



## Flow sensor

**QVE2000.0xx**  
**QVE2100.0xx**

for liquids in DN 10...25 pipes

- Vortex flow sensor made from fiber-glass-reinforced plastic
- Output signal: DC 0...10 V or 4...20 mA
- Flow range: 1.8 ...150 l/min
- Used for temperature ranges: -15...+125 °C
- Operating voltage: DC 18...33 V (QVE2100...) or 11.5...33 V (QVE2000...)
- Temperature-insensitive measuring principle
- No moving parts
- Low pressure loss
- Insensitive to soiling

### Use

The flow sensor is suited to continuously measure flow or monitor liquids such as hot water, heating water, or standard water-glycol mixes in HVAC plants and applications. The sensors can be used in automation and control systems as control sensor or measured value sensor.

## Type summary

Type / ASN	Product number (SSN)	Nominal width dia [mm]	Measuring range		Output signal DC
			[l/min]	[m <sup>3</sup> /h]	
QVE2000.010	S55720-S189	DN 10	1.8...32	0.1...1.92	DC 0...10 V
QVE2000.015	S55720-S190	DN 15	3.5...50	0.2...3.0	DC 0...10 V
QVE2000.020	S55720-S191	DN 20	5.0...85	0.3...5.1	DC 0...10 V
QVE2000.025	S55720-S192	DN 25	9.0...150	0.5...9.0	DC 0...10 V
QVE2100.010	S55720-S193	DN 10	1.8...32	0.1...1.92	DC 4...20 mA
QVE2100.015	S55720-S194	DN 15	3.5...50	0.2...3.0	DC 4...20 mA
QVE2100.020	S55720-S195	DN 20	5.0...85	0.3...5.1	DC 4...20 mA
QVE2100.025	S55720-S196	DN 25	9.0...150	0.5...9.0	DC 4...20 mA

## Ordering

When ordering, please specify the quantity, type, and product name.

Type	Stock number	Designation
ASN	SSN	Product designation
QVE2000.010	S55720-S189	Flow sensor

Example:

1 flow sensor QVE2000.010

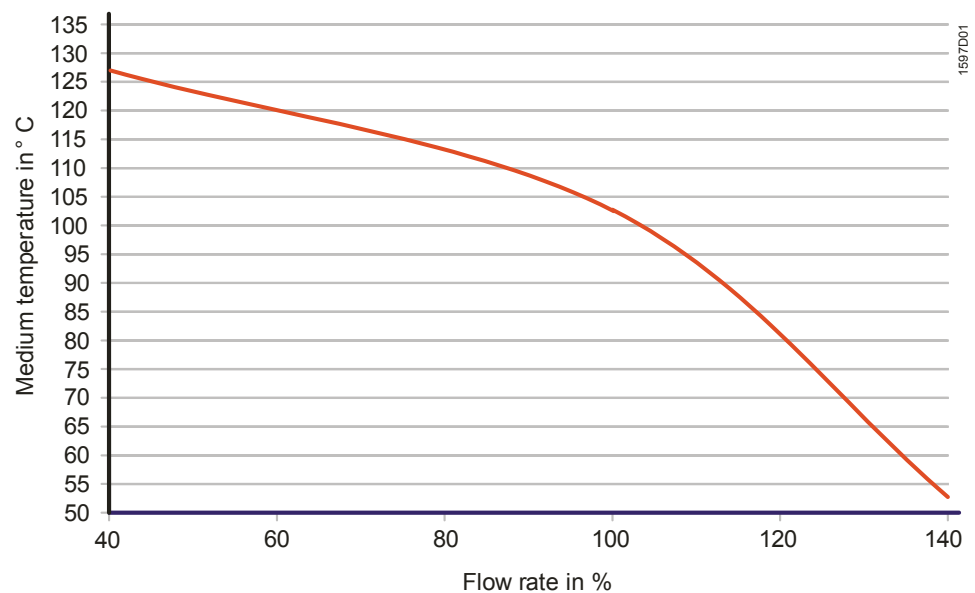
## Delivery

Scope of delivery:

- Flow sensor with external thread connection
- 2 x inserted O-ring
- Straight, 3-pin plug M12x1 with cable, 2 m
- Mounting instructions

