SIEMENS

1923

1923P01

Differential pressure sensors

QBE61.3-DP..

for neutral or slightly aggressive gases and liquids

- **Operating voltage AC 24 V or DC 18...33 V**
- **Output signal DC 0...10 V**
- **Connecting male thread G½"**
- **3 Versions covering a total differential pressure range of 0…10 bar**
- **Ceramics measurement system**
- **High level of safety against overpressures**

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Building Technologies

Use

For acquiring the differential pressures in HVAC plant.
Suited for use with the following types of media:

- Neutral or slightly aggressive gases
- Neutral or slightly aggressive heating water and cold water (with or without additives, such as hydrazine or glycol)

Type summary

Type reference	*Measurement range*	*Max. overload on one side*	*Nominal pressure*
QBE61.3-DP2	0...2 bar	±12 bar	PN 40 bar
QBE61.3-DP5	0...5 bar	±20 bar	PN 40 bar
QBE61.3-DP10	0...10 bar	±20 bar	PN 40 bar

Accessories

Description	Part no.
Water trap pipe, for medium temperatures above 85 °C (steam) or below −15 °C	**4 286 1652 0**

Ordering and delivery

When ordering, please give name and type reference of the unit, for example:
1 differential pressure sensor QBE61.3-DP2.
The sensor is supplied without the water trap pipe.

Equipment combinations

The differential pressure sensor can be used with all devices or systems capable of handling the sensor's output signal of DC 0...10 V.

Mode of operation

The differential pressure sensor uses a ceramics measurement system. The pressure is measured by making direct contact with the medium. The pressure signal is electronically converted to a linear DC 0...10 V signal (3-wire connection) and made available at output "U".
The output signal is proportional to the measurement range.

Mechanical design

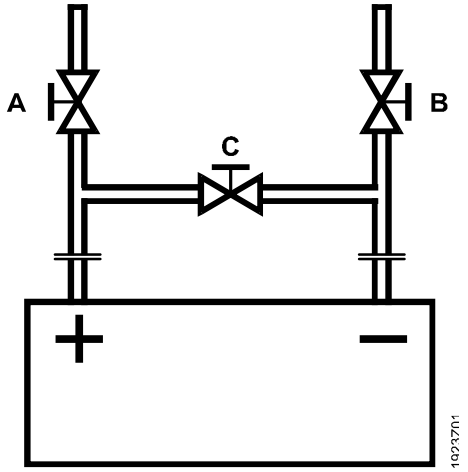
The differential pressure sensor consists of:

- plastic housing with removable cover
- mounting bracket
- 2 threaded connections G½
- measurement system consisting of casing with an embedded ceramics element and a printed circuit board with electronics
- strip with the connection terminals

The cable enters through a Pg 9 cable gland.

Engineering notes

The QBE61.3-DP.. and all interconnected devices must be wired to the same G0/G– (measuring neutral). Also refer to the Data Sheets of the devices to which the sensor is connected.
The differential pressure at the sensor may never exceed the permissible overload on one side (refer to “Type summary”).
High static pressure can destroy the sensor if it acts on only one side of the measurement system. This can be prevented by using the following layout:



A...C Isolating valves

Mounting and installation notes

Mounting position: optional.
Medium temperatures above 85 °C (steam) or below -15 °C make it necessary to install a water trap pipe between piping and sensor.
Connection "+" : higher pressure/smaller vacuum.
Connection "-" : lower pressure/higher vacuum.
When used for acquiring the differential pressure in liquids, the following must be noted:

- Mount the sensor below the level of pressure measurement
- Mount the sensor on a vibration-free surface
- System venting is mandatory

The differential pressure sensor is supplied with Mounting Instructions.

Disposal

The devices are considered electronics devices for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic waste.

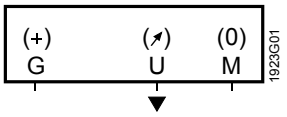
- Dispose of the device via the channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Technical data

Electrical interface	Operating voltage (SELV)	AC 24 V ±15 %, 50/60 Hz or DC 18...33 V
	Power consumption	<150 mVA
	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 Voltage burden	DC 0...10 V (short-circuit-proof and reversed polarity protection)> 10 kΩ
Product data	Measurement range	refer to “Type summary”
	Sensing element	ceramics
	Measurement accuracy at 20 °C	(FS = Full Scale)
	Sum of linearity, hysteresis, and reproducibility	
	QBE61.3-DP2, QBE61.3-DP5	<±1 % FS
	QBE61.3-DP10	<±0.5 % FS
	Zero point	<1 % FS
	Response time	<5 ms
	Max. overload on one side	refer to “Type summary”"
	Nominal pressure (system pressure, connected to both "+" and "–"	PN 40
	Bursting pressure	1.5 times the nominal pressure
	Media	not oleiferous, neutral or slightly aggressive gases and liquids
	Perm. temperature	-15...85 °C (steam with water trap pipe)
Degree of protection	Protection degree of housing	IP54 according to EN 60529
	Protection class	III according to EN 60730-1
Connections	Electrical connections	
	Connection terminals	no screws (WAGO), for max. 1.5 mm2
	Cable gland	Pg 9
	Pressure connections (externally threaded)	G½"
	Weight (incl. packing)	1.64 kg
Environmental conditions	Perm. ambient temperature	
	Operation	-15...85 °C (medium) -15...70 °C (electronics, terminals)
	Transport and storage	-40...80 °C
	Perm. ambient humidity	<90 % r. h. (non-condensing)
Materials and colours	Components getting in contact with the medium	stainless steel (1.4305), ceramics, copper, brass
	Sealing material	EPDM
	Housing and cover	plastic ABS, light-grey (RAL 7035)
	Cable entry	PA glassfibre re-inforced, NBR (seal)
	Mounting bracket	stainless steel
	Pressure connection	brass
	Sensor	silicon-free
Directives and Standards	Product standard	EN 61326-1 Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements.
	EU Conformity (CE)	CE1T1923xx *)
	RCM Conformity	8000078879 *)
Environmental compatibility	The product environmental declaration CE1E1923*) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal)	

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

Connection diagram



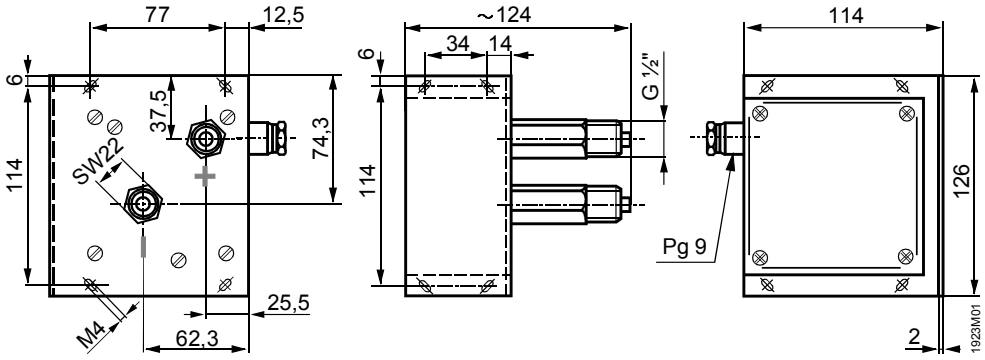
Legend

G (+)	Power supply AC 24 V or DC 18...33 V
U (↗)	Measured signal output DC 0...10 V
M (0)	G0/G–, measuring neutral

Note: the symbols in parenthesis correspond to the terminal marking on the terminal block

Dimensions (in mm)

QBE61.3-DP..



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