SIEMENS

QBE2x05-P…
QBE9105-P…
QBE9106-P…

Pressure Sensors

for neutral and slightly aggressive liquids and gases

- **High-precision measuring**
- **Stainless steel diaphragm with 360-degree welding technology**
- **Measuring range 0 to 25 bar relative**
- **Supply voltage AC 24 V / DC 12...33 V or DC 7…33 V**
- **DC 0 ...10 V or DC 4…20 mA output signal**
- **Measurement unaffected by changes in temperature**
- **High temperature stability**
- **Connection: External thread G ½" and G ¼"**
- **Maintenance free thanks to outstanding long-term stability**
- **High overload resistance**
- **Robust and compact construction**
- **Pressure orifice available**

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Smart Infrastructure

Use

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

Type summary

Type reference	Order number	Pressure range		Pressure connection	Electric connection	Pressure orifice	Output signal
QBE2005-P10	S55720-S806	0…10 bar	0...1.0 MPa	G ½	DIN EN 175301-803-A	N/A	0…10 V
QBE2005-P16	S55720-S807	0…16 bar	0...1.6 MPa	G ½	DIN EN 175301-803-A	N/A	0…10 V
QBE2005-P25	S55720-S808	0…25 bar	0...2.5 MPa	G ½	DIN EN 175301-803-A	N/A	0…10 V
QBE2005-P10P	S55720-S809	0…10 bar	0...1.0 MPa	G ½	DIN EN 175301-803-A	Yes	0…10 V
QBE2005-P16P	S55720-S810	0…16 bar	0...1.6 MPa	G ½	DIN EN 175301-803-A	Yes	0…10 V
QBE2005-P25P	S55720-S811	0…25 bar	0...2.5 MPa	G ½	DIN EN 175301-803-A	Yes	0…10 V
QBE2105-P10	S55720-S812	0…10 bar	0...1.0 MPa	G ½	DIN EN 175301-803-A	N/A	4…20 mA
QBE2105-P16	S55720-S813	0…16 bar	0...1.6 MPa	G ½	DIN EN 175301-803-A	N/A	4…20 mA
QBE2105-P25	S55720-S814	0…25 bar	0...2.5 MPa	G ½	DIN EN 175301-803-A	N/A	4…20 mA
QBE2105-P10P	S55720-S815	0…10 bar	0...1.0 MPa	G ½	DIN EN 175301-803-A	Yes	4…20 mA
QBE2105-P16P	S55720-S816	0…16 bar	0...1.6 MPa	G ½	DIN EN 175301-803-A	Yes	4…20 mA
QBE2105-P25P	S55720-S817	0…25 bar	0...2.5 MPa	G ½	DIN EN 175301-803-A	Yes	4…20 mA
QBE9105-P10	S55720-S818	0…10 bar	0...1.0 MPa	G ¼	DIN EN 175301 803 A	N/A	4…20 mA
QBE9105-P16	S55720-S819	0…16 bar	0...1.6 MPa	G ¼	DIN EN 175301 803 A	N/A	4…20 mA
QBE9106-P10	S55720-S820	0…10 bar	0...1.0 MPa	G ¼	Metri-Pack 150	N/A	4…20 mA
QBE9106-P16	S55720-S821	0…16 bar	0...1.6 MPa	G ¼	Metri-Pack 150	N/A	4…20 mA

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	QBE2005-P10	S55720-S806	Pressure sensor

Mode of operation

The pressure sensors operate on the piezo-resistive measuring principle. The stainless steel 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 0...10 V or DC 4…20 mA.

Mechanical design

The pressure sensor consists of:

- Sensor hood with DIN EN 175301-803-A plug-in connection or Metri-Pack 150 connector
- Piezo-resistive measuring element integrated in the stainless steel case
- Pressure connection external thread G ½" for use with accessory AQB2001 or Pressure connection external thread G ¼"

No changes or adjustments are possible.

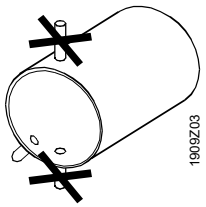
Mounting notes

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: https://siemens.com/bt/download.
Appropriate measures must be taken to ensure a leak-proof fitting.
To prevent leakage of the medium during test measurements, it is recommended that an appropriate test adapter and a shut-off device be fitted.

Pressure measurement with liquids

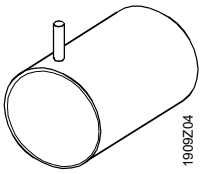
The tapping point should be at the side, near the bottom of the pipe. Do not measure the pressure from the top of the pipe (where it may be affected by airlocks) or the bottom (where it may be affected by dirt).

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 constructions measures are undertaken to avoid pressure shocks in the plant; pressure shocks may damage the pressure sensor's diaphragm.