## Service life

10 year curve as related to flow and media temperature



## Engineering notes

### Warning

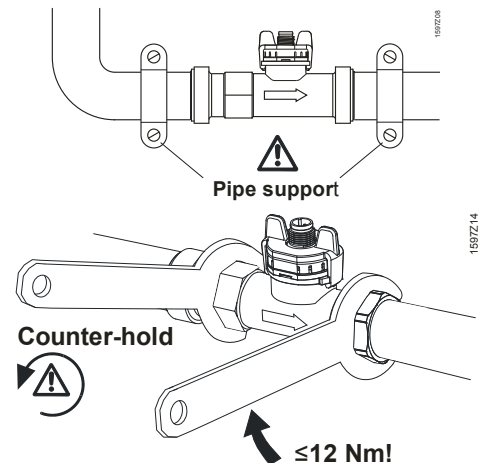
Operational safety of the supplied device is only guaranteed when used properly (flow measurement of liquids). Do not exceed under no circumstances the indicated limit values (see "Technical data").

## Mounting notes

### Important

Strictly observe the following notes to prevent sensor material damages when mounting:

- Mount the sensor only when de-energized. Thus, the connecting pipes must be supported by tube clamps as close to the sensor inlet and outlet as possible.
- When mounting the sensor, use suitable connection fittings. Do not exceed a **12 Nm** torque when tightening the union nut. To tighten, hold the union nut with a wrench against the tightening torque.

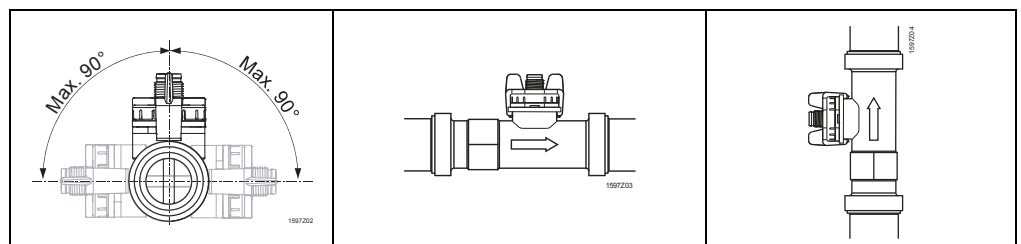


### **Avoid air bubbles in the medium**

Install the flow sensor where the pipes are completely filled with the medium to be measured, and where gas bubbles and cavitation in the medium are avoided.

### **Note mounting position and flow direction**

Mount the flow sensor only in the intended position or proper flow direction (note the arrow on the connecting pipe). The measured flow values will be wrong if the sensor is mounted in the wrong position or direction.



### **Further important notes**

- The entire measuring path must be free of foreign bodies.
- Plan for sufficient settlement distance before the sensor inlet or outlet area to avoid eddying effects e.g. by curvatures, steps, changes to diameter, valves, pumps, etc..
- For this reason, strictly adhere to the recommended minimum distances as recommended in the mounting instructions.

## Installation notes

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- Comply with all local regulations on electrical systems.
- Use only qualified personnel for electrical installation.
- Always de-energize the system before connecting the wires of the mains cable.

## Operating notes

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Do not exceed maximum operating pressure as well as maximum medium temperature (see "Technical data").

## Service notes

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- Do not remove a flow switch or its body from a system under pressure.
- The flow sensor is maintenance-free and cannot be repaired by the user.

## Disposal

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In terms of disposal, the QVE2x00.0xx flow sensor is an electronic device that cannot be disposed of together with domestic waste. Observe all relevant national regulations and dispose of the unit via appropriate channels. Local and currently valid legislation applies accordingly.

