

Differential pressure sensor Water

Active sensor (0...10 V) 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 adaptors also available.



5-year warranty

Type Overview

| Type | Measuring range [psi] | Output signal active pressure | Overpressure | Negative overpressure | Burst pressure |
|-----------|-----------------------|-------------------------------|--------------|-----------------------|----------------|
| 22WDP-511 | 0...15 | 0...10 V | 85 psi | -1 bar | 300 psi |
| 22WDP-512 | 0...30 | 0...10 V | 85 psi | -1 bar | 300 psi |
| 22WDP-514 | 0...50 | 0...10 V | 230 psi | -1 bar | 300 psi |
| 22WDP-515 | 0...100 | 0...10 V | 230 psi | -1 bar | 300 psi |

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

| | | |
|-------------------------------|------------------------------|---|
| Electrical Data | Nominal voltage | AC/DC 24 V |
| | Nominal voltage range | AC 21.6...26.4 V / DC 13.5...26.4 V |
| | Power consumption AC | 0.9 VA |
| | Power consumption DC | 0.37 W |
| | Electrical connection | Connector Plug for wire 0.5...1.5 mm ² |
| | Cable entry | Angle plug According to DIN 43650, construction A |
| Functional Data | Medium | Water Water-glycol mixture Steam |
| | Voltage output | 1 x 0...10 V, min. resistance 2 kΩ |
| | Mechanical connection | pressure connector: 1/4" NPT |
| | Mounting | Installation location unrestricted |
| | Typical response time | 100 ms |
| Measuring Data | Measured values | Differential pressure |
| Specification pressure | Accuracy | ±1% of measuring range @ 23...167°F [-5...75°C] |
| | Long term stability | ±2.5% / 10 yr. |
| Safety Data | Protection class IEC/EN | III, Protective Extra-Low Voltage (PELV) |
| | Power source UL | Class 2 Supply |
| | 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 | 14...122°F [-10...50°C] |

Technical data

| | | |
|--------------------|--------------------|---|
| Safety Data | Fluid temperature | 15...175°F [-10...80°C] Frost protection must be guaranteed at fluid temperatures <2 °C [<36°F] steam inlet @ max. 100 kPa [15 psi] |
| | <hr/> | |
| Materials | Housing | Bottom: Stainless steel 1.4305 Top Cover: Die cast aluminium |
| | Housing seal | EPDM |
| | Fluid wetted parts | Stainless steel 1.4301, Ceramic |

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. Unauthorized 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 authorized 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

Solution The device is designed with an internal membrane that directly measures the differential pressure of the medium 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 \leq measuring range (dp)

Measuring range (prel)

The sensor can measure relative pressures (prel) within this range.

Overpressure (prel) (dp)

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

Negative Overpressure (prel)

Maximum relative pressure (prel) below atmospheric pressure 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.

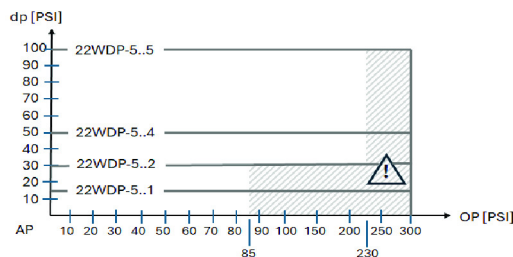
Avoid pressure peaks (e.g., with fast opened valves).

Overpressure must be considered during installation.

OP: Operating pressure (prel) in PSI - high pressure side

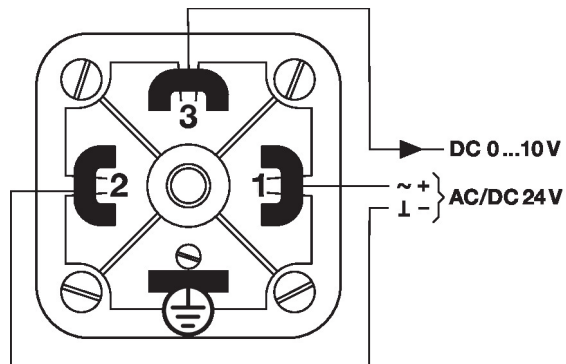
dp: Differential pressure in PSI

AP: Atmospheric pressure

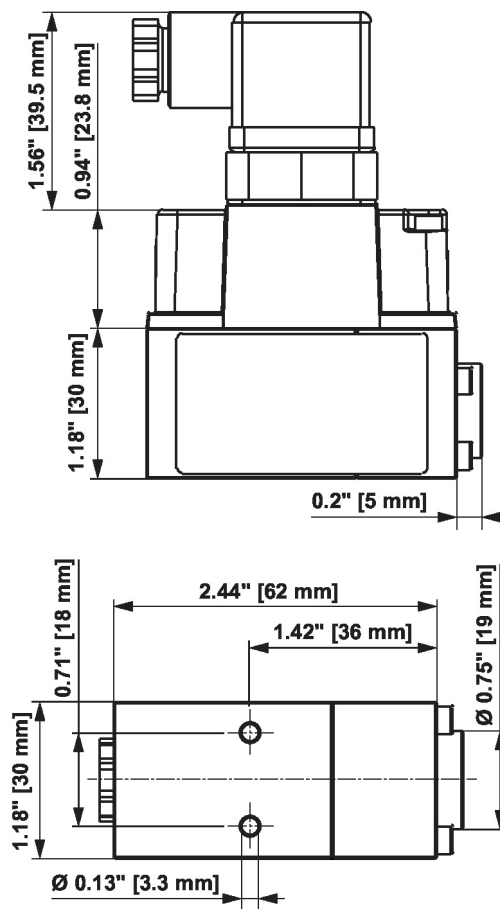


Accessories

| Optional accessories | Description | Type |
|------------------------|---|---------------|
| | Pipe connector, Brass, Pipe 0.24" [6 mm] to 1/4" NPT (external thread), Set of 2 pcs. | A-22WP-A03 |
| | Pipe connector, Stainless steel, Pipe 0.24" [6 mm] to 1/4" NPT (external thread), Set of 2 pcs. | A-22WP-A05 |
| | Pipe connector, Brass, Pipe 0.3" [8 mm] to 1/4" NPT (external thread), Set of 2 pcs. | A-22WP-A07 |
| | Pipe connector, Stainless steel, Pipe 0.3" [8 mm] to 1/4" NPT (external thread), Set of 2 pcs. | A-22WP-A09 |
| | Mounting bracket for 22WDP-..., Metal | A-22WP-A11 |
| | Cable conduit connector, | EXT-TTS-M1612 |
| Mechanical accessories | Description | Type |
| | 3-valve manifold with bracket, for installing and isolating pipe differential sensors | EXT-GS-3WM |

Wiring Diagram


Dimensions



| Type | Weight |
|-----------|------------------|
| 22WDP-511 | 1.2 lb [0.55 kg] |
| 22WDP-512 | 1.2 lb [0.55 kg] |
| 22WDP-514 | 1.2 lb [0.55 kg] |
| 22WDP-515 | 1.2 lb [0.55 kg] |

Further documentation

- Installation instructions