



Pressure sensors

QBE621-P...U

for refrigerants

Pressure sensor for the measurement of positive positive and negative pressure in HVAC applications with low temperature liquids or gases.

- Piezo-resistive system of measurement
- DC 0...10 V output signal
- Sensor completely encapsulated in cast synthetic resin
- Measurement unaffected by temperature changes
- High temperature stability
- No mechanical ageing or creepage
- Internal thread UNF ⁷/₁₆

Use

The QBE621-P...U pressure sensors are suitable for the measurement of static and dynamic positive and negative pressures in HVAC applications, particularly in hydraulic and refrigeration systems using liquid or gaseous media.

The sensor operates on piezo-resistive measuring principles. The ceramic diaphragm (thick-film hybrid technology) measures the pressure through direct contact with the medium. The measurement is converted electronically into a linear output signal of DC 0 ...10 V.

Type summary

Three versions are available, covering the entire pressure range from $-1...+59$ bar.

Type	Pressure range			Signal
QBE621-P10U	$-1 \dots +9$ bar	$-100 \dots +900$ kPa	$-14.5 \dots +130.0$ psi	DC 0 ...10 V
QBE621-P25U	$-1 \dots +24$ bar	$-100 \dots +2400$ kPa	$-14.5 \dots +348.0$ psi	DC 0 ...10 V
QBE621-P60U	$-1 \dots +59$ bar	$-100 \dots +5900$ kPa	$-14.5 \dots +855.7$ psi	DC 0 ...10 V

Ordering

The QBE621-P...U pressure sensor and, where required, the FT-PZ1 thread-adapter kit must be ordered separately.

When placing an order, please specify the quantity, product description and type code

Example: **1 pressure sensor QBE621-P10U and 1 thread adapter set FT-PZ1 and 1 fixing bracket AQB22.1**

Compatibility

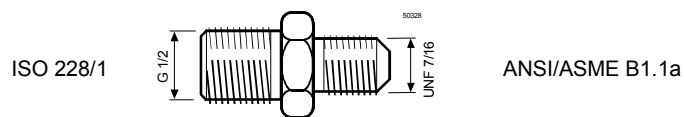
The QBE621-P...U pressure sensors can be combined with all devices or systems capable of processing the DC 0 ...10 V output signal from the pressure sensor.

Mechanical design

The QBE621-P...U pressure sensors are compact units encapsulated in synthetic resin and cannot be dismantled. No changes or adjustments are possible.

Accessories

FT-PZ1 The FT-PZ1 thread adapter kit is available for connection to gas or hydraulic systems with $G\frac{1}{2}$ " threads. The kit comprises 1 stainless steel reducing coupling and two copper sealing washers.



AQB22.1 Fixing bracket for pressure sensor. Dimensions see page 5

Mounting

Mounting instructions are enclosed with the sensor.

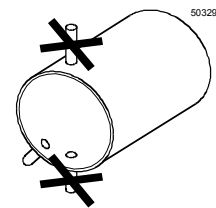
The QBE621-P...U sensor is designed for direct connection to UNF 7/16 screwed fittings. The FT-PZ1 thread adapter (reducing coupling and copper sealing washer) should be used for connections to systems with G $\frac{1}{2}$ " threads (see "Accessories").

To provide for test measurements without leakage of the medium, it is strongly recommended that an appropriate test adapter and shut-off 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.

To ensure tight fitting without leakage, a copper sealing washer (not supplied) should be fitted to the flange seat.

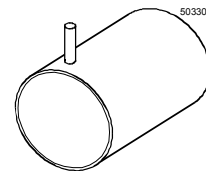
Pressure measurement with liquids

The tapping point should be at the side, near the bottom of the pipe. Do not measure the pressure from the top of the pipe (where it may be affected by airlocks) or the bottom (where it may be affected by dirt). Always evacuate the system.



Pressure measurement with condensing gases

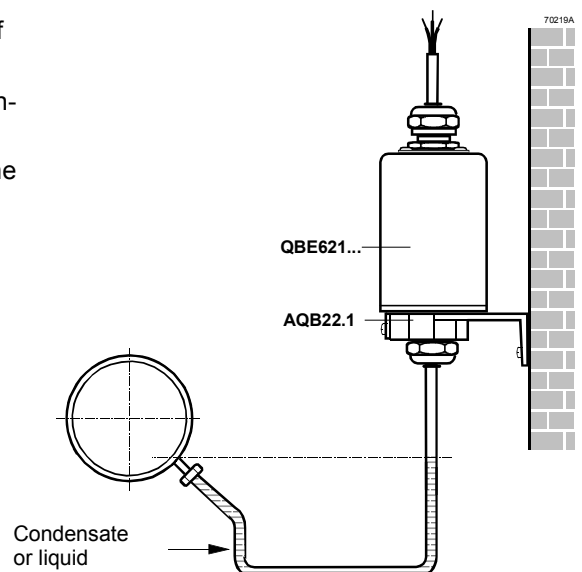
The tapping point should be at the top so that no condensate reaches the sensor.



