SIEMENS

Pressure sensor

QBE2x03U-P..



For neutral and slightly corrosive liquids, gases, and refrigerants (including ammonia)

- High degree of measuring accuracy
- Measuring range 0...300 psi (0...20.7 bar) relative
- Operating voltage AC 24 V / DC 12...33 V or DC 7...33 V
- Output signal DC 0...10 V or DC 4...20 mA
- Fully welded, gasket-free stainless steel construction
- High temperature stability
- Pressure connection 1/4"-18 NPT
- Maintenance free thanks to outstanding long-term stability
- High overload resistance
- Robust and compact construction

Application

Pressure sensor to measure relative pressures in HVAC applications.

In particular in:

- Hydraulic systems
- Pneumatic systems using liquid or gaseous media, or refrigerant (including ammonia)

Functions

Measuring principle

The pressure sensors operate on the piezo-resistive measuring principle.

The stainless steel diaphragm acquires the pressure through direct contact with the medium. Thick-film hybrid technology is used for measurements.

Signal processing

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
- Piezo-resistive measuring element , integrated in a stainless steel housing.
- Pressure connection ¼"-18 NPT
- Plug DIN EN 175301-803-A (premounted)



The pressure sensor is set at the factory. Changeovers or adjustments are not possible.

Type summary

Order number	Type	Pressure range		Output signal
S55720-S737	QBE2003U-P15	0...15 psi	0...1.0 bar	0...10 V
S55720-S738	QBE2003U-P30	0...30 psi	0...2.1 bar	0...10 V
S55720-S739	QBE2003U-P60	0...60 psi	0...4.1 bar	0...10 V
S55720-S740	QBE2003U-P100	0...100 psi	0...6.9 bar	0...10 V
S55720-S741	QBE2003U-P150	0...150 psi	0...10.3 bar	0...10 V
S55720-S742	QBE2003U-P200	0...200 psi	0...13.8 bar	0...10 V
S55720-S243	QBE2003U-P300	0...300 psi	0...20.7 bar	0...10 V
S55720-S744	QBE2103U-P15	0...15 psi	0...1.0 bar	4...20 mA
S55720-S745	QBE2103U-P30	0...30 psi	0...2.1 bar	4...20 mA
S55720-S746	QBE2103U-P60	0...60 psi	0...4.1 bar	4...20 mA
S55720-S747	QBE2103U-P100	0...100 psi	0...6.9 bar	4...20 mA

Order number	Type	Pressure range		Output signal
S55720-S748	QBE2103U-P150	0...150 psi	0...10.3 bar	4...20 mA
S55720-S749	QBE2103U-P200	0...200 psi	0...13.8 bar	4...20 mA
S55720-S750	QBE2103U-P300	0...300 psi	0...20.7 bar	4...20 mA

Ordering

Specify order number, type, and product designation when ordering.

Example

Order number	Type	Product designation
S55720-S737	QBE2003U-P15	Pressure sensor 0...10 V, 0...15 psi (0...1.0 bar)

Delivery

Pressure sensors are supplied with mounting instructions. See 'Product documentation [▶ 3]'.

Product documentation

Topic	Title	Document ID
Mounting instructions	Mounting instructions QBE2x03-P.., QBE2x03U-P..	A6V10432500

Related documents such as the environmental declarations, declarations of conformity, etc., can be downloaded from the following Internet address:
www.siemens.com/bt/download

Notes

Security

⚠ CAUTION	
	**National safety regulations** Failure to comply with national safety regulations may result in personal injury and property damage. ● Observe national regulations and comply with the appropriate safety regulations.

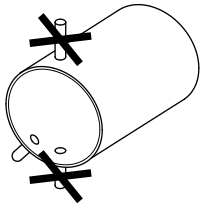
Mounting

Additional details on mounting location and installation position are available in the mounting instructions. See 'Product documentation [▶ 3]'.

	Take appropriate measures to ensure a leak-proof fitting. We strongly recommend fitting the appropriate test adapters and shutoff devices to provide for test measurements without leakage of the medium.

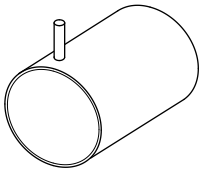
Pressure measurement for liquids

Install sideways rather than pointing up (air inlets) and down (dirt). Always purge the system.



Pressure measurement for condensing gases

Install at the top to prevent condensation from reaching the sensor.



