# Pressure sensor, Series PE5

- Operating pressure -14.5 ... 0 -14.5 ... 14 0 ... 87 0 ... 145 0 ... 174 psi
- electronic
- Output signal analog 4 ... 20 mA
- Output signal digital 2 outputs 1 output
- IO-Link
- Electr. connection Plug M12x1 4-pin
- Compressed air connection Internal thread G 1/4 push-in fitting Ø 4


| | |
|---|---|
| Type | electronic |
| Certificates | CE declaration of conformity cULus RoHS Conforms with REACH Free of substances that impair surface wetting in the coating process |
| Ambient temperature min./max. | 32 ... 140 °F |
| Medium temperature min./max. | 32 ... 140 °F |
| Medium | Compressed air (max. 40 µm) |
| Max. oil content of compressed air | 40 mg/m³ |
| Measurement | Relative pressure |
| Display | LCD display, 4 digits Color setting: green or red |
| Units displayed | bar psi kPa MPa inHg |
| Switching logic | NO/NC (adjustable) |
| Shock resistance max. | 30 g |
| Vibration resistance | 5 g (10 - 150 Hz) |
| Precision (% of full scale value) | ±1.5% in temperature range of 10 - 30°C ± 2 % including temperature drift |
| Repeatability (% of full scale value) | ± 0,2 % |
| Switching time | 5 ms |
| Switching point | adjustable 0 ... 100% |
| Resetting point | adjustable 0 ... 100% |
| Hysteresis | adjustable |
| Delayed hysteresis | adjustable |
| Window function | adjustable |
| DC operating voltage min./max. | 17 ... 30 V DC |
| Analog output | 0 - 10 V DC, 4 - 20 mA |
| Quiescent current consumption | 40 mA |
| Analog output linearity | ± 0.5% of the final value |
| Maximum load (analog current output) | 600 Ω |
| 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 |
| Protection class | IP65 IP67 with connections assembled |
| Electr. connection | Plug M12x1 4-pin |
| Weight | 0.088 lbs |

# Technical data

| Part No. | | Operating pressure range | Protection against overpressure |
|---|---|---|---|
| | | min./max. | |
| R412010761 |  | -14.5 ... 0 psi | 72.5 psi |
| R412010760 |  | -14.5 ... 0 psi | 72.5 psi |
| R412010769 |  | -14.5 ... 0 psi | 72.5 psi |
| R412010768 |  | -14.5 ... 0 psi | 72.5 psi |
| R412010775 |  | -14.5 ... 0 psi | 72.5 psi |
| R412010774 |  | -14.5 ... 0 psi | 72.5 psi |
| R412010763 |  | -14.5 ... 14 psi | 72.5 psi |
| R412010762 |  | -14.5 ... 14 psi | 72.5 psi |
| R412010771 |  | 0 ... 87 psi | 217.5 psi |
| R412010770 |  | 0 ... 87 psi | 217.5 psi |
| R412010765 |  | 0 ... 87 psi | 217.5 psi |
| R412010764 |  | 0 ... 87 psi | 217.5 psi |
| R412010777 |  | 0 ... 87 psi | 217.5 psi |
| R412010776 |  | 0 ... 87 psi | 217.5 psi |
| R412010773 |  | 0 ... 145 psi | 217.5 psi |
| R412010772 |  | 0 ... 145 psi | 217.5 psi |
| R412010767 |  | 0 ... 145 psi | 217.5 psi |
| R412010766 |  | 0 ... 145 psi | 217.5 psi |
| R412010779 |  | 0 ... 145 psi | 217.5 psi |
| R412010778 |  | 0 ... 145 psi | 217.5 psi |
| R412010782 |  | 0 ... 174 psi | 232 psi |
| R412010781 |  | 0 ... 174 psi | 232 psi |
| R412010806 |  | 0 ... 174 psi | 232 psi |
| R412010805 |  | 0 ... 174 psi | 232 psi |

