

The pressure sensors are suitable for the measurement of relative pressure in HVAC plant, particularly in hydraulic and pneumatic systems using liquid or gaseous media (steam applications).

Type summary

Type reference	Order number	Pressure range		Output signal
QBE2003-P1	S55720-S290	0...1 bar	0...100 kPa	
QBE2003-P1.6	S55720-S291	0...1.6 bar	0...160 kPa	
QBE2003-P2.5	S55720-S292	0...2.5 bar	0...250 kPa	
QBE2003-P4	S55720-S293	0...4 bar	0...400 kPa	
QBE2003-P6	S55720-S294	0...6 bar	0...600 kPa	
QBE2003-P10*)	S55720-S295	0...10 bar	0...1.0 MPa	
QBE2003-P16*)	S55720-S296	0...16 bar	0...1.6 MPa	
QBE2003-P25*)	S55720-S297	0...25 bar	0...2.5 MPa	
QBE2003-P40	S55720-S298	0...40 bar	0...4.0 MPa	
QBE2003-P60	S55720-S299	0...60 bar	0...6.0 MPa	
QBE2103-P1	S55720-S300	0...1 bar	0...100 kPa	
QBE2103-P1.6	S55720-S301	0...1.6 bar	0...160 kPa	
QBE2103-P2.5	S55720-S302	0...2.5 bar	0...250 kPa	
QBE2103-P4	S55720-S303	0...4 bar	0...400 kPa	
QBE2103-P6	S55720-S304	0...6 bar	0...600 kPa	
QBE2103-P10*)	S55720-S305	0...10 bar	0...1.0 MPa	
QBE2103-P16*)	S55720-S306	0...16 bar	0...1.6 MPa	
QBE2103-P25*)	S55720-S307	0...25 bar	0...2.5 MPa	mA
QBE2103-P40	S55720-S308	0...40 bar	0...4.0 MPa	
QBE2103-P60	S55720-S309	0...60 bar	0...6.0 MPa	

*) These types do not have M5 inside threads.

Ordering and delivery

When ordering a pressure sensor, please provide quantity, type reference, order number and product name.

Example

Quantity	Type ref. (ASN)	Order number (SSN)	Product Name
1	QBE2003-P1	S55720-S290	Pressure sensor

Any accessories required must be ordered separately.

Accessories

Type	Order No.(SSN)	Name	Data Sheet
AQB2004**)	S55720-S318	Mounting bracket to attach the pressure sensor for remote mounting.	A6V10434028
AQB2001**)	S55720-S116	Connection set for remote mounting with 1 m copper capillary line. Pressure connection external thread G " or G ½".	A6V10434028

**) Cannot be used with types QBE2003-P10, QBE2003-P16, QBE2003-P25, QBE2103-P10, QBE2103-P16, and QBE2103-P25. These types do not have M5 inside threads.

Mode of operation

The pressure sensors operate on the piezo-resistive measuring principle. The ceramic or stainless steel diaphragm*) (thick-film hybrid technology) acquires the pressure through direct contact with the medium. The measurement is converted electronically

*) Applies to QBE2003-P10, QBE2003-P16, QBE2003-P25, QBE2103-P10, QBE2103-P16, and QBE2103-P25

Mechanical design

The pressure sensor consists of:

Sensor hood with DIN EN 175301-803-A plug-in connection

Piezo-resistive measuring element integrated in the stainless steel case

Pressure connection external thread G 1/2" and inside thread M5*) for use with accessory AQB2001**)

Plug DIN EN 175301-803-A (plugged in)

No changes or adjustments are possible.

*) The following types do not have M5 inside threads:

QBE2003-P10, QBE2003-P16, QBE2003-P25, QBE2103-P10, QBE2103-P16, and QBE2103-P25

**) Cannot be used on types QBE2003-P10, QBE2003-P16, QBE2003-P25, QBE2103-P10, QBE2103-P16, and QBE2103-P25. A solution on the construction side using the 1/2" threaded connection is possible.

Mounting notes

Mounting Instructions are enclosed with the sensor. For further information about mounting location and mounting position refer to the sensor mounting user's manual at the BT download center: <http://siemens.com/bt/download>.

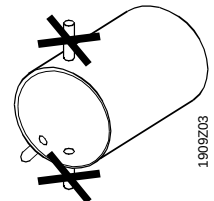
Appropriate measures must be taken to ensure a leak-proof fitting.

To provide for test measurements without leakage of the medium, it is strongly recommended that an appropriate test adapter and shutoff device be fitted.

Pressure measurement with liquids

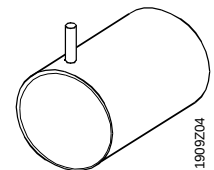
The tapping point should be at the side, near the bottom of the pipe. Do not measure the pressure from the top of the pipe (where it may be affected by airlocks) or the bottom (where it may be affected by dirt).

