Flow switch

QVE1900

for liquids for piping DN 32…200

Use

In HVACs plants to monitor the flow of fluids in hydraulic systems, especially in refrigeration, heat pump and heating plants, e.g. for use with condensers, boilers, heat exchangers, etc.

Ordering

When ordering, please provide the name and product number:
flow switch **QVE1900**

Mode of operation

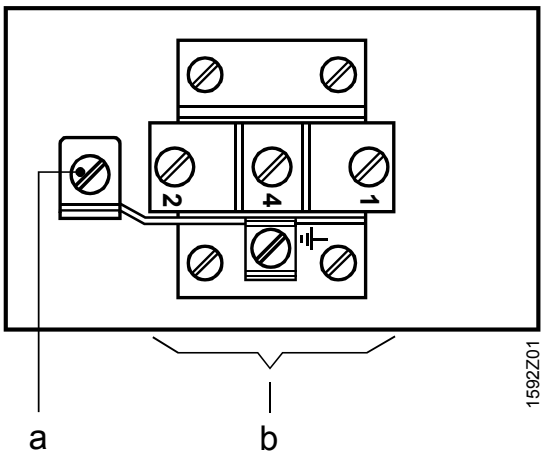
The unit detects the flow of the medium to be monitored by means of a paddle. If the flow velocity in the piping falls below the adjusted switch-off value, the paddle actuates a microswitch with a potential-free contact (S.P.D.T.). In that case, contact 1–4 closes. When the flow velocity reaches the switch-on value again, contact 1–2 closes.
The switching point is adjustable (see also "Notes“).

Mechanical design

The unit comprises a base with attached screw-in body R1" and cover.
The base houses the microswitch, transfer lever with adjusting screw (for switch-on/switch-off point), a paddle holder and an opening for the cable entry. The paddle holder is supplied with three detachable paddles of different lengths. A fourth paddle is enclosed.

The cover is secured to the base with two screws.

Setting element and connection terminals



Legend:

a Adjusting screw for switch-on/off values
b Connection terminals

The unit is supplied with the switch-on/off values set to the minimum (See the next section "Notes“)

Notes

Engineering

- On site, a T-junction R1" per EN DIN 10241 required (steel fittings with threads) and EN DIN 10242 (threaded fitting from malleable casting) required
- All dimensions and data provided in the table of switching values are based on water at 20 °C, the use of T-junctions and **horizontal** piping
- Before and after the mounting location of the flow switch, a smoothing path of at least 10 times or 5 times the nominal pipe diameter required

Fitting

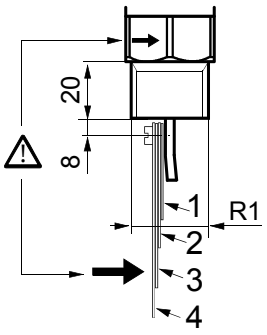
- Mount the enclosed cable gland and fit the T-junction R1" on-site prior to mounting the device
- Insert vertically in the horizontal piping
- Note the flow direction during installation (the screw-in body R1" has an arrow)
- For reasons of stability, the short paddles may not be removed with the larger pipe diameters

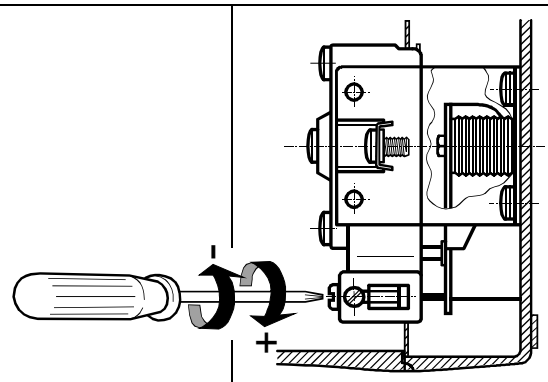
Installation

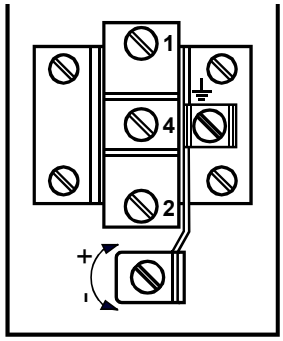
- Observe all local regulations from the electrical utilities or waterworks as applicable
- Allow for an extra loop of the connecting cable to ensure the switching value can be adjusted

Commissioning

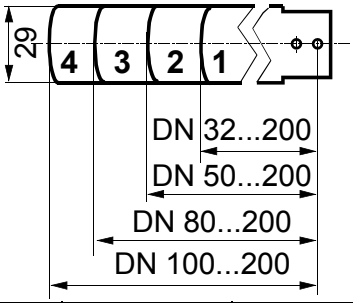
- A higher switch-off value can be set by turning the adjusting screw for the switch-on/off value clockwise
- When mounting the flow switch in vertical piping, you must compensate for the weight of the paddles on the adjusting screw for the switch-on/off values (Orientation not recommended, see fitting instructions).