| Part No. | Output signal | Output signal |
|---|---|---|
| | Analog | digital |
| R412010761 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010760 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010769 | 1 output-0 - 10 V DC-4 ... 20 mA | 1 output-PNP, NPN, Push-pull |
| R412010768 | 1 output-0 - 10 V DC-4 ... 20 mA | 1 output-PNP, NPN, Push-pull |
| R412010775 | - | 1 output-PNP, NPN, push-pull, 1x IO-Link |
| R412010774 | - | 1 output-PNP, NPN, push-pull, 1x IO-Link |
| R412010763 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010762 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010771 | 1 output-0 - 10 V DC-4 ... 20 mA | 1 output-PNP, NPN, Push-pull |
| R412010770 | 1 output-0 - 10 V DC-4 ... 20 mA | 1 output-PNP, NPN, Push-pull |
| R412010765 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010764 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010777 | - | 1 output-PNP, NPN, push-pull, 1x IO-Link |
| R412010776 | - | 1 output-PNP, NPN, push-pull, 1x IO-Link |
| R412010773 | 1 output-0 - 10 V DC-4 ... 20 mA | 1 output-PNP, NPN, Push-pull |
| R412010772 | 1 output-0 - 10 V DC-4 ... 20 mA | 1 output-PNP, NPN, Push-pull |
| R412010767 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010766 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010779 | - | 1 output-PNP, NPN, push-pull, 1x IO-Link |

| Part No. | Output signal | Output signal |
|---|---|---|
| | Analog | digital |
| R412010778 | - | 1 output-PNP, NPN, push-pull, 1x IO-Link |
| R412010782 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010781 | - | 2 outputs-PNP, NPN, Push-pull |
| R412010806 | - | 1 output-PNP, NPN, push-pull, 1x IO-Link |
| R412010805 | - | 1 output-PNP, NPN, push-pull, 1x IO-Link |

| Part No. | Compressed air connection | Fig. |
|---|---|---|
| R412010761 | Internal thread, G 1/4 | Fig. 1 |
| R412010760 | push-in fitting, Ø 4 | Fig. 2 |
| R412010769 | Internal thread, G 1/4 | Fig. 1 |
| R412010768 | push-in fitting, Ø 4 | Fig. 2 |
| R412010775 | Internal thread, G 1/4 | Fig. 1 |
| R412010774 | push-in fitting, Ø 4 | Fig. 2 |
| R412010763 | Internal thread, G 1/4 | Fig. 1 |
| R412010762 | push-in fitting, Ø 4 | Fig. 2 |
| R412010771 | Internal thread, G 1/4 | Fig. 1 |
| R412010770 | push-in fitting, Ø 4 | Fig. 2 |
| R412010765 | Internal thread, G 1/4 | Fig. 1 |
| R412010764 | push-in fitting, Ø 4 | Fig. 2 |
| R412010777 | Internal thread, G 1/4 | Fig. 1 |
| R412010776 | push-in fitting, Ø 4 | Fig. 2 |
| R412010773 | Internal thread, G 1/4 | Fig. 1 |
| R412010772 | push-in fitting, Ø 4 | Fig. 2 |
| R412010767 | Internal thread, G 1/4 | Fig. 1 |
| R412010766 | push-in fitting, Ø 4 | Fig. 2 |
| R412010779 | Internal thread, G 1/4 | Fig. 1 |
| R412010778 | push-in fitting, Ø 4 | Fig. 2 |
| R412010782 | Internal thread, G 1/4 | Fig. 1 |
| R412010781 | push-in fitting, Ø 4 | Fig. 2 |
| R412010806 | Internal thread, G 1/4 | Fig. 1 |
| R412010805 | push-in fitting, Ø 4 | Fig. 2 |

