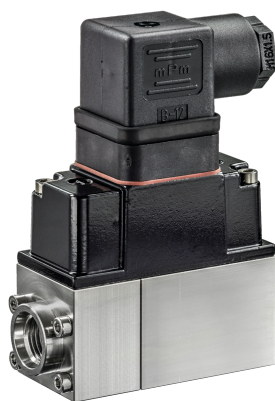


**Liquid differential pressure sensor**

Active sensor (4...20 mA) for differential pressure measurement in HVAC systems. The sensor is suitable for liquids, refrigerants or non-aggressive gases. The housing is made of stainless steel and is IP65 / NEMA 4 rated. Optional stainless steel or brass pipe connection adapters also available.


**Type Overview**

| Type      | Measuring range [bar] | Output signal active pressure | Overpressure | Negative overpressure | Burst pressure |
|-----------|-----------------------|-------------------------------|--------------|-----------------------|----------------|
| 22WDP-131 | 0...1                 | 4...20 mA                     | 6 bar        | -1 bar                | 21 bar         |
| 22WDP-132 | 0...2.5               | 4...20 mA                     | 6 bar        | -1 bar                | 21 bar         |
| 22WDP-134 | 0...4                 | 4...20 mA                     | 16 bar       | -1 bar                | 21 bar         |
| 22WDP-135 | 0...6                 | 4...20 mA                     | 16 bar       | -1 bar                | 21 bar         |

Measuring range: The sensor can measure differential pressure (dp) within this range.

The maximum operating pressure (relative pressure to atmosphere prel) can be higher. For further information, please refer to "Product features".

**Technical data**

|                               |                              |                                                   |
|-------------------------------|------------------------------|---------------------------------------------------|
| <b>Electrical data</b>        | Nominal voltage              | DC 24 V                                           |
|                               | Nominal voltage range        | DC 13.5...26.4 V                                  |
|                               | Power consumption DC         | 0.5 W                                             |
|                               | Electrical connection        | Connector plug for wire 0.5...1.5 mm <sup>2</sup> |
|                               | Cable entry                  | Angle plug according to DIN 43650, construction A |
| <b>Functional data</b>        | Medium                       | Water<br>Water-glycol mixture<br>Steam            |
|                               | Current output               | 1x 4...20 mA, max. resistance 900 Ω               |
|                               | Mechanical connection        | pressure connector: G 1/4"                        |
|                               | Mounting                     | Installation location unrestricted                |
|                               | Typical response time        | 37 ms                                             |
| <b>Measuring data</b>         | Measured values              | Differential pressure                             |
| <b>Specification Pressure</b> | Accuracy                     | ±1% of measuring range @ -5...75°C [23...167°F]   |
|                               | Long term stability          | ±2.5% / 10 yr.                                    |
| <b>Safety data</b>            | Protection class IEC/EN      | III, Protective Extra-Low Voltage (PELV)          |
|                               | Power source UL              | Class 2 Supply                                    |
|                               | Degree of protection IEC/EN  | IP65                                              |
|                               | Degree of protection NEMA/UL | NEMA 4                                            |
|                               | EU Conformity                | CE Marking                                        |
|                               | Certification IEC/EN         | IEC/EN 60730-1                                    |
|                               | Quality Standard             | ISO 9001                                          |
|                               | Ambient humidity             | Max. 95% RH, non-condensing                       |
|                               | Ambient temperature          | -10...50°C [14...122°F]                           |
|                               | Fluid temperature            | -10...80°C [15...175°F]                           |

## Technical data

|                    |                        |                                                                                                                                                   |
|--------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Safety data</b> | Fluid temperature note | At a fluid temperature of $<2^{\circ}\text{C}$ [ $<36^{\circ}\text{F}$ ], frost protection must be guaranteed steam inlet @ max. 100 kPa [15 psi] |
|                    |                        |                                                                                                                                                   |
| <b>Materials</b>   | Housing                | Bottom: Stainless steel 1.4305<br>Top Cover: Die cast aluminium                                                                                   |
|                    | Housing seal           | EPDM                                                                                                                                              |
|                    | Fluid wetted parts     | Stainless steel 1.4301, Ceramic                                                                                                                   |
| <b>Terms</b>       | Abbreviations          | dp: differential pressure between high and low pressure<br>prel: relative pressure to ambient pressure                                            |
|                    |                        |                                                                                                                                                   |

## Safety notes



This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application. Unauthorised modifications are prohibited. The product must not be used in relation with any equipment that in case of a failure may threaten humans, animals or assets.

Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.

The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

## Product Features

**Application** The device is designed with an internal membrane that directly measures the differential pressure of the fluid applied to each side of the sensing element. The operating pressure prel can be higher than the measuring range dp if it is guaranteed that the differential pressure stays within the measuring range.

Differential pressure  $\leq$  measuring range (dp)

Operating pressure  $<$  burst pressure (prel)

Measuring range (dp)

The sensor can measure the differential pressure (dp) within this range.