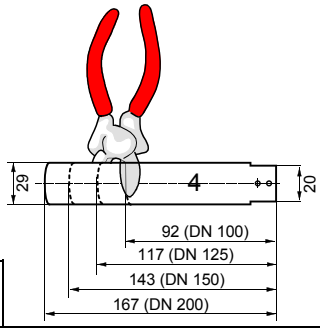


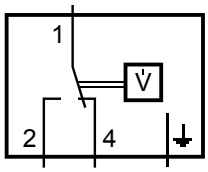


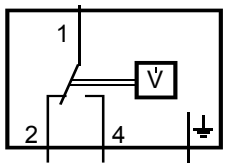


Switching point setting ranges









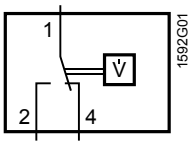
DN	*(mm)*	No.		*Qmax.(m³/h)*	− *m³/h* +		− *m³/h* +	
32	29 x 34	1		3.6	**≤0,8**	≤2.8	**≥1.3**	≥3.0
40	29 x 34	1		4.8	**≤1,1**	≤3.7	**≥1.7**	≥4.0
50	29 x 60	1+2		7.3	**≤2,2**	≤5.7	**≥3.1**	≥6.1
65	29 x 60	1+2		8.4	**≤2,7**	≤6.5	**≥4.0**	≥7.0
80	29 x 89	1+2+3		13.7	**≤4,3**	≤10.7	**≥6.2**	≥11.4
100	29 x 92	1+2+3+4	4 / 92 mm	22.1	**≤6,1**	≤17.3	**≥8.0**	≥18.4
125	29 x 117	1+2+3+4	4 / 117 mm	32.2	**≤9,3**	≤25.2	**≥12.9**	≥26.8
150	29 x 143	1+2+3+4	4 / 143 mm	39.2	**≤12,3**	≤30.6	**≥16.8**	≥32.7
200	29 x 167	1+2+3+4		113	**≤38,6**	≤90.8	**≥46.1**	≥94.2

Technical data

Functional data	Field of use	
	Suitable media	Water and antifreeze solutions (not suitable for ammonia)
	Piping diameter	DN 32…200
	Type of switch	Microswitch with single-pole changeover, potential free
	Contact rating	AC 250 V, 15 (8) A
	Adjustment of switching point	manual, supplied with minimum switch-on/off values
	Setting range	Refer to switching value table
	Perm. medium temperature	−20…+120 °C (medium must be antifreeze)
	Perm. operating pressure	PN 10
Protective data	Degree of protection	IP 65 per EN 60 529
	Safety class	I per EN 60 730

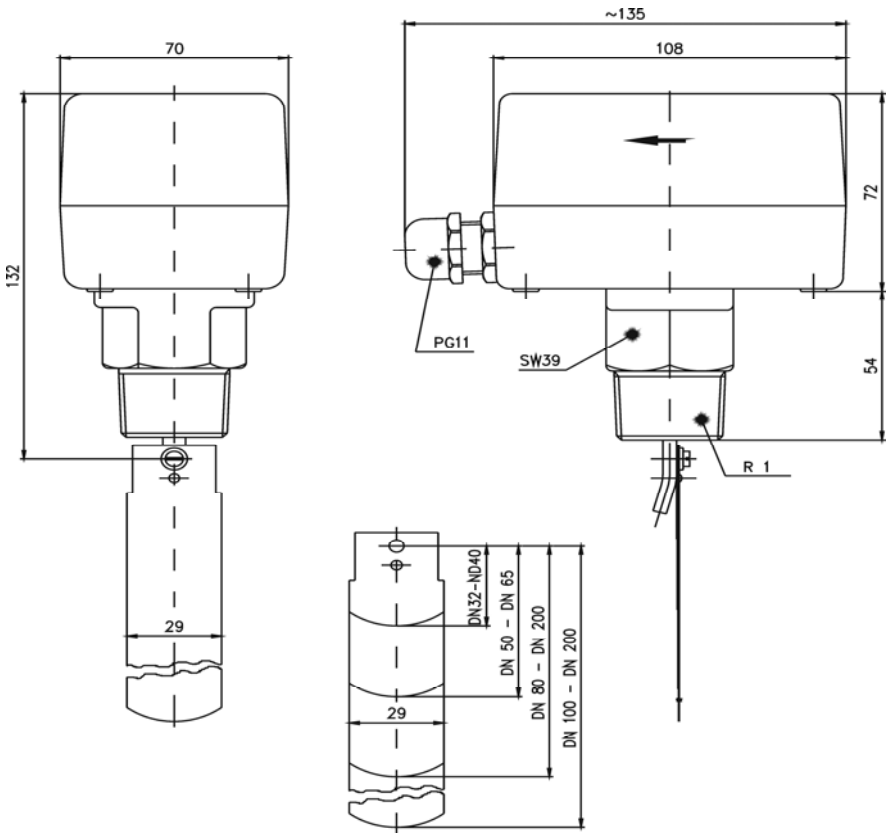
Environmental conditions	General environmental conditions	
	Operation and storage	−20…+85 °C
Norms and standards	CE conformity to	
	Low voltage directive	2006 / 95 / EEC
	Product norm	EN 60335-1
Materials / colors	Housing base	Bayblend T85 / color RAL 7015
	Cover	ABS / color RAL 5007
	Screw-in body R1"	Brass
	Paddle	High-grade steel (V2A)
	Flow switch, overall	Silicon free
Dimensions (weight)	Without packaging	0.765 kg

Internal diagram



1–2 Flow velocity ≥ Switch-on value
1–4 No flow or flow velocity has fallen below the adjusted switch-off value

Dimensions



Dimensions in mm