## Technical information

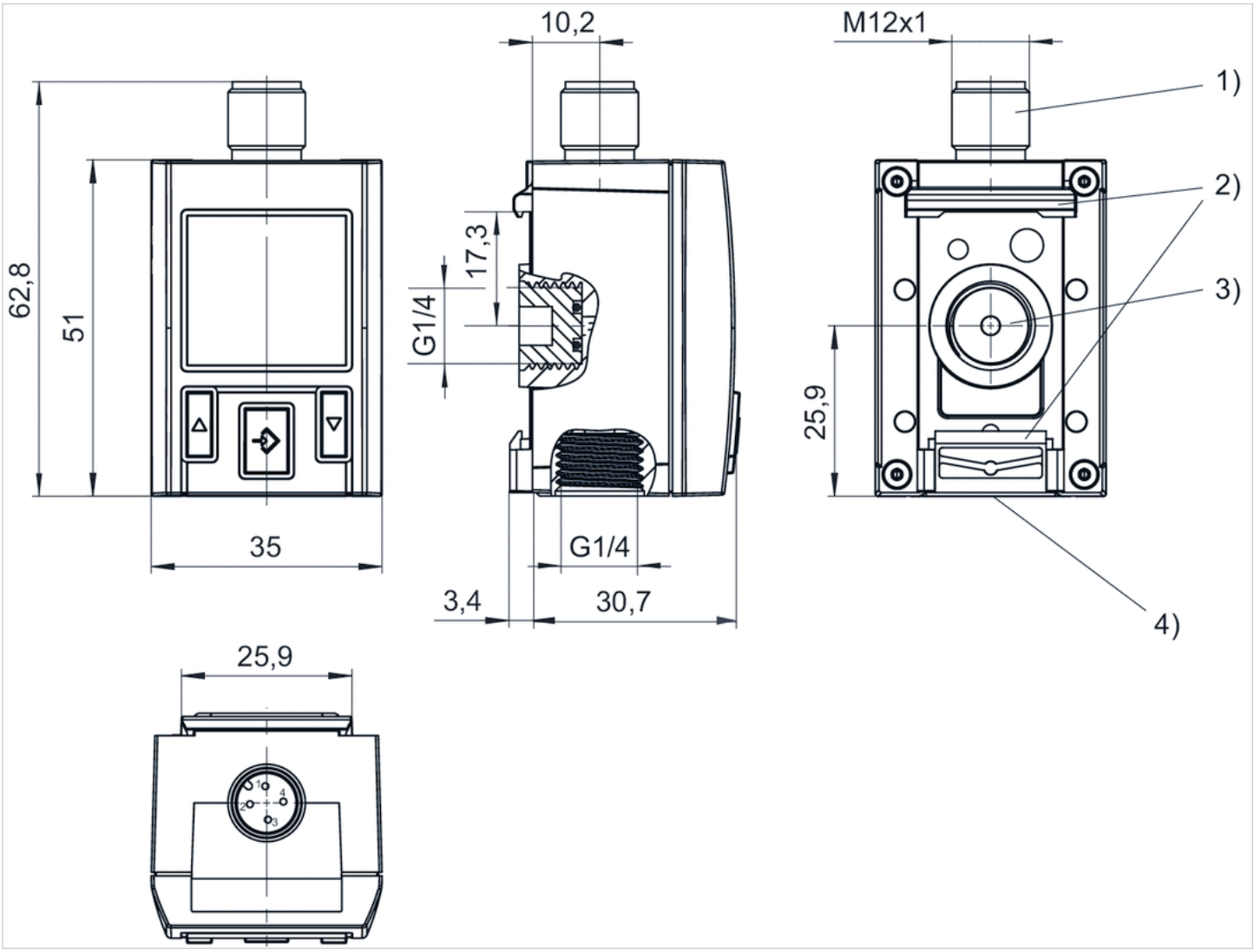
Alternative pressure connection (G1/4) on the rear side (closed with plug)
Display color selectable, red or green
The IO-Link device description (IODD) for the PE5 pressure sensor is available for download in the Media Centre.

## Technical information

| Material | |
|---|---|
| Housing | Polycarbonate |
| Seals | Acrylonitrile butadiene rubber |
| Blanking plug | Polyoxymethylene |
| Electr. connection | Aluminum, black anodized |

