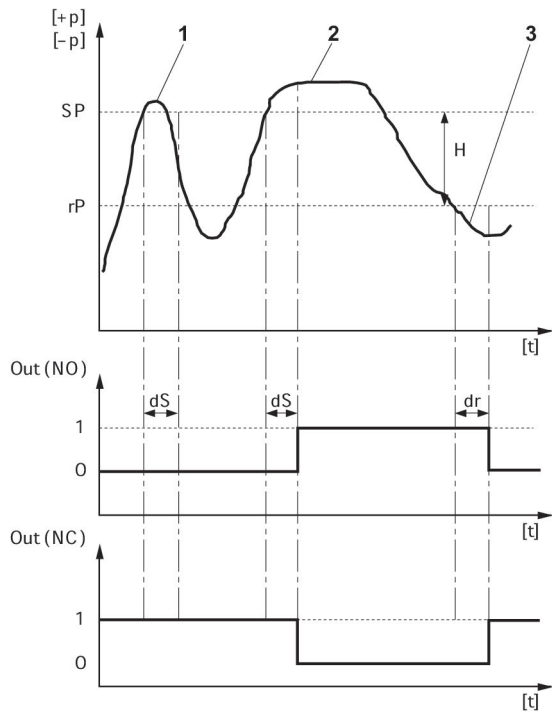


Hysteresis function: switching and resetting behavior dependent on pressure p and time t

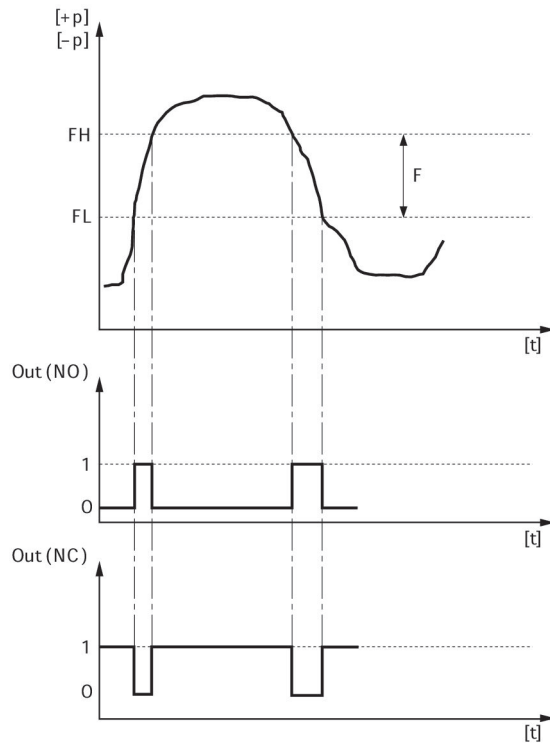


H: Hysteresis
 SP = switching point RP = resetting point
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Delayed hysteresis function: switching and resetting behavior depending on pressure p and time t



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



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of pressure under the resetting point > dR: pressure sensor switches

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FL: pressure band, lower value

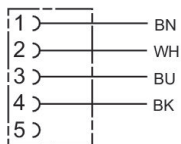
Out (NC): switch output, break contact Out (NO): switch output, make contact

Round plug connector, Series CON-RD, 5-pin, angled, unshielded

Electrical connection 1, type: Socket

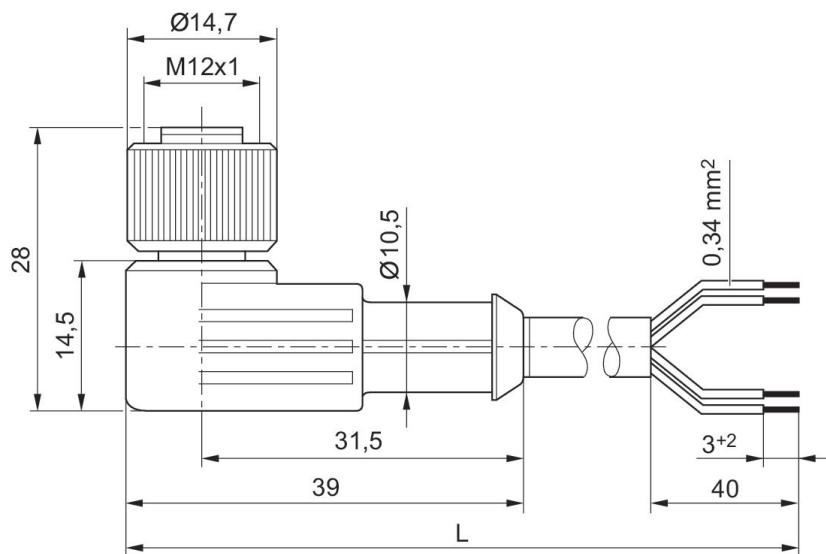
Electrical connection 1, thread size: M12x1