Always purge the system.



Pressure measurement with condensing gases

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



Important note

Ensure suitable construction measures are undertaken to avoid pressure shocks in the plant; pressure shocks may damage the pressure sensor's diaphragm. In the event that pressure shocks are unavoidable, a panel screw (M5) may be able to weaken the effect. Contact in this case your nearest Siemens branch office.

Disposal



The device is considered electrical and electronic equipment for disposal in terms of the applicable European Directive and may not be disposed of as domestic garbage.

- Dispose of the device via the channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Technical data

Electrical interface	Power supply	Protection by extra low voltage (SELV, PELV) AC 24 V $\pm 15\%$, 50...60 Hz or DC 12...33 V <7 mA, < 0.5 VA	
	Current consumption	<23 mA, < 0.7 VA	
	External supply line protection	Fuse slow max. 10 A or Circuit breaker max. 13 A Characteristic B, C, D according to EN 60898 or Power source with current limitation of max. 10 A	
	Output signal QBE2003	DC 0 ...10 V, load > 10 k Ω , < 100 nF, 3-wire	
	Output sig	Load Operating voltage 7 V 0,02 A Ohm	
		2-wire	
	Insulation voltage	500V	
	Short circuit proof, protected against reverse polarity	Any connection	
	Application range	Refer to "Type summary"	
	Characteristic curve ¹⁾	$\pm 0.3\%$ FS	
Functional data Measuring accuracy FS = Full scale	Resolution	0.1 % FS	
	Temperature response	< $\pm 0.2\%$ FS/10 °C (-1 1°C)	
	Long-term stability (as per IEC EN60770-1)	< $\pm 0.25\%$ FS	
		¹⁾ typical; max. 0.5 % FS (including zero point, end value, linearity, hysteresis, and reproducibility)	
	Dynamic response	Response time: <2 ms, typical 1 ms Load change: < 100 Hz	
	Nominal pressure	Relative pressure as in "Type summary" (measurement of difference from ambient pressure)	
	Max. admissible pressure/ Rupture pressure	3 x scale end value of measuring range 0 1 to 0 4 bar 2.5 x scale end value of measuring range 0...6 to 0...60 bar	
	Media	Neutral and slightly corrosive liquids and gases (suited for use with oil-contacting media)	
	Admissible temperature of medium	-15...+125 °C	
	Maintenance	Maintenance-free	
Protection	Mounting position	Optional	
	Protection standard	IP 65 to EN 60529	
Connections	Protection class	III according to EN 60730	
	Electric connection	Plug DIN EN 175301-803-A, Cable diameter 6-8 mm	
Environmental conditions	Screwed fitting	External thread G ½", inside thread M5*)	
	Temperature	Operation	Storage
	Humidity	-30...+85 °C Insensitive to Condensation	-50...+100 °C Insensitive to Condensation

Directives and standards	Product standard	EN 61326-1 Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements
Materials	Pressure connection	Stainless steel 1.4404 / AISI 316L
	Plug housing	Polyarylamide 50 % GF VO
	Materials and media contact	Stainless steel 1.4404 / AISI 316L
		Ceramics Al ₂ O ₃ (96 %) Stainless steel FPM
Conformity	EU Conformity (CE)	8000078214 ***)
	RCM Conformity	CE1T1909en_C1 ***)
	Weight	0,171 kg

*) The following types do not have M5 inside threads.

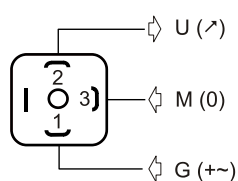
QBE2003-P10, QBE2003-P16, QBE2003-P25, QBE2103-P10, QBE2103-P16, and QBE2103-P25

**) Stainless steel for types QBE2003-P10, QBE2003-P16, QBE2003-P25, QBE2103-P10, QBE2103-P16, and QBE2103-P25

***) The documents can be downloaded from <http://siemens.com/bt/download>.

Internal diagram

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BT-Terminal marking	Terminal nr.	Meaning
U (↗)	2	Output signal DC 0...10 V (signal ground GND)
M (0)	3	GND
G (+)	1	Supply voltage AC 24 V or DC 12...33 V

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BT-Terminal marking	Terminal nr.	Meaning
I (↗)	2	Output signal DC 4...20 mA
G (+)	1	Supply voltage DC 7...33 V

Dimensions

QBE2003-G
QBE2103-G

*) The following types do not have

M5 interior threads:

QBE2003-P10

QBE2003-P16

QBE2003-P25

QBE2103-P10

QBE2103-P16

QBE2103-P25



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