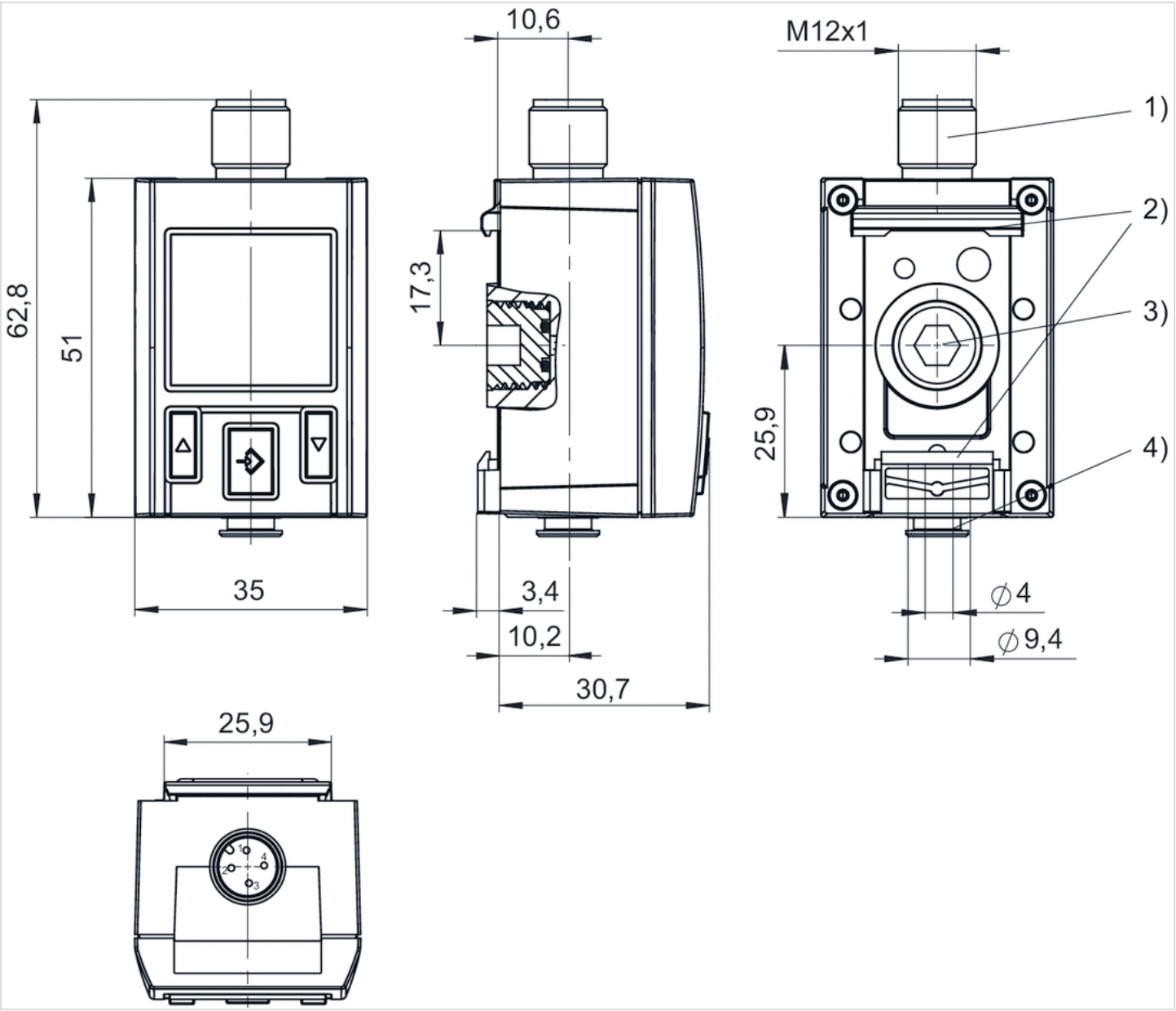
## Dimensions

Fig. 1



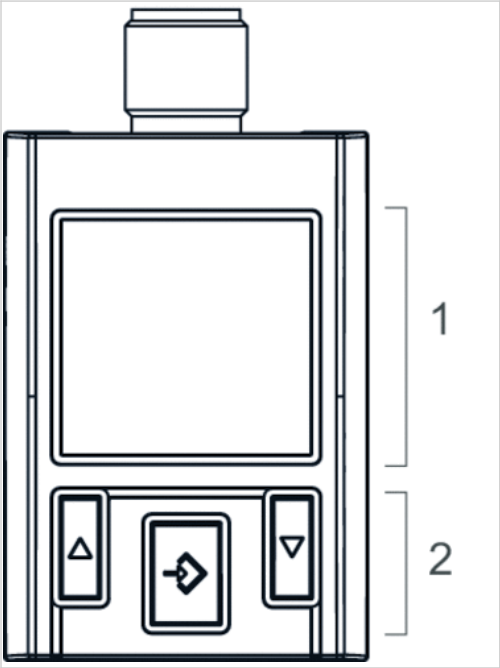

1) M12x1 electrical connection
2) Mounting for hat rail and wall mounting
3) Alternative pressure connection (G1/4) closed with plug
4) Pressure connection G1/4