Electrical connection 1, number of poles: 5-pin



Operational voltage	Current [A]	Shielding	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, coding	Electrical connection 2, type	Cable length [m]	Cable-Ø [mm]	Wire cross-section [mm ²]	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
48 V AC/DC	4	unshielded	Socket	M12x1	A-coded	open cable ends	3	5.2	0.34	-40	85	1834484259
48 V AC/DC	4	unshielded	Socket	M12x1	A-coded	open cable ends	5	5.2	0.34	-40	85	1834484260
48 V AC/DC	4	unshielded	Socket	M12x1	A-coded	open cable ends	10	5.2	0.34	-40	85	1834484261

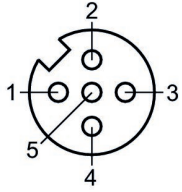
Dimensions



L = length

1834484259, 1834484260, 1834484261

Pin assignment, socket



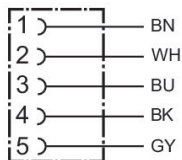
(1) BN=brown (2) WH=white (3) BU=blue (4) BK=black
(5) not assigned

Round plug connector, Series CON-RD, 5-pin, angled, shielded

Electrical connection 1, type: Socket

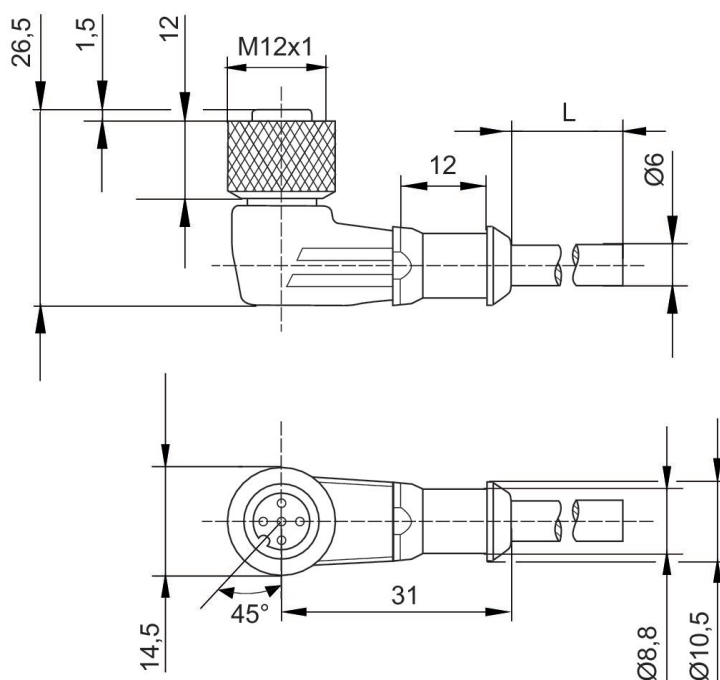
Electrical connection 1, thread size: M12x1

Electrical connection 1, number of poles: 5-pin



Operational voltage	Current [A]	Shielding	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, coding	Electrical connection 2, type	Cable length [m]	Cable-Ø [mm]	Wire cross-section [mm²]	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
48 V AC/DC	4	shielded	Socket	M12x1	A-coded	open cable ends	2.5	6	0.34	-25	80	R419800109
48 V AC/DC	4	shielded	Socket	M12x1	A-coded	open cable ends	5	6	0.34	-25	80	R419800110
48 V AC/DC	4	shielded	Socket	M12x1	A-coded	open cable ends	10	6	0.34	-25	80	R419800546