Overpressure (dp)

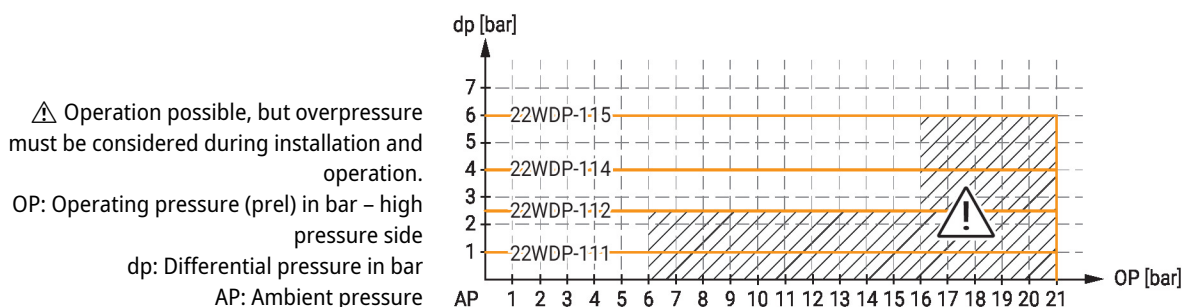
Maximum differential pressure (dp) that the device can withstand without permanent damage. No measurement is possible within the overpressure range.

Negative overpressure (dp)

Maximum negative differential pressure (dp) that the device can withstand without permanent damage.

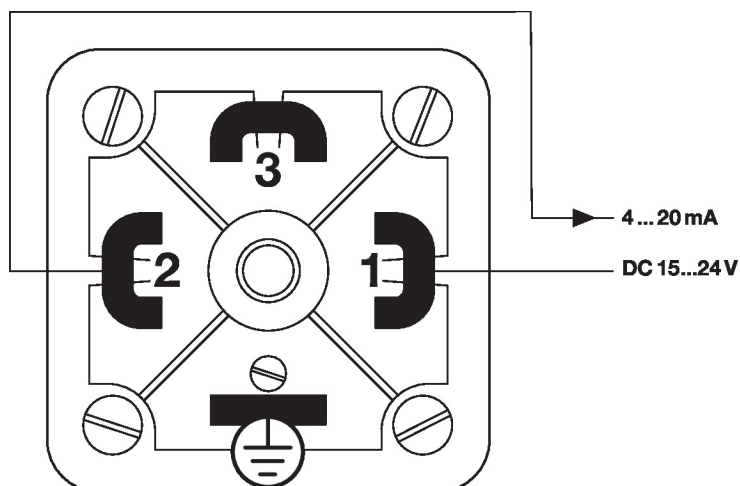
Burst pressure (prel)

Maximum relative pressure (prel) up to which the device housing is tight. If this pressure is exceeded, the sensor will leak or burst.

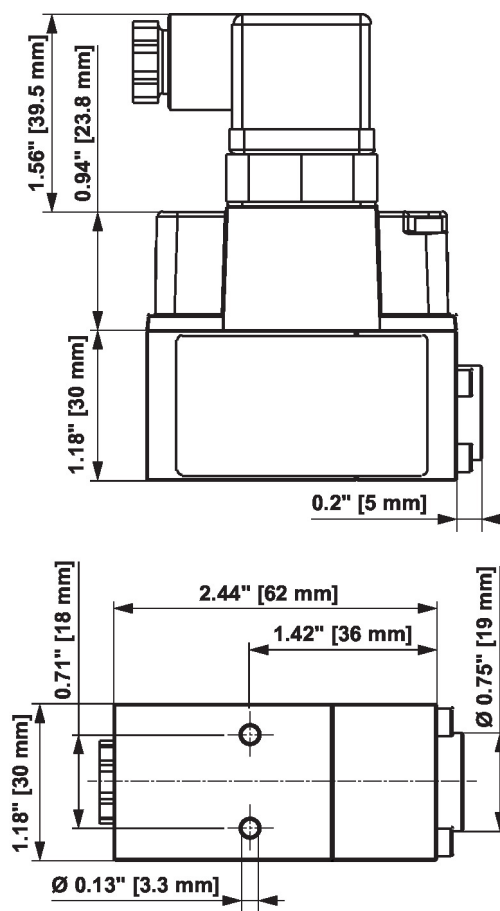


**Accessories**

| Optional accessories   | Description                                                                           | Type          |
|------------------------|---------------------------------------------------------------------------------------|---------------|
|                        | Pipe connector, Brass, Pipe 6 mm to G 1/4" (external thread), Set of 2 pcs.           | A-22WP-A04    |
|                        | Pipe connector, Stainless steel, Pipe 6 mm to G 1/4" (external thread), Set of 2 pcs. | A-22WP-A06    |
|                        | Pipe connector, Brass, Pipe 8 mm to G 1/4" (external thread), Set of 2 pcs.           | A-22WP-A08    |
|                        | Pipe connector, Stainless steel, Pipe 8 mm to G 1/4" (external thread), Set of 2 pcs. | A-22WP-A10    |
|                        | Mounting bracket for 22WDP-..., Metal                                                 | A-22WP-A11    |
|                        | Pipe connector, Brass, Pipe 6 mm to G 1/4" (external thread)                          | EXT-BC1414    |
| Electrical accessories | Description                                                                           | Type          |
|                        | Connecting cable 1.5 m for 22WP-... / 22WDP-...                                       | EXT-MR-249184 |
|                        | Connecting cable 5 m for 22WP-... / 22WDP-...                                         | EXT-MR-249185 |

**Wiring diagram**


## Dimensions



| Type      | Weight  |
|-----------|---------|
| 22WDP-131 | 0.54 kg |
| 22WDP-132 | 0.54 kg |
| 22WDP-134 | 0.54 kg |
| 22WDP-135 | 0.54 kg |

## Further documentation

- Installation instructions