Fig. 2




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 Ø 4 mm

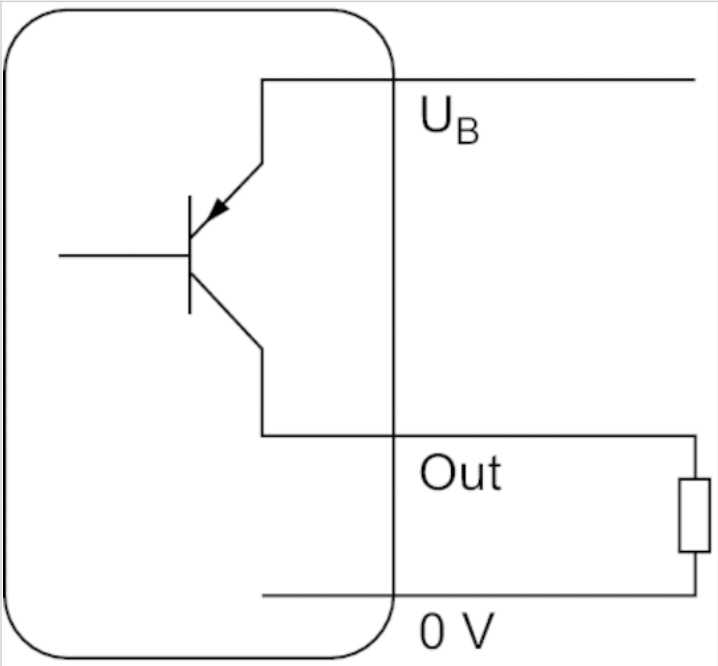
## Display and operation area



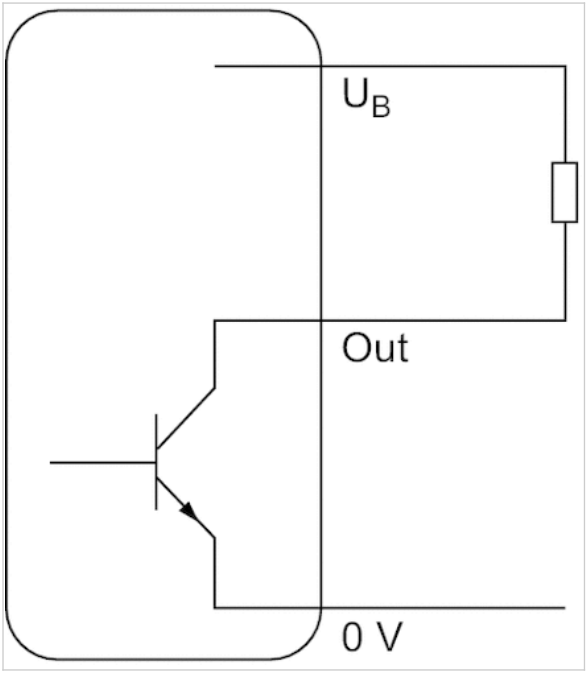

1) LCD display
2) Control panel with 3 buttons

# Diagrams

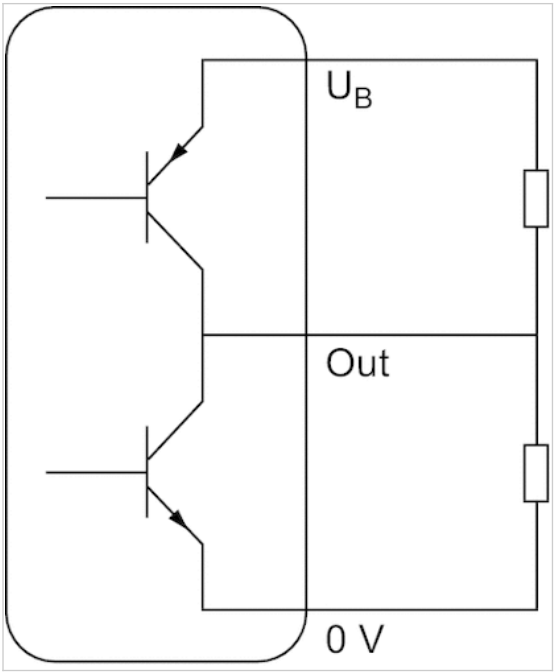
## Operating mode PNP



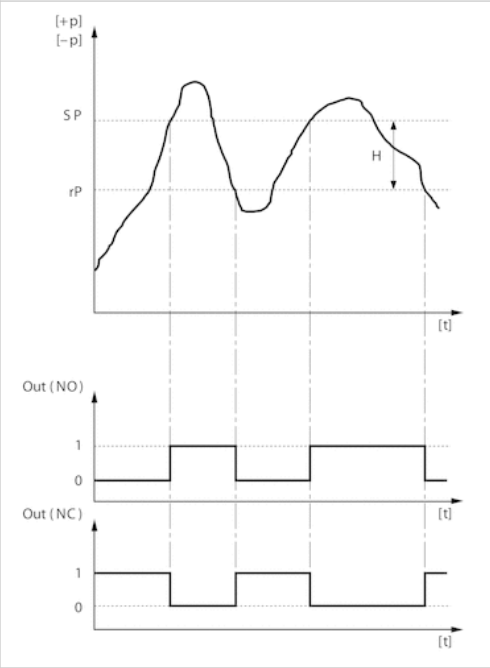
