

PRESSURE SWITCHES

VACUUM

Pressure switches - vacuum (electrical output)

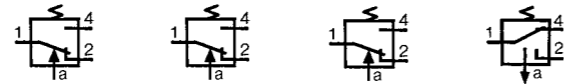


- › Conform to the Low Voltage Directive
- › Can be used without enclosure according to IEC 664-1 pollution group III

Part numbers

| Pressure and vacuum switches | 81 513 552 | 81 513 502 | 81 513 501 | 81 513 522 |
|------------------------------|---------------|------------------|----------------------|----------------|
| Mounting | DIN rail | DIN rail | DIN rail | DIN rail |
| Actuators | Pressure with | Pressure without | Low pressure without | Vacuum without |

Symbol



Characteristics

| Pneumatic connection | Push-in connection for semi-rigid tubing (NFE 49100) Tapped BSP via connector | mm | Ø 4 ext. | Ø 4 ext. | Ø 4 ext. | Ø 4 ext. |
|--|--|-----|------------------|------------------|------------------|------------------|
| Protection | IEC 529 | | IP 20 | IP 20 | IP 20 | IP 20 |
| Permissible fluid: | air, inert gases and liquids | | | | | |
| Adjustment of switching pressure (* adjusted to 0.3) | bar | | 2 → 8 | 2 → 8 | 0.3 → 1.2 * | -0.3 → -0.8 |
| Hysteresis | at 1 bar | bar | 0.5 | 0.5 | — | — |
| | at 2 bars | bar | 0.6 | 0.6 | — | — |
| | at 4 bars | bar | 0.8 | 0.8 | — | — |
| | at 6 bars | bar | 1 | 1 | — | — |
| | max. 200 mb | | — | — | • | — |
| max. 250 mb | | — | — | — | • | |
| Pressure to break | | | — | — | — | — |
| Mechanical life (operations) | | | 10 ⁶ | 10 ⁶ | 10 ⁶ | 10 ⁶ |
| Contact rating (V resistive) | | | 5A - 220-230 V | 5A - 220-230 V | 5A - 220-230 V | 5A - 220-230 V |
| Wire cross-section | mm ² | | 0.75 | 0.75 | 0.75 | 0.75 |
| Operating temperature | °C | | -10 → +70 | -10 → +70 | -10 → +70 | -10 → +70 |
| Weight | g | | 48 | 46 | 46 | 46 |
| Standard electrical contact | | | V4 83 170 4 W2 | V4 83 170 4 W2 | V4 83 170 4 W2 | V4 83 170 4 W2 |
| UL and cUL approval | | | MH15213 (R) | MH15213 (R) | MH15213 (R) | MH15213 (R) |

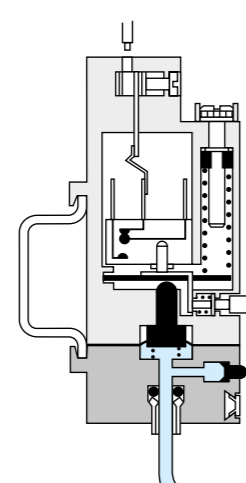
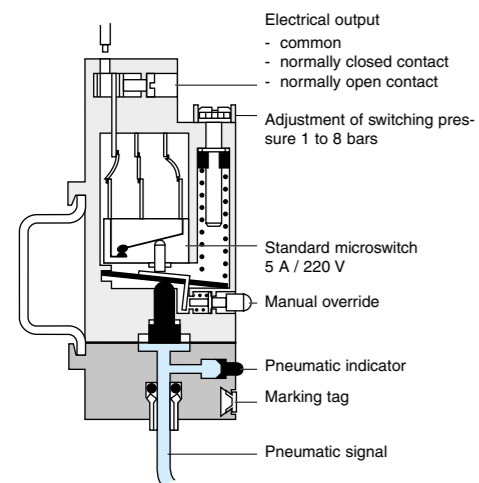
Operation

Pressure operated

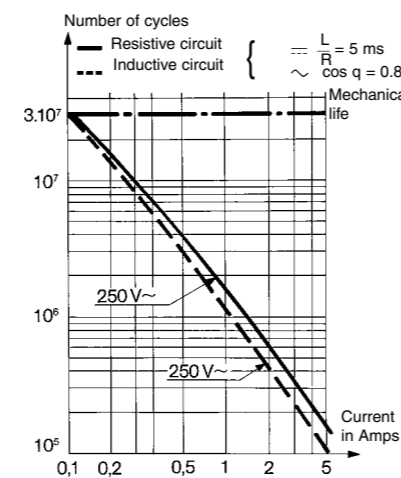
Vacuum operated

Electrical life

(Crouzet microswitch "V4" ref 83 170 4-1-W2)



For continuous vacuum applications, please consult us.