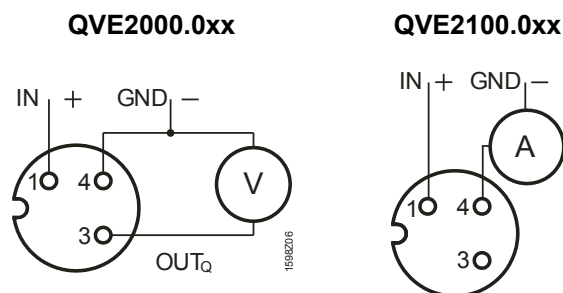
## Technical data

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Product data	Nominal width and measuring range	See "Type summary"
General function data	Measuring principle	Vortex
	Sensing element	Piezo-ceramic sensor element
	Measuring accuracy	
	at < 50% FS (water)	< 1% FS (Full Scale)
	at > 50% FS (water)	< 2% measured value
	Dynamic response:	
	Response time	< 500 ms
Switch-on delay	< 2 s	
	Flow media	Heating water with standard additives Potable water (hot / cold)
	Admissible medium temperature	Non-freezing ... +100 °C (short-term to +125 °C, < 4 bar)
	Max. pressure at medium temperature during life	12 bar at +40 °C 6 bar at +100 °C
	Electrical data	Types with voltage output
Types with current output		Supply: DC 18...33 V (for loads up to 500 Ω) Output: DC 4...20 mA (loads up to 500 Ω)
Connections	Electrical connection	Straight, 3-pin plug M12x1 with 2 m cable
	External thread on measuring pipe	See Dimensions

Degree of protection	Housing Protection class	IP 65 as per IEC 60529, mounted and screwed III
Environmental conditions	Permitted ambient temperature Transport and storage Operation	 -15...+85 °C -30...+85 °C
Environmental compatibility	The product environmental declaration CE1E1597en contains data on environ- mentally compatible product design and assessments (RoHS compliance, materi- als composition, packaging, environmental benefit, disposal)	ISO 14001 (environment) ISO 9001 (quality) SN 36350 (environmentally comp. products) RL 2002/95/EC (RoHS)
Standards, guidelines	Electro-magnetic compatibility for electrica measuring, control and laboratory de- vices <b>CE</b> - Conformity as per EMC directive	EN 61326-2-3 2004/108/EC
Materials	Housing under pressure Sealing material	Plastic PA6T / 6I EPDM ethylene-propylene-rubber (peroxide linked)
Dimensions (weight)	Sensor Including packaging	ETFE See Dimensions

## Device connection

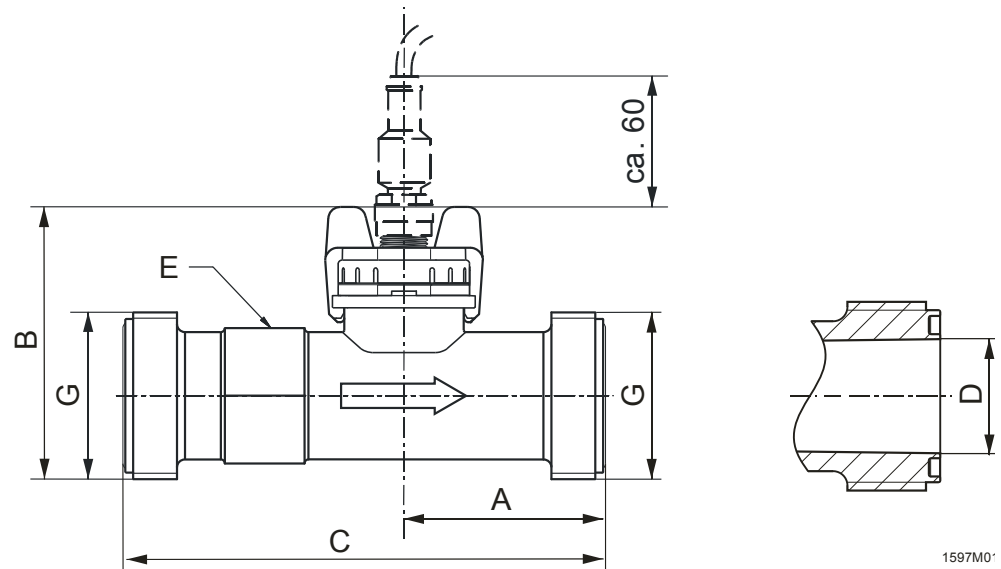


### Pin assignment

Plug pin	Wire color
1	brown
3	blue
4	black

## Dimensions

Dimensions in mm



1597M0

Type (ASN)	Nom. width dia.	A [mm]	B [mm]	C [mm]	D [mm] Ø	E [mm]	Thread G [inch]	Weight [g]
QVE2x00.010	DN 10	35	41	81	12	∅ 19	G½	57
QVE2x00.015	DN 15	36.6	43	87	16	∅ 22	G¾	68
QVE2x00.020	DN 20	36.6	45	105	20	∅ 27	G1	92
QVE2x00.025	DN 25	50	47	120	26	∅ 34	G1¼	100