## Operating mode NPN




## Operating mode Push-pull

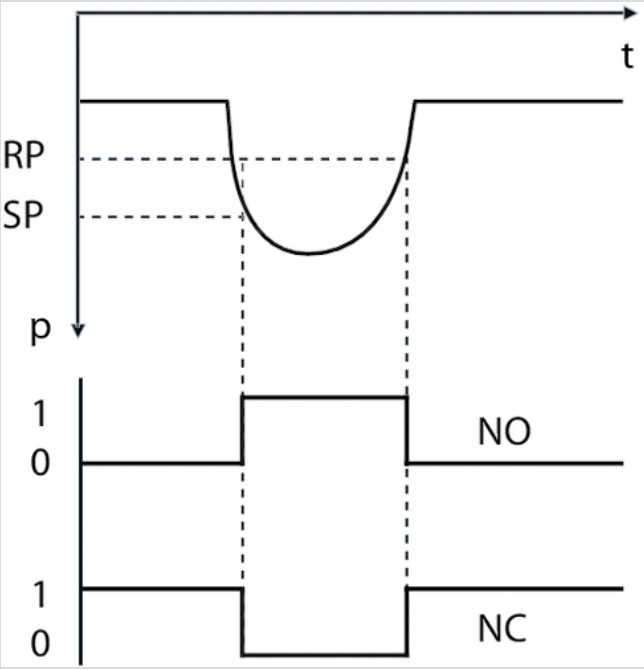


## Hysteresis function: switching and resetting behavior dependent on pressure p and time t In case

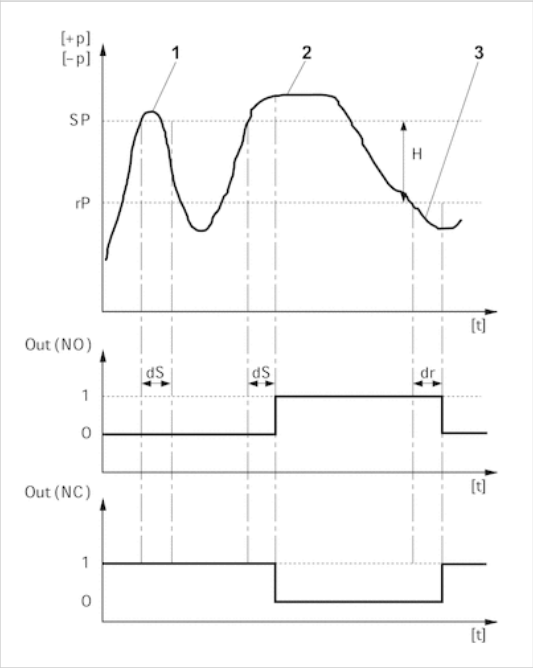



H: Hysteresis
SP = switching point
RP = resetting point
Out (NC): switch output, break contact
Out (NO): switch output, make contact