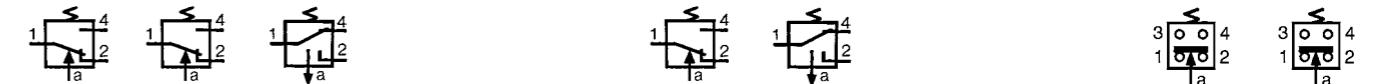


Other information

- On request :
- Microswitch V4 ref. 83 170 0 i W2 high current
 - Microswitch V4 ref. 83 170 9 i W2 low current



| 81 513 516 | 81 513 510 | 81 513 527 | 81 513 533 | 81 513 523 | 81 509 080 | 81 509 085 |
|------------------------|------------------------|------------------------|------------------|----------------|------------------------|------------------------|
| Base mounted page 4/14 | Base mounted page 4/14 | Base mounted page 4/14 | 2 screws M4 | 2 screws M4 | Base mounted page 4/14 | Base mounted page 4/14 |
| Pressure without | Pressure with | Vacuum without | Pressure without | Vacuum without | Pressure without | Pressure with |



| Ø 4 ext. | Ø 4 ext. | Ø 4 ext. | — | — | — | — |
|------------------|------------------|------------------|------------------|------------------|--------------------|--------------------|
| IP 54 | IP 54 | IP 54 | 1/8 BSP IP 54 | 1/8 BSP IP 54 | Via sub-base IP 54 | Via sub-base IP 54 |
| 2 → 8 | 2 → 8 | -0.3 → -0.9 | 2 → 8 | -0.3 → -0.8 | 1.4 ± 0.5 | 1.4 ± 0.5 |
| 0.5 | 0.5 | — | 0.5 | — | — | — |
| 0.6 | 0.6 | — | 0.6 | — | — | — |
| 0.8 | 0.8 | — | 0.8 | — | — | — |
| 1 | 1 | — | 1 | — | — | — |
| — | — | • | — | • | — | — |
| — | — | — | — | — | 0.6 ± 0.2 | 0.6 ± 0.2 |
| 10 ⁶ | 10 ⁶ | 10 ⁶ | 10 ⁶ | 10 ⁶ | 10 ⁶ | 10 ⁶ |
| 5A - 220-230 V | 5A - 220-230 V | 5A - 220-230 V | 5A - 220-230 V | 5A - 220-230 V | 5A - 220-230 V | 5A - 220-230 V |
| 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 1.5 | 1.5 |
| -10 → +70 | -10 → +70 | -10 → +70 | -10 → +70 | -10 → +70 | -10 → +70 | -10 → +70 |
| 56 | 58 | 56 | 65 | 65 | 80 | 80 |
| V4 83 170 4 W2 | V4 83 170 4 W2 | V4 83 170 4 W2 | V4 83 170 4 W2 | V4 83 170 4 W2 | 83 133 004 | 83 133 004 |
| MH15213 (R) | MH15213 (R) | MH15213 (R) | MH15213 (R) | MH15213 (R) | | |

Electrical connections

81 513 501 - 81 513 502
81 513 522 - 81 513 552

Dimensions

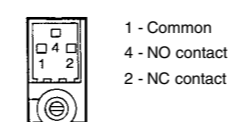
81 513 552 - 81 513 502
81 513 501 - 81 513 522