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

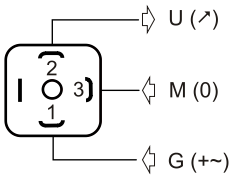
Electrical interface	Power supply	Protection by extra low voltage (SELV, PELV)
	Supply voltage (QBE2005…) Current consumption	AC 24 V ±15%, 50...60 Hz or DC 12...33 V <7 mA, < 0.5 VA
	Supply voltage (QBE2105…/QBE9105…/ QBE9106…)	DC 7…33 V
	Current consumption	<23 mA, < 0.7 VA
	External supply line protection	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 QBE2005…	DC 0 ...10 V, load >10 kΩ, < 100 nF, 3-wire
	Output signal QBE2105…	DC 4…20 mA, $R_{Load} \leq \frac{\text{Operating voltage} - 7\ V}{0{,}02\ A}$ Ohm 2-wire
	Output signal QBE9105…/QBE9106…	DC 4…20 mA, $R_{Load} \leq \frac{\text{Operating voltage} - 7\ V}{0{,}02\ A}$ Ohm 2-wire
	Insulation voltage	500V
	Short circuit proof, protected against reverse polarity	Any connection
Functional data	Application range	Refer to "Type summary"
Measuring accuracy *FS = Full scale*	Characteristic curve [1)] Resolution Temperature response Long-term stability (as per IEC EN60770-1)	±0.3 % FS 0.1 % FS <±0.2 % FS/10 °C (*-15…85°C)* <±0.25 % FS
	[1)] Typical (including zero point, end value, and linearity); 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 10 to 25 bar 6 x scale end value of measuring range 10 to 25 bar
	Media Admissible temperature of medium	Neutral and slightly corrosive liquids and gases (suited for use with oil-contacting media) -30...+135 °C
	Maintenance	Maintenance-free
	Mounting position	Optional
Protection	Protection standard	IP 65 to EN 60529
	Protection class	III according to EN 60730
Connections	Electric connection	Plug DIN EN 175301-803-A (cable diameter 6-8 mm); Metri-Pack 150
	Screwed fitting	External thread G ½"; External thread G ¼"
Environmental conditions		Operation / Storage
	Temperature	-30...+85 °C / -50...+100 °C
	Humidity	Insensitive to Condensation / 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	Press. connection Meas.elem. Sealant	Stainless steel 1.4404 / AISI 316L Stainless steel EPDM (QBE9105, QBE9106)
Conformity	EU Conformity (CE)		A5W03099119A *)
Weight	Including packaging		Approximately 0.184 kg

*) The document can be downloaded from https://siemens.com/bt/download.

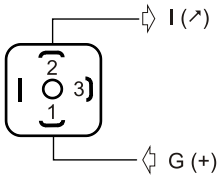
Internal diagram

QBE2005…



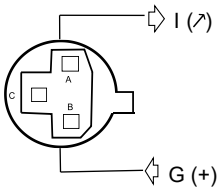
BT-Terminal marking	*Terminal nr.*	*Meaning*
U (↗)	*2*	Output signal DC 0...10 V (signal ground GND)
M (0)	*3*	GND
G (+)	*1*	Supply voltage AC 24 V or DC 12...33 V

QBE2105…
QBE9105…



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

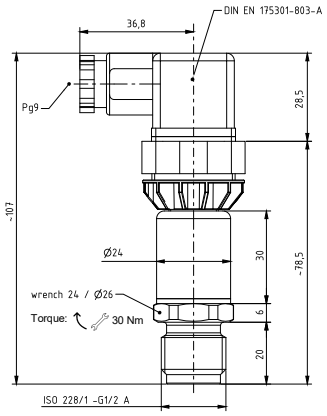
QBE9106…



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

Dimensions (mm)

QBE2005-P…
QBE2105-P…



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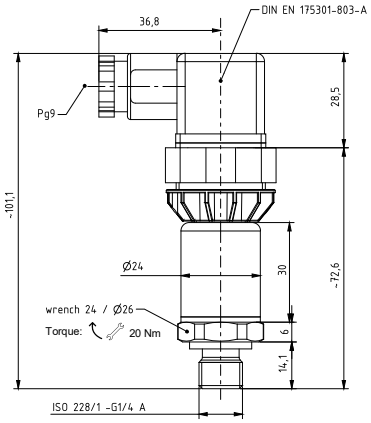

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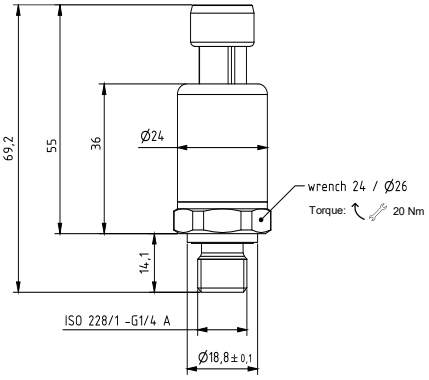

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