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

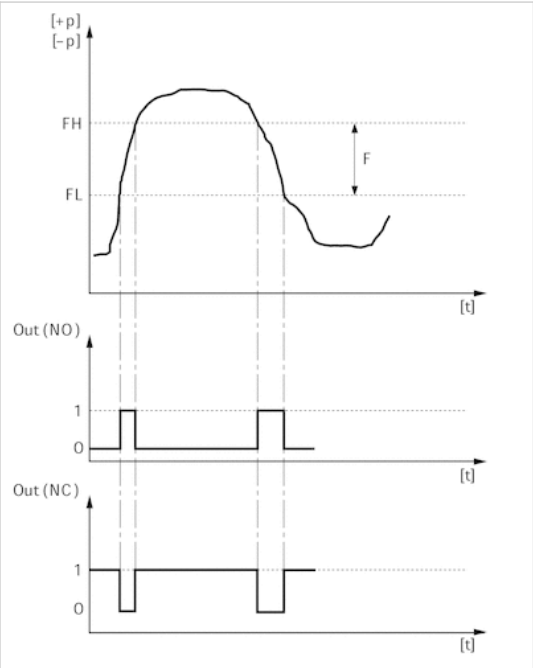


## Delayed hysteresis function: switching and resetting behavior depending on pressure p and time




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

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

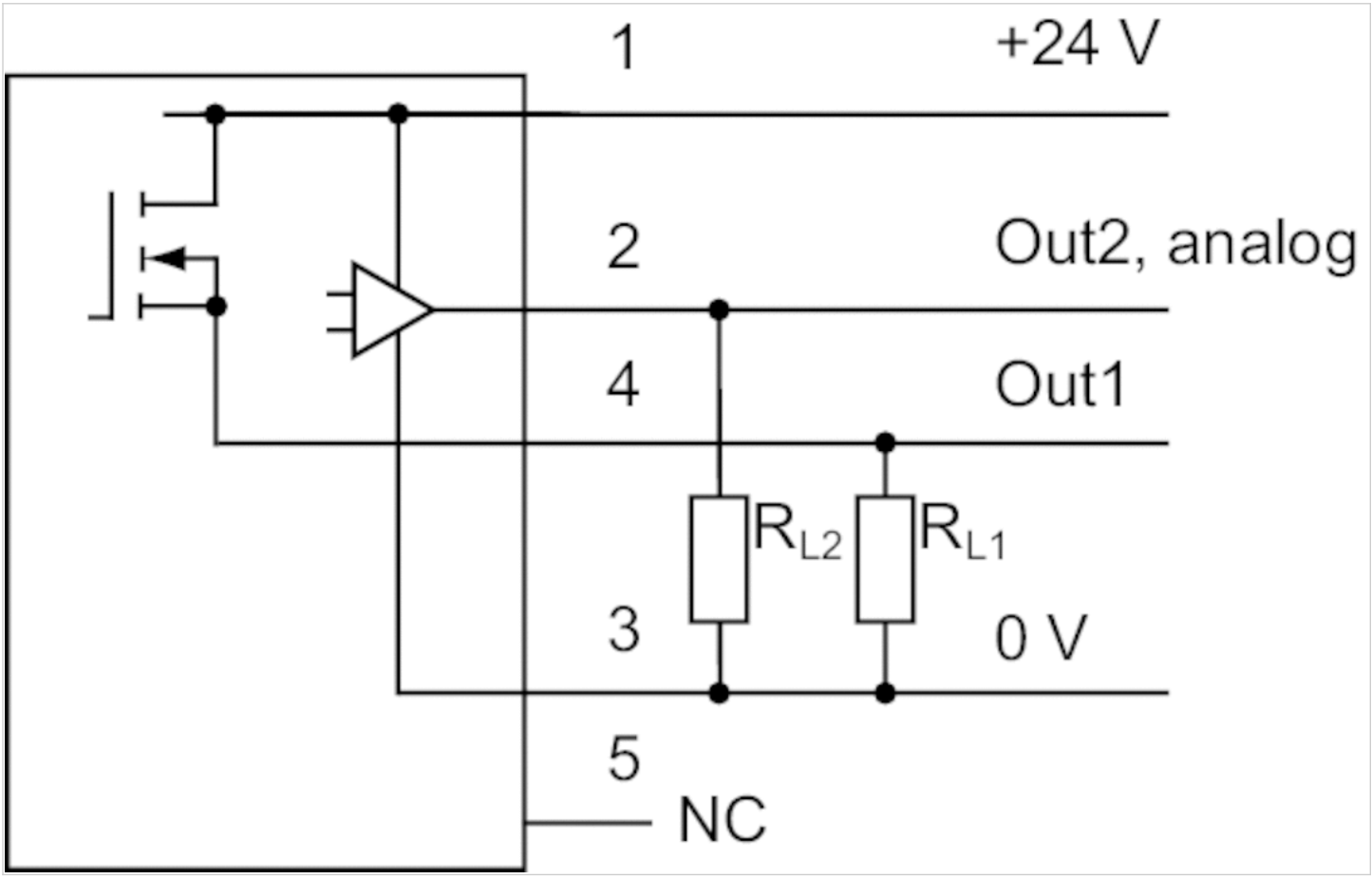



FH: pressure band, upper value
FL: pressure band, lower value
Out (NC): switch output, break contact

