

Pressure Sensor Type PSR

PRESSURE SENSOR TRANSMITTER FOR REFRIGERATION AND HVAC APPLICATIONS

PRODUCT-DATA



PSR - ** MS UB MP150

PSR - ** VA UB MP150

Special Characteristics

- Pressure Sensor Transmitter for usage in refrigeration and HVAC applications
- For installation in liquid line, injection line, hot gas line and suction line
- For usage of refrigerants R22, R134a, R404A, R407C, R410A, R502, R507; not for Ammonia
- Condensation-tight
- Type PSR - ** MS UB MP150:
 - Wetted parts of brass, CR70 (Chloroprene) and ceramic
 - Integrated ceramic thick-layer sensor
- Type PSR - ** VA UB MP150:
 - Wetted parts of stainless steel
 - Monolithic structure
 - Hermetically welded metallic, dry thin-film sensor element

Technical Data

Pressure Range	see table on page 2
Maximum Pressure PS	see table on page 2
Electrical Output Signal	0,5...4,5 V ratiometric
Power Supply	5 ± 0,5 VDC
Supply Current	≤ 10 mA
Maximum Load	> 4,5 kΩ
Response Time (10...90%)	≤ 5 ms
Insulation Voltage	500 VDC
Medium Temperature	-40 °C ... 80 °C
Ambient Temperature	-25 °C ... 80 °C
Storage Temperature	-25 °C ... 80 °C
Max. rel. Humidity	95 %
Electr. Protection degree	IP67

In plugged condition with connector of corresponding protection class

Application

Pressure Sensor Transmitter Type PSR is used in refrigeration circuits to measure the refrigerant's pressure.

The Pressure Sensor Transmitter PSR can be used according to its measuring range in the liquid line, in the injection line, in the hot gas line and in the suction line of refrigeration circuits.

Materials

Housing	Brass, Stainless Steel
Sealing	CR70 (Chloroprene)
Port Connection	7/16-20 UNF-2B

Other applications on request.

Technical Specification:

Typ <i>Type</i>	PSR – 9 MS UB MP150	PSR – 16 MS UB MP150	PSR – 45 MS UB MP150	PSR – 9 VA UB MP150	PSR – 16 VA UB MP150	PSR – 45 VA UB MP150
Messbereich <i>Pressure range</i>	-1...9 bar(ü) -1...9 bar(g)	0...16 bar(ü) 0...16 bar(g)	0...45 bar(ü) 0...45 bar(g)	-1...9 bar(ü) -1...9 bar(g)	16 bar(ü) 16 bar(g)	45 bar(ü) 45 bar(g)
Überlastgrenze <i>Over pressure range</i>	20 bar	40 bar	100 bar	20 bar	32 bar	100 bar
Berstdruck <i>Burst pressure</i>	25 bar	50 bar	120 bar	100 bar	160 bar	400 bar
Genauigkeit <i>Accuracy</i>	-40 °C ... -20 °C ≤ 1,5 %* -20 °C ... +20 °C ≤ 1 %* * bezogen auf Taulinie von R410A * related to dewpoint of R410A			-40 °C ... -20 °C ≤ 1,5 %* -20 °C ... +20 °C ≤ 1 %* * bezogen auf Taulinie von R410A * related to dewpoint of R410A		
Stabilität pro Jahr <i>1-year stability</i>	≤ 0,3 % der Spanne (bei Referenzbedingungen) ≤ 0,3 % of span (at reference conditions)					
Elektrische Schutzart <i>Protection degree</i>	IP 67 in plugged condition with connector of corresponding protection class					
Kurzschlussfestigkeit <i>Short-circuit protection</i>	S+ gegen 0V S+ towards 0V			S+ gegen UB S+ towards UB		
Verpolschutz <i>Reverse polarity protection</i>	UB gegen 0V UB towards 0V			UB+ gegen UB UB+ towards UB		
Überspannungsschutz <i>Overvoltage protection</i>	36 VDC					
Material <i>Material</i>	Messing, Keramik Al ₂ O ₃ 96 % O-Ring: CR70 (Chloropren) Brass, Ceramic Al ₂ O ₃ 96 % O-Ring: CR70 (chloroprene)			Edelstahl (316L) Stainless steel (316L)		
Gehäuse <i>Body</i>	Messing Brass			Edelstahl (316L) Stainless steel (316L)		
EMV-Richtlinie <i>EMC directive</i>	2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations) 2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)			2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations) 2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)		
Gewicht <i>Weight</i>	Ca. 0,08 kg Appr. 0,08 kg			Ca. 0,08 kg Appr. 0,08 kg		

