Liquid differential pressure sensor

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 relative pressure (prel) within this range.

The maximum operating pressure (relative pressure to atmosphere prel) must be within the measuring range. 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 mm²
	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]
	Fluid temperature	15...175°F [-10...80°C]

Technical data

Safety Data	Fluid temperature note	Frost protection must be guaranteed at fluid temperatures <2 °C [<36°F] steam inlet @ max. 100 kPa [15 psi]
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 <= measuring range (dp)

Operating pressure <= 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.

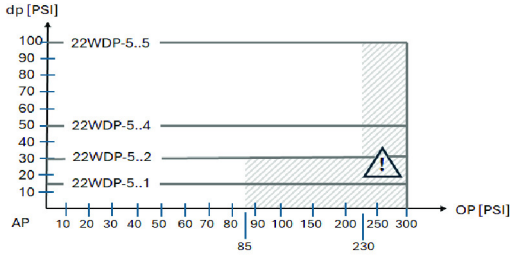
Negative Overpressure (prel)

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).



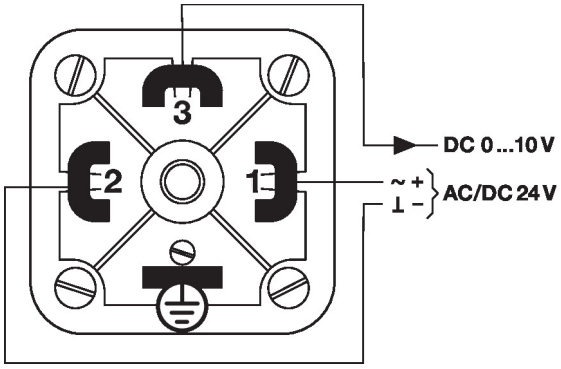
Overpressure must be considered during installation.
OP: Operating pressure (prel) in PSI - high pressure side
dp: Differential pressure in PSI
AP: Atmospheric pressure

Accessories

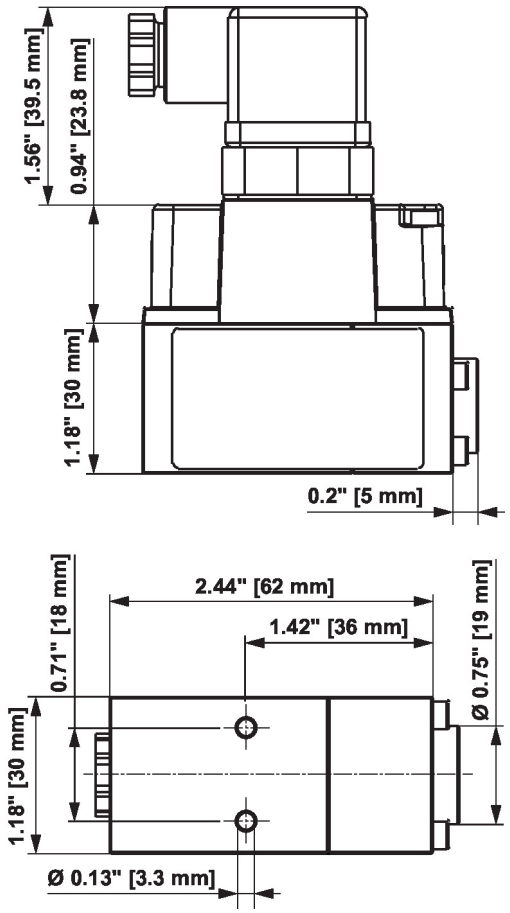
Optional accessories	Description	Type
	Pipe connector, Brass, Pipe 0.24" [6 mm] to 1/4" NPT (external thread), Set of 2 pcs.	A-22WP-A03
	Pipe connector, Stainless steel, Pipe 0.24" [6 mm] to 1/4" NPT (external thread), Set of 2 pcs.	A-22WP-A05
	Pipe connector, Brass, Pipe 0.3" [8 mm] to 1/4" NPT (external 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