



Pressure Sensors

QBE9101-P...

for refrigerants

- Piezo-resistive measuring system
- DC 4...20 mA output signal
- Measurement unaffected by changes in temperature
- High temperature stability
- No mechanical aging or creepage
- Internal thread 7/16-20 UNF
- Excellent EMC characteristics
- Suitable for use all refrigerants (including ammonia)

Use

The QBE9101-P... pressure sensors are suitable for the measurement of static and dynamic positive pressures in HVAC plant, particularly in hydraulic and refrigeration systems using liquid or gaseous media.

Technical design

The QBE9101-P... pressure sensors operate on the piezo-resistive measuring principle. The ceramics diaphragm (thick-film hybrid technology) acquires the pressure through direct contact with the medium. The measurement is converted electronically into a linear output signal of DC 4...20 mA.

Type summary

Type reference	Pressure range			Signal
QBE9101-P10U	-1...+9 bar	-100... +900 kPa	-14,5... +130 psi	DC 4...20 mA
QBE9101-P30U	-1...+29 bar	-100...+2900 kPa	-14,5... +420 psi	DC 4...20 mA
QBE9101-P60U	-1...+59 bar	-100...+5900 kPa	-14,5... +856 psi	DC 4...20 mA

Ordering and delivery

When ordering, please give name and type reference, e.g.:

Pressure sensor **QBE9101-P10U**

Delivery:

Typ	Package containing	Min. ordering quantity
QBE9101-P10U	à 25 pieces	100 pieces
QBE9101-P30U	à 25 pieces	100 pieces
QBE9101-P60U	à 25 pieces	50 pieces

Equipment combinations

The QBE9101-P... pressure sensors can be combined with all devices or systems capable of processing the DC 4...20 mA output signal from the pressure sensor.

Mechanical design

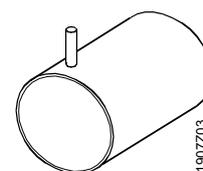
The QBE9101-P... pressure sensors are compact units and cannot be dismantled. No changes or adjustments are possible.

Fitting notes

To provide for test measurements without leakage of the medium, it is strongly recommended that an appropriate test adapter and shutoff device should be fitted. The pin on the inside of the screwed fitting of the sensor is designed to ensure that any Schrader-type fitting will be opened (or closed) when the sensor is installed or removed.

Pressure measurement with condensing gases

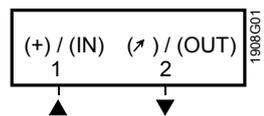
The tapping point should be at the top so that no condensate reaches the sensor.



Technical data

Electrical interface	Power supply	
	Supply voltage	DC 8...33 V
	Current consumption	20 mA max.
	Output signal	DC 4...20 mA (not galvanically separated, short-circuit proof and protected against polarity reversal)
Functional data	Application range	
	QBE9101-P10U	-1...+9 bar
	QBE9101-P30U	-1...+29 bar
	QBE9101-P60U	-1...+59 bar
	Measuring accuracy:	(FS = Full Scale)
	Total of linearity, hysteresis and reproducibility	<±0.5 % FS
	Balance accuracy	<±0.3 % FS
	Temperature drift:	
	TC zero point	<±0.03 % FS/K (typically)
	TC sensitivity	<±0.015 % FS/K (typically)
	Response time	<2 ms
	Nominal pressure	relative pressure as in "Type summary" (measurement of difference from ambient pressure)
	Max. admissible pressure	
	QBE9101-P10U	30 bar
	QBE9101-P30U	120 bar
QBE9101-P60U	180 bar	
Rupture pressure	6 x scale end value of measuring range (FS)	
Media	all refrigerants (including ammonia)	
Admissible temperature of medium	-40...+125 °C	
Maintenance	maintenance-free	
Mounting position	optional	
Protection	Protection standard	IP 67 to EN 60 529
Connections	Electrical connection	Quickon plug for cable dia. 4...6 mm, stranded wire 0.35...0.75 mm ²
	Screwed fitting	internal thread 7/16-20 UNF
Environmental conditions	Operation to	IEC 721-3-3
	Climatic conditions	class 3K7
	Temperature	-40...+85 °C
	Humidity	<95 % r.h.
	Storage/transport	
	Climatic conditions	
	Temperature	-40...+85 °C
	Humidity	<95 % r.h.
Standards	Electromagnetic compatibility	
	Immunity to	EN 61 000-6-2, EN 61 326-1
	Emissions to	EN 61 000-6-3, EN 55 022, EN 61 326-1
	 conformity to EMC directive	89/336/EEC
	 conformity to Australian EMC Framework Radio Interference Emission Standard	Radio Communication Act 1992 AS/NZS 3548
Materials	Base	stainless steel (1.4305)
	Measuring element	ceramics diaphragm
	Cover	stainless steel (1.4305)
	Sealant	metallically welded
Weight	à 25 Stück, ncluding packaging and Quick-on	25 x 0.107 kg = 2.673 kg

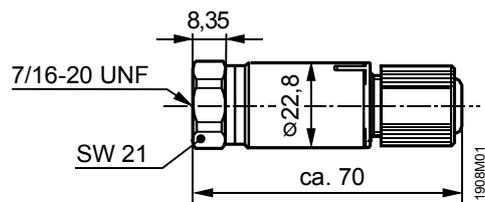
Internal diagram



Legend

<i>terminal marking</i>	<i>Meaning</i>
1 (+) / (IN)	Supply voltage DC 8 ... 33 V
2 (∩) / (OUT)	Output signal DC 4...20 mA

Dimensions



Dimensions in mm