Type Description

Pressure Sensor Transmitter

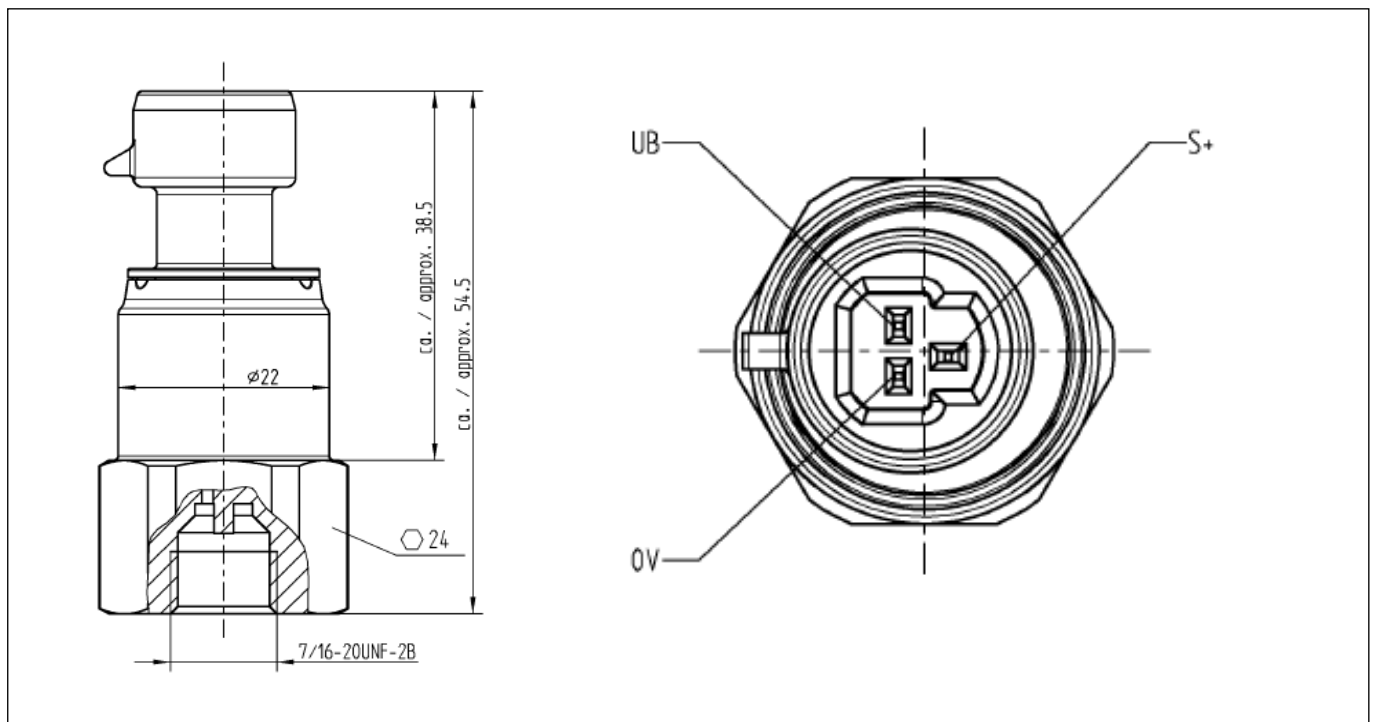
	PSR	- 9	MS	UB	MP150
Pressure Sensor Type					
Type: -9 = -1 ... 9 bar(g) 16 = 0 ... 16 bar(g) 45 = 0 ... 45 bar(g)					
Material: MS – Brass VA – Stainless Steel					
Port Connection 7/16-20 UNF-2B, Schrader Internal Thread					
MetriPack 150					