NOTICE	
!	**Shocks in the plant** Damage to the pressure sensor's diaphragm. • Take appropriate constructions measures to avoid pressure shocks in the plant.

Maintenance

Pressure sensors are maintenance-free.

Disposal

	This symbol or any other national label indicates that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation. For additional details, refer to Siemens information on disposal.

Technical data

Electrical interface	
Power supply	Safety extra low voltage (SELV/PELV)
Operating voltage ● QBE2003U-P.. ● QBE2103U-P..	 AC 24 V, 15 %, 50...60 Hz or DC 12...33 V DC 7...33 V
Power consumption ● QBE2003U-P.. ● QBE2103U-P..	 <7 mA <23 mA
External fusing of supply line	Non-renewable fuse slow to a max. 10 A or Circuit breaker max. 13 A Tripping characteristic B, C, D per EN 60898 or Power source with current limitation of max. 10 A
Output signal ● QBE2003U-P.. ● QBE2103U-P..	 DC 0...10 V, Last >10 k, < 100 nF, 3-wire $R_{LOAD} < \frac{SupplyVoltage - 7\ V}{0.02\ A}\ [\Omega]$ DC 4...20 mA, 2-wire
Insulation voltage	500 V
Protected against short-circuits and reverse-polarity	Each connection against each

Operating data	
Pressure range	See 'Type summary [▶ 2]'.
Measuring accuracy Characteristic curve [1] Resolution Temperature response Long-term stability (as per IEC EN60770-1)	FS = Full scale ±0.25 % FS <±0.1 % FS <±0.2 % FS/10 °C (5...185 °F / -15...+85 °C) <±0.25 % FS
Dynamic response	Response time: <2 ms, typical 1 ms Load change: <100 Hz
Rated pressure	Relative pressure as list in 'Type summary [▶ 2]'.
Max. permissible pressure/ Rupture pressure	5x / 10x end value of the measuring range (0...15 to 0...60 psi) 3x / 6x end value of the measuring range (0...100 to 0...300 psi)
Media Perm. medium temperature	Neutral and slightly corrosive liquids and gases (suited for use with oil-contacting media) -40...+275 °F (-40...+135 °C)
Maintenance	Maintenance free
Mounting position	Any
[1] Typical; max. 0.5 % FS (including zero point, end value, linearity, hysteresis, and reproducible)	

Degree of protection	
Degree of protection	IP65 per EN 60529
Protection class	III to EN 60730

Connections	
Electrical connection	Plug DIN EN 175301-803-A, cable diameter 6...8 mm (0.2...0.3 in)
Pressure connection	¼"-18 NPT

Environmental conditions		
	Operation	Storage
Temperature	-22...+185 °F (-30...+85 °C)	-58...+212 °F (-50...+100 °C)
Humidity	Insensitive to condensation	Insensitive to condensation

Standards, directives and approvals	
Product standards	IEC/EN 61326-1 Electrical equipment for measurement, control and laboratory use
Electromagnetic compatibility	For residential, commercial, and industrial environments
EU conformity (CE)	See EU declaration of conformance *)
UL/cUL certification (USA/Canada)	UL 61010-1 E326867, https://iq.ulprospector.com/en/
Environmental compatibility	The product environmental declaration *) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
*) Documents can be downloaded at http://siemens.com/bt/download.	

Materials		
Pressure connection		Stainless steel 1.4404 / AISI 316L
Plug housing		Polyarylamide 50 % GF VO
Materials with media contact	Pressure connection Sensing element	Stainless steel 1.4404 / AISI 316L Stainless steel

Dimensions (weight)	
Including packaging	0.376 lb (0.171 kg)

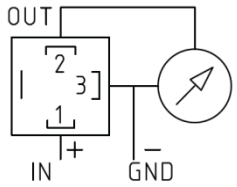
Connection diagrams

Internal diagram

QBE2003U-P..