Remote mounting

If the ambient conditions in respect of temperature and vibration cannot be fulfilled (see 'Technical data'), the sensor should be fitted remotely, taking care that no condensate can reach the sensor.

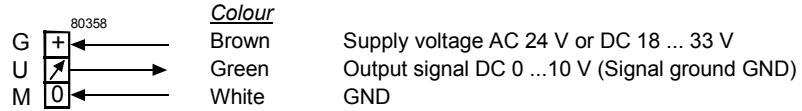
For remote mounting a fixing bracket AQB22.1 can be delivered, see "Accessories".



Technical data

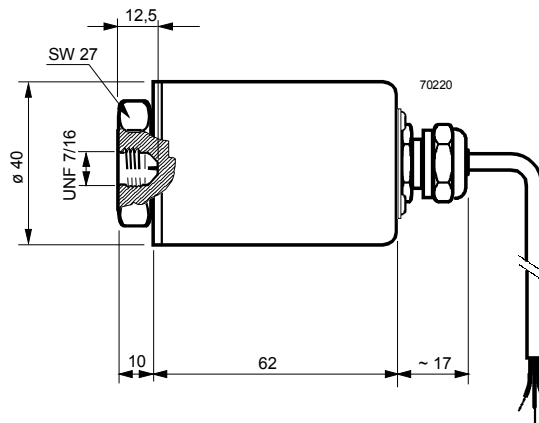
Electrical interface	Power supply	Extra-low voltage only (SELV, PELV)
	Supply voltage	AC 24 V, 50 ... 60 Hz or DC 18 ... 33 V
	Max. voltage tolerance	±15 % at AC 24 V
	Current consumption	<5 mA
	Output signal	DC 0 ...10 V, R _{Load} > 10 kΩ (no electrical isolation, three-wire connection, short-circuit proof and protected against polarity reversal)
Functional data	Application range	
	QBE621-P10U	-1 ... +9 bar
	QBE621-P25U	-1 ... +24 bar
	QBE621-P60U	-1 ... +59 bar
	Accuracy:	(FS = full scale)
	Total of linearity, hysteresis and reproducibility	<±0.5 % FS
	Zero point offset voltage	<50 mV
	Temperature drift:	
	TC zero point	<±0.05 % FS / K
	TC sensitivity	<±0.015 % FS / K
	Response time 90 %	<5 ms
	Nominal pressure	Relative pressure as in "Type summary" (Measurement of difference from ambient pressure)
	Max. admissible pressure	
	QBE621-P10U	26 bar
	QBE621-P25U	50 bar
QBE621-P60U	120 bar	
Rupture pressure	3 x scale end value of measuring range (FS)	
Media	Neutral and mildly corrosive liquids and gases	
Admissible temp. of medium	-40 ... +80 °C	
Maintenance	No maintenance required	
Orientation	Any	
Protective data	Protection standard	IP 65 to EN 60 529
Connection	Connecting cable	PVC, length 2 m, 3 x 0.25 mm ² stranded conductors
	Screwed fitting	External thread G1/2"
General ambient conditions	Temperature ranges	
	Operation	-40 ... +80 °C
	Storage	-40 ... +85 °C
	Ambient humidity	Class D to DIN 40 040
Norms and standards	Meets the requirements for CE marking in	EG 89/336 (EMC), EN 50081-1, EN 50081-2, EN 50082-2
Materials and colors	Base	Stainless steel (1.4305)
	Measuring element	Ceramic diaphragm
	Cover	Aluminium (Al Mg Si1), with silver-grey powder coating
	Sealant	CR chloroprene rubber (Neoprene)
	Sealing compound	Synthetic resin
	FT-PZ1 coupling	Stainless steel (1.4305)
	Flat-faced seal for FT-PT1	Copper
	Mounting bracket AQB22.1	Aluminium diecast
Weight	including packaging	0.36 kg

Internal diagram



Dimensions

All dimensions in mm



Fixing bracket AQB22.1