Pressure switch with connector

81 513 516 - 81 513 510
81 513 527

81 516 082

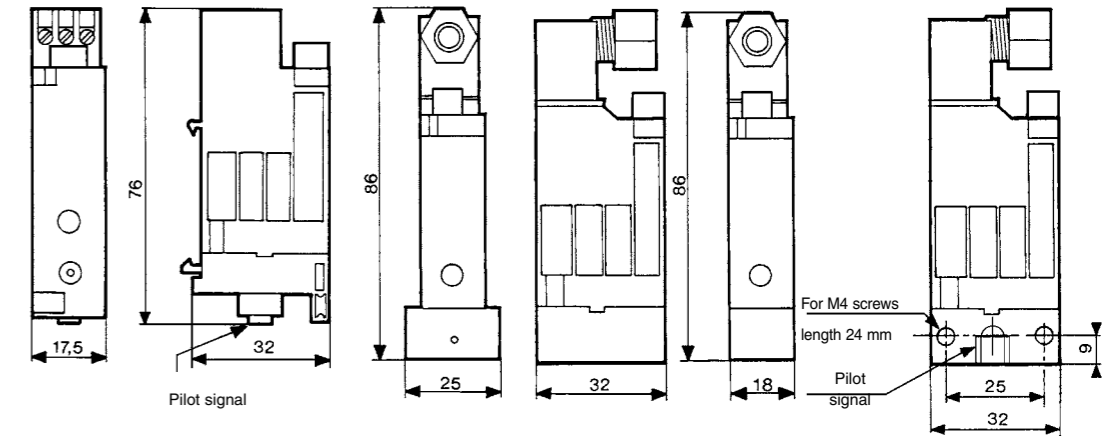
81 513 533
81 513 523



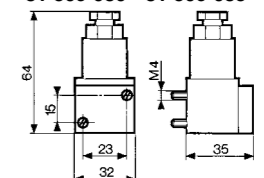
81 513 510
81 513 516 - 81 513 527



81 513 533
81 513 523 - 81 513 533



81 509 080 - 81 509 085

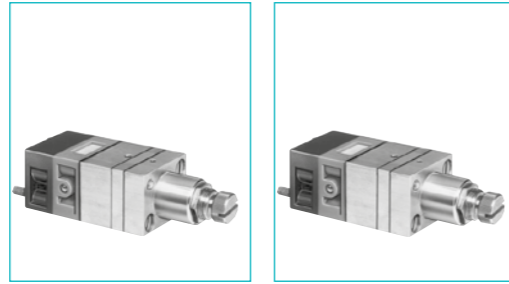


Adjustable pressure switches (manostats) (pneumatic output)

100 % pneumatic



Also available in ATEX version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



Part numbers (and adjustment ranges)

| Adjustment range | 50 → 500 mb 0.1 → 2.5 b 2 → 8 b | 81 505 140 81 505 150 81 505 160 | 81 502 140 81 502 150 81 502 160 |
|------------------|---------------------------------------|--|--|
| Version | | Positive output | Negative output |
| Accuracy | 50 → 500 mb 0.1 → 2.5 b 2 → 8 b | 10 % 4 % 4 % | 10 % 4 % 4 % |

Symbol

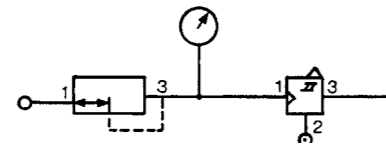


Characteristics

| Orifice diameter | mm | 2.5 | 2.5 |
|-----------------------------------|---------------------------------------|---------------------------|---------------------------|
| Flow at 4 bars | NI/min | 170 | 170 |
| Hysteresis | 50 → 500 mb 0.1 → 2.5 b 2 → 8 b | 60 mb 100 mb 320 mb | 60 mb 100 mb 320 mb |
| Connection - sub-base pages 54/55 | | | |
| Operating temperature | °C | -5 → +50 | -5 → +50 |
| Mechanical life | operations | 3 x 10 ⁶ | 3 x 10 ⁶ |
| Weight | g | 160 | 160 |

Connections

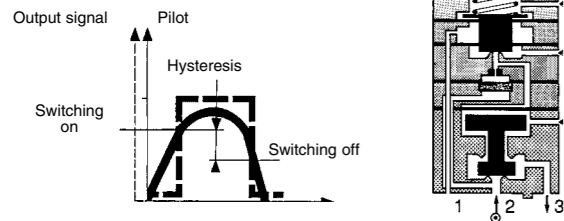
Example of pressure threshold adjustment (mini-regulator - manostat)



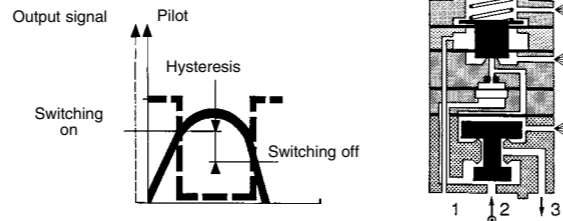
Principle of operation

The manostats provide an on or off output signal when the input signal reaches a predetermined pressure threshold.