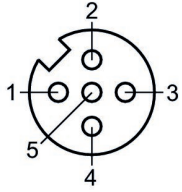
Dimensions



L = length

R419800109, R419800110, R419800546

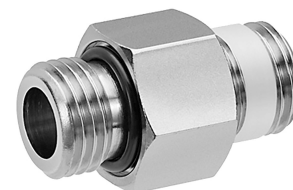
Pin assignment, socket



(1) BN=brown (2) WH=white (3) BU=blue (4) BK=black (5) GY=grey

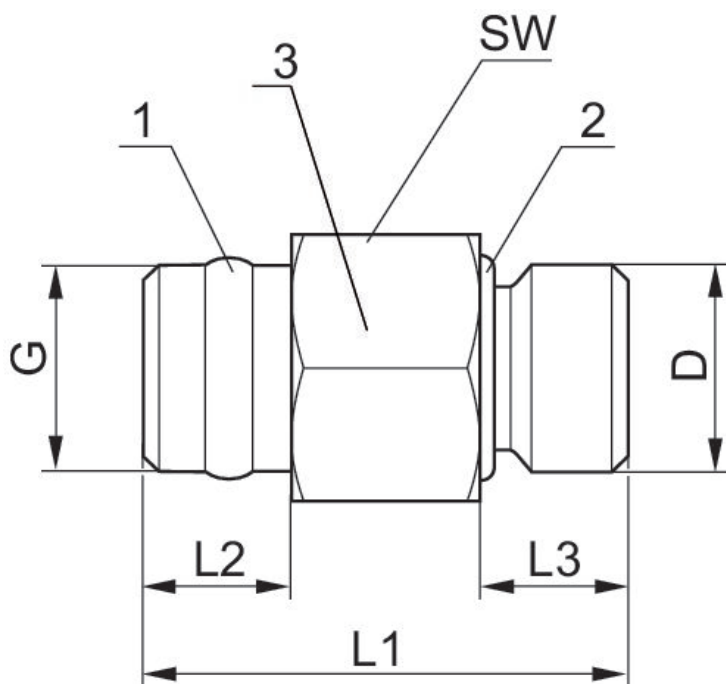
Double nipple, Series PE5

Compressed air connection type: External thread
Compressed air connection type 2: External thread



G	Ø D	Delivery unit [piece]	Weight [kg]	Part No.
G 1/4	G 1/8	2	0.04	R412010015
G 1/4	G 1/4	2	0.04	R412010016

Dimensions



- 1) sealing ring Polytetrafluorethylen
- 2) O-ring - acrylonitrile butadiene rubber
- 3) Housing - brass, nickel-plated

Part No.	Port G	Port D	L1	L2	L3	SW
R412010015	G 1/4	G 1/8	30	10	8.5	17
R412010016	G 1/4	G 1/4	30	10	8.5	17

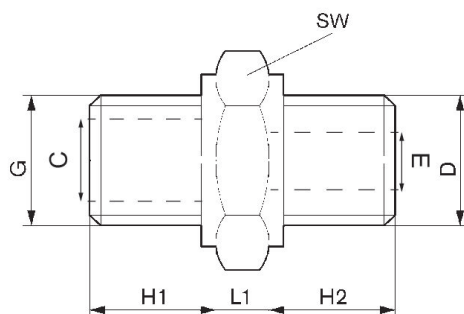
Double nipple

Compressed air connection type: External thread
Compressed air connection type 2: External thread



G	Ø D	Delivery unit [piece]	Part No.
G 1/4	G 1/8	10	1823391016
G 1/4	G 1/4	10	1823391017

Dimensions



Part No.	Port D	Port G	ØC	ØE	H1	H2	L1	SW
1823391081	M5	M5	-	2	4.5	4.5	4	8
1823391100	M5	G 1/8	-	-	7	5	5	13
1823391015	G 1/8	G 1/8	8	5	7.5	7.5	4	14
1823391016	G 1/8	G 1/4	8	5	10	7	5	17
1823391017	G 1/4	G 1/4	8	7.5	10	10	5	17
1823391018	G 1/4	G 3/8	12	7.5	10	10	5	22
1823391019	G 3/8	G 3/8	12	10	10	10	5	22
1823391020	G 3/8	G 1/2	15	10	12	10	6	27
1823391029	G 1/2	G 1/2	15	13	12	12	6	27
1823391286	G 1/2	G 3/4	20	13	12	12	7	32
1823391287	G 3/4	G 3/4	20	18	12	12	7	32
1823391288	G 3/4	G 1	25	18	15	12	8	41
1823391289	G 1	G 1	25	22	15	15	8	41