3-wire:

Plug DIN EN 175301-803-A

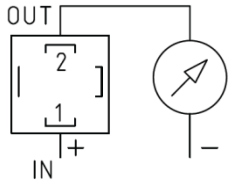


BT terminal code	Terminal number	Meaning
U (↗)	2	OUT: Output signal DC 0...10 V (Signal ground GND)
M (0)	3	GND
G (+)	1	IN: Operating voltage AC 24 V or DC 12...33 V

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2-wire:

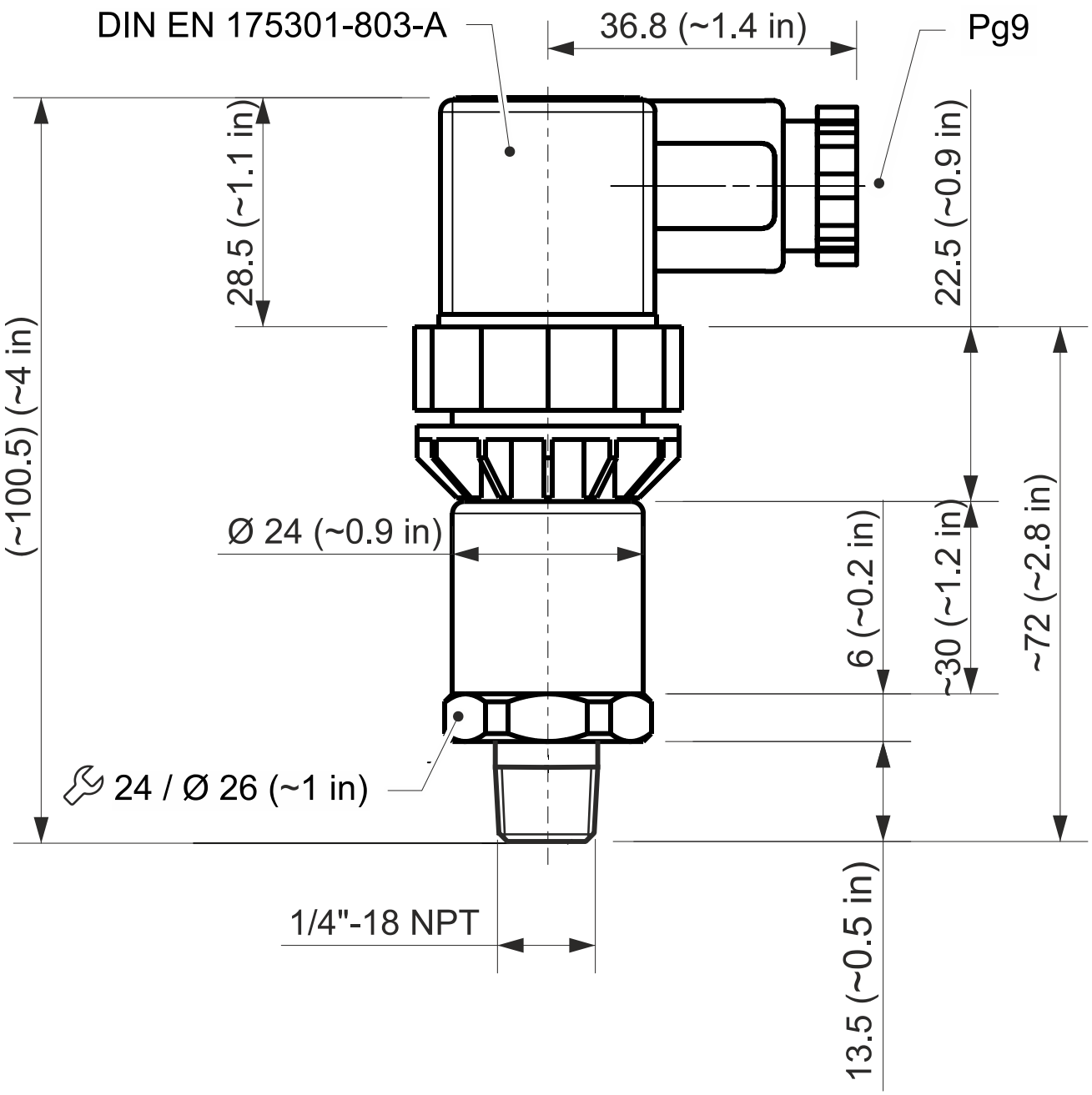
Plug DIN EN 175301-803-A



BT terminal code	Terminal number	Meaning
I (↗)	2	OUT: Output signal DC 4...20 mA
G (+)	1	IN: Operating voltage DC 7...33 V

Dimensions

Dimensions in mm (in)



Compliance

European Union conformity

Contact for regulatory topics: (EU) Siemens AG, Berliner Ring 23, DE-76437 Rastatt

United Kingdom conformity assessed

Contact for regulatory topics: (GB) Siemens plc, Sir William Siemens House, Princess Road, Manchester, M20 2UR

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