Port Connections

Type	Port Connection
PSR – 9 MS UB MP150	7/16" UNF
PSR – 16 MS UB MP150	7/16" UNF
PSR – 45 MS UB MP150	7/16" UNF
PSR – 9 VA UB MP150	7/16" UNF
PSR – 16 VA UB MP150	7/16" UNF
PSR – 45 VA UB MP150	7/16" UNF

Electrical Connections

3-pole Connector Metri Pack Series 150
UB = B
0V = A
S+ = C



Function

The pressure prevailing within the application is transformed into a standardised electrical signal through the deflection of the diaphragm, which acts on the sensor element with the power supply fed to the transmitter. This electric signal changes in proportion to the pressure and can be evaluated correspondingly.

Remarks:

- Select the appropriate pressure transmitter with regard to scale range, performance and specific measurement conditions prior to installing and starting the instrument.
- Observe the relevant national regulations (e.g.: EN 50178) and observe the applicable standards and directives for special applications (e.g. with dangerous media such as acetylene, flammable gases or liquids and toxic gases or liquids and with refrigeration plants or compressors). **If you do not observe the appropriate regulations, serious injuries and/or damage can occur!**
- **Open pressure connections only after the system is without pressure!**
- Please make sure that the pressure transmitter is only used within the overload threshold limit all the time!
- Observe the ambient and working conditions outlined in section „Technical data“.
- Ensure that the pressure transmitter is only operated in accordance with the provisions i.e. as described in the installation instructions.
- Do not interfere with or change the pressure transmitter in any other way than described in the operating instructions.
- Remove the pressure transmitter from service and mark it to prevent it from being used again accidentally, if it becomes damaged or unsafe for operation
- **Take precautions with regard to remaining media in removed pressure transmitter. Remaining media in the pressure port may be hazardous or toxic!**
- Have repairs performed by the manufacturer only.

Assembly

- Required tools: wrench (flats 24), screw driver
- Use the pressure transmitter only if it is in a faultless condition as far as the safety-relevant features are concerned.
- When mounting the instrument, ensure that the sealing faces of the instrument and the measuring point are clean and undamaged.
- Screw in or unscrew the instrument only via the flats using a suitable tool and the prescribed torque. The appropriate torque depends on the dimension of the pressure connection. Do not use the case as working surface for screwing in or unscrewing the instrument.
- When screwing the transmitter in, ensure that the threads are not jammed.
- Connect the instrument to earth via the pressure connection.
- Use power supplies which guarantee reliable electrical isolation of the operating voltage as per IEC/DIN EN 60204-1. Consider also the general requirements for PELV circuits in accordance with IEC/DIN EN 60204-1.
- Ingress protection per IEC 60529 (The ingress protection classes specified only apply while the pressure transmitter is connected with female connectors that provide the corresponding ingress protection).
- Please make sure that the ends of cables with flying leads do not allow any ingress of moisture.

Spare Parts

Cable

Description:

PSR-CAB300 MP150	Stecker mit Kabel für Drucksensor 3 m (IP67) <i>Plug with cable for pressure sensor 3 m (IP67)</i>
PSR-CAB600 MP150	Stecker mit Kabel für Drucksensor 6 m (IP67) <i>Plug with cable for pressure sensor 6 m (IP67)</i>

Colour of single wire:

A	Green	Earth Connection
B	Brown	Power Supply
C	White	Output Signal

Temperature Range: -40 °C ... 85 °C

Honeywell

Automation and Control Solutions

Honeywell GmbH
 Hardhofweg
 74821 Mosbach/Germany
 Phone: +49 (0) 62 61 / 81-475
 Fax: +49 (0) 62 61 / 81-461
 E-Mail: cooling.mosbach@honeywell.com
 www.honeywell-cooling.com

Manufactured for and on behalf of the
 Environmental and Combustion Controls
 Division of Honeywell Technologies Sàrl,
 1180 Rolle, Z.A. La Pièce 16, Switzerland
 by its Authorized Representative Honeywell GmbH