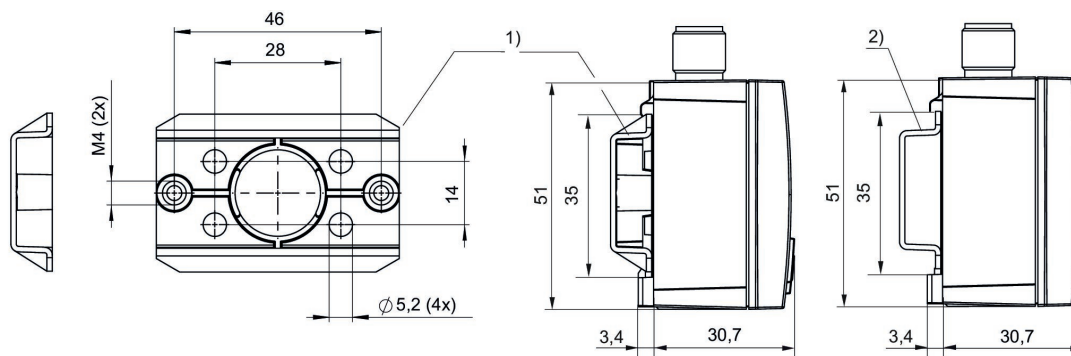
Wall mounting and hat rail

For series: PE5



Delivery unit [piece]	Weight [kg]	Part No.
1	0.004	R412010405

Dimensions



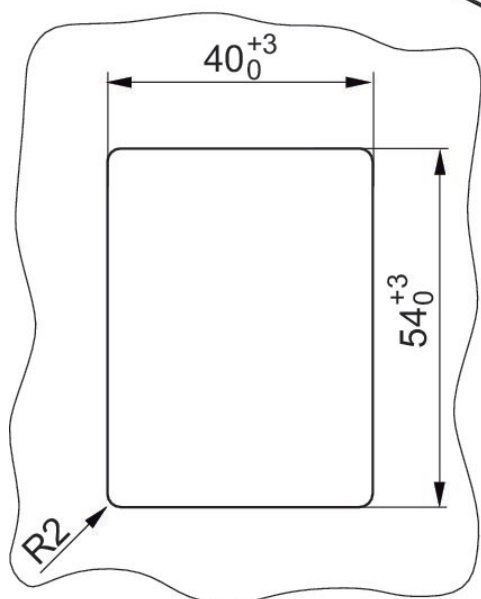
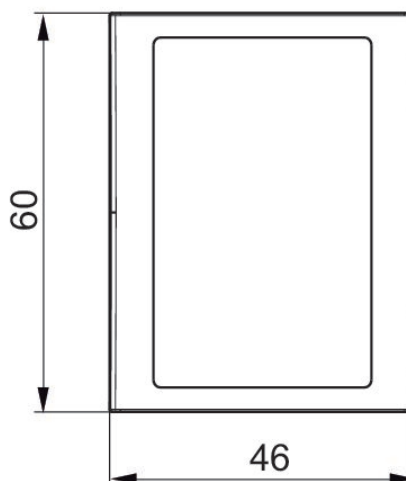
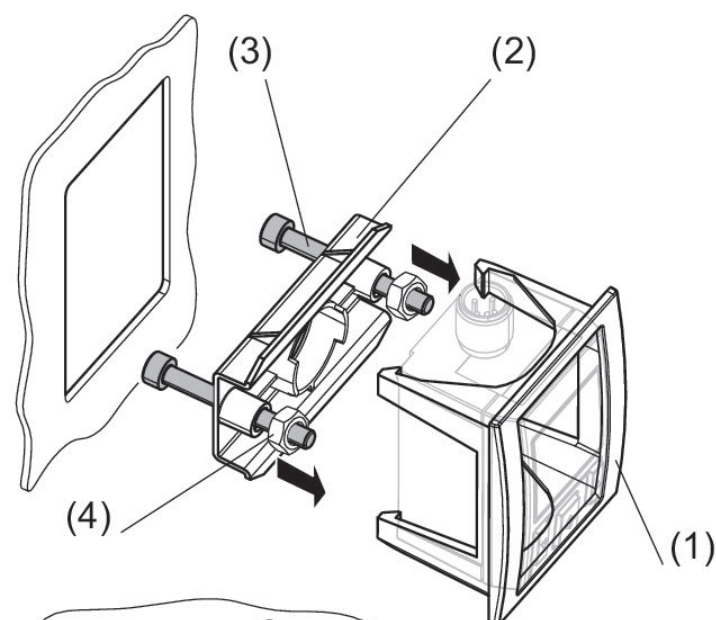
- 1) Wall mounting
- 2) DIN rail

Control panel installation kit

For series: PE5



Delivery unit [piece]	Part No.
1	R412010406







1 front frame (1), 1 wall mounting (2), 2 attachment screws M4x40 (3), 2 hexagonal nuts (4)
Panel plate thickness max. 5.0 mm

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