Out (NO): switch output, make contact

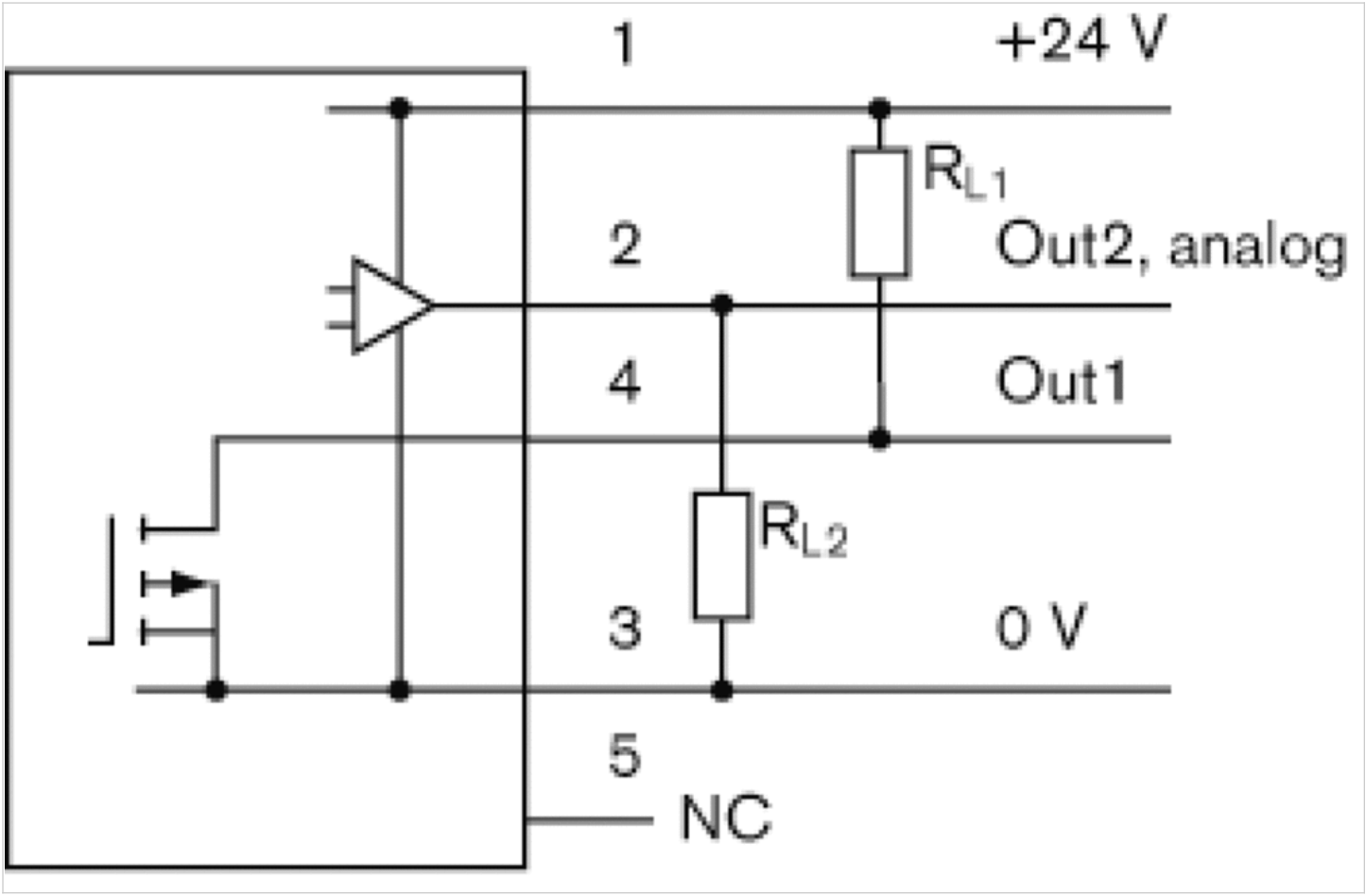
## Circuit diagram

### Block diagram 1x PNP and 1x analog




RL = storable postion

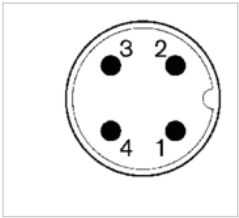
## Block diagram 1x NPN and 1x analog




RL = storable postion

# Pin assignments

## Pin assignments M12x1




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