Positive output

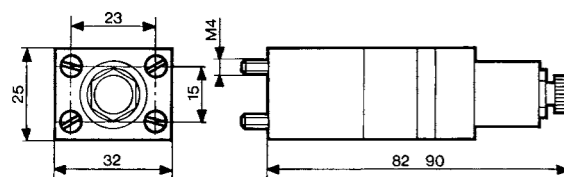


Negative output



Dimensions

81 502 140 - 81 502 150 - 81 502 160
81 505 140 - 81 505 150 - 81 505 160



Other information Pressure switches with electrical output on request.

ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website www.crouzet.com

Adjustable vacuum switches (vacuostat)

100 % pneumatic

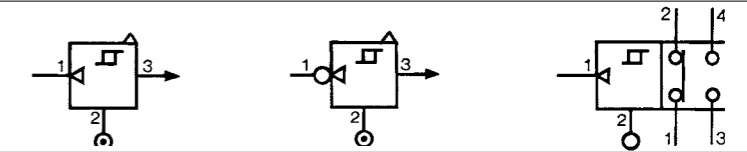
For vacuum -0,1 → -0,9 Bar



Part numbers

| | 81 505 110 | 81 502 110 | 81 508 110 |
|--|-----------------|-----------------|-------------------|
| | Positive output | Negative output | Electrical output |

Symbol



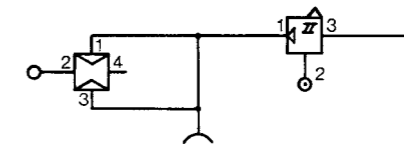
Characteristics

| Adjustment range | b | -0.1 → -0.9 | -0.1 → -0.9 | -0.1 → -0.9 |
|-----------------------------------|------------|---------------------|---------------------|---------------------|
| Flow at 6 bars | NI/min | 170 | 170 | 170 |
| Hysteresis | mb | 80 | 80 | 80 |
| Connection - sub-base pages 54/55 | | | | |
| Operating temperature | °C | -5 → +50 | -5 → +50 | -5 → +50 |
| Mechanical life | operations | 3 x 10 ⁶ | 3 x 10 ⁶ | 3 x 10 ⁶ |
| Weight | g | 160 | 160 | 180 |

Connections

Example of use:

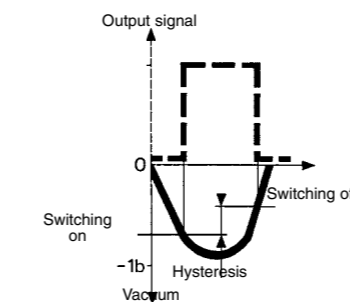
Vacuum handling (vacuum generator, vacuum pad, vacuostats).



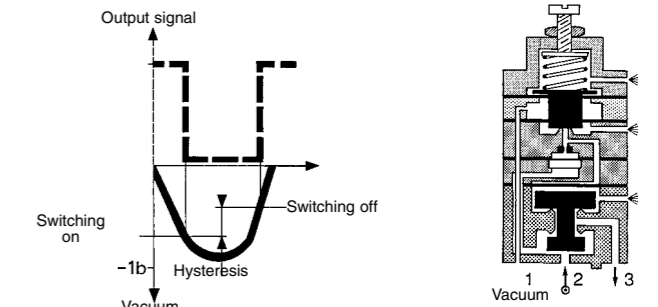
Principle of operation

Vacuostats provide an on or off output signal when the input signal reaches a predetermined pressure threshold.

Positive output

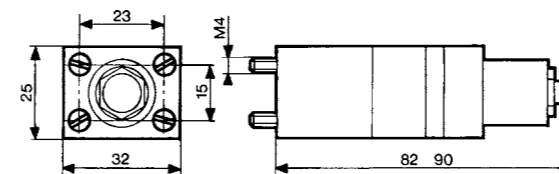


Negative output



Dimensions

81 502 110 - 81 505 110



81 508 110

