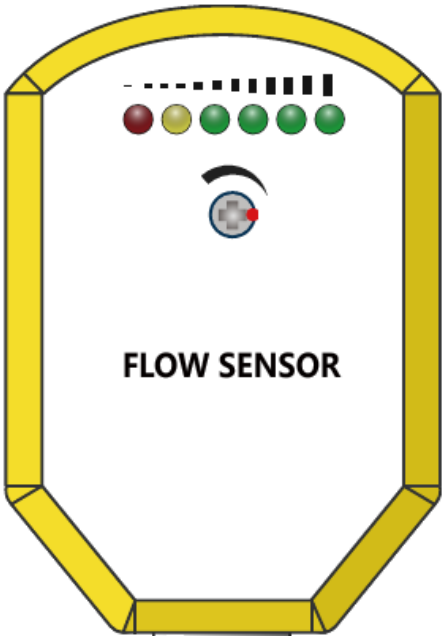
OCTOGON

MANUAL

QSKA

THERMAL FLOW SWITCH

Installation and user manual



Document	Version	Date	Applies to
Installation and user manual	V00x	11/2026	QSKA, all process connections, outputs and versions

This manual describes the QSKA calorimetric flow switch with plastic housing (PBT) and LED row: safety, working principle, technical data, dimensions, electrical connection, installation and setting the switching point.

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1 About this manual

Read this manual before installing the switch and keep it available for later use. Technical data, dimensions and order codes in this manual are those of the QSKA datasheet.

1.1 Notices

Notice	Meaning
Warning	Risk of injury or of damage to property if the instruction is not followed.
Important	Pay particular attention to the following instruction.
Note	Further information.

1.2 Versions covered

Feature	Versions
Process connection	G1/2 male thread · G1/4 male thread · R1/2 male thread · R1/4 male thread · M18 × 1.5 female thread, for use with the mounting accessories
Supply	24 Vdc ± 20 % · 230 Vac ± 15 %
Output	PNP · NPN · relay
Electrical connection	M12 × 1 plug, standard cable 2 m PVC · 2 m of cable direct
Probe length	30 mm of thread, for DN32 and below · 50 mm including the thread, for DN40 and above
Basic type	FS100

2 Safety

2.1 General

– Before installing the device, read this manual to make sure that the product is suitable for your application without any restriction.
– Failure to follow the operating instructions or the technical data may result in personal injury or damage to property.
– In all applications, check that the materials of the product are compatible with the medium.

– Use the device correctly so that it operates stably in the long term and the medium does not damage the wetted parts of the product.

Important The operator is responsible for deciding whether the sensor is suitable for the application and for its proper use.

2.2 Electrical safety

Warning The product must be wired by a qualified electrician in compliance with the relevant national and international regulations for the installation of electrical equipment. The supply voltage must comply with EN 50178, SELV, PELV. Cut off the power supply before wiring.

2.3 Pressure

Warning Before installing and removing the switch, make sure that the system is not under pressure.

3 Product description

3.1 Working principle

The QSKA works on the thermal (calorimetric) principle and monitors whether the medium in the system flows normally. A heated and an unheated resistor sit in one sealed probe; the flowing medium carries heat away from the heated resistor, and the difference between the two is the measure of the flow velocity. The signal is amplified by a low-drift amplifier, converted by an A/D converter and processed by a microprocessor, which controls the switching output. The switch protects equipment against damage caused by an interruption of the flow or a too low flow. The setting is a velocity, not a flow rate.

3.2 Applications

Hydropower, water supply, petroleum and chemical industry, machinery, automation systems, hydraulics and other industries in which the flow of a medium is monitored and controlled.

3.3 Technical data

Item	Value
Measuring principle	Calorimetric — a heated and an unheated resistor in one sealed probe, the difference between them the measure
Setting range	1 … 150 cm/s water · 3 … 300 cm/s oil · 20 … 2000 cm/s air. These are velocities, not flows
Setting	By potentiometer under a protective screw, 3 mm slotted screwdriver
Response time	1 … 13 s, typically 2 s · 8 s to initialise
Media	Water, cutting fluid, lubricating oil and air · pump dry-running protection
Probe	Stainless steel · housing PBT · weight 0.4 kg
Process connection	G1/2 or G1/4 male · R1/2 or R1/4 male · M18 × 1.5 female
Probe length	30 mm for DN32 and below · 50 mm for DN40 and above
Pressure range	100 bar
Medium temperature	-20 … +80 °C · ambient the same · storage -20 … +100 °C · temperature gradient ≤ 4 °C/s
Protection grade	IP67
Supply voltage	24 Vdc ± 20 % or 230 Vac ± 15 %
No-load current	≤ 80 mA
Switching current	≤ 400 mA PNP or NPN · ≤ 4 A relay
Protection	Reverse polarity, short circuit and overload
Connection	M12 × 1 plug, standard cable 2 m PVC · or 2 m of cable direct
Output	PNP · NPN · relay, normally open and normally closed (SPDT) - terminals see chapter 5

3.4 LED indication

LEDs	Meaning
LED row	Six LEDs, one red, one yellow, four green
Red	No flow, or flow below the set value — the switch has released
Yellow	The flow is at the set value
Green	Above the set value; the more green lamps, the higher the velocity

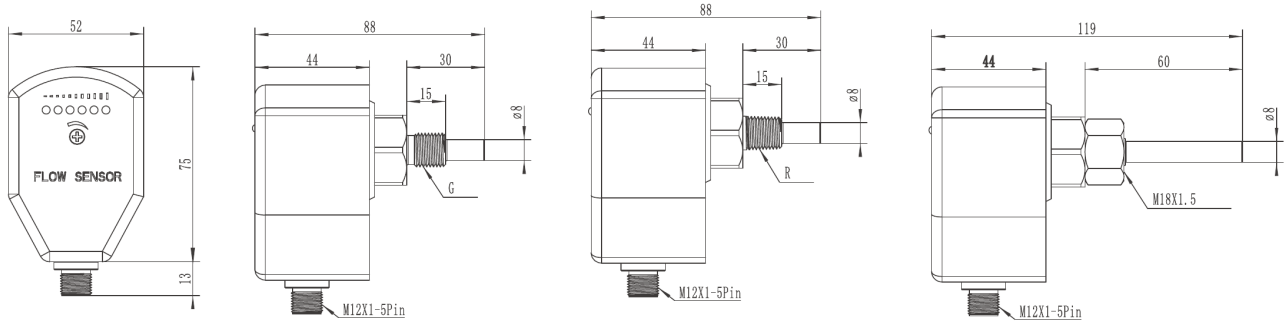
Under normal flow conditions, three green LEDs are recommended (chapter 7).

3.5 Order code

Field	Code	Meaning
1 Series	QSKA	QSKA electronic flow switch
2 Connection	G12M · G14M	G1/2 male thread · G1/4 male thread
	R12M · R14M	R1/2 male thread · R1/4 male thread
	M18K	M18 × 1.5 female thread, for use with the mounting accessories
3 Supply	DC · AC	24 Vdc ± 20 % · 230 Vac ± 15 %
4 Output	P · N · C	PNP · NPN · relay
5 Connection	M · Z	M12 × 1 plug, standard cable 2 m PVC · 2 m of cable direct
6 Probe length	—	30 mm of thread, for DN32 and below
	50	50 mm including the thread, for DN40 and above

Example: QSKA-G12M-DC-C-M. The M18 version takes no probe-length field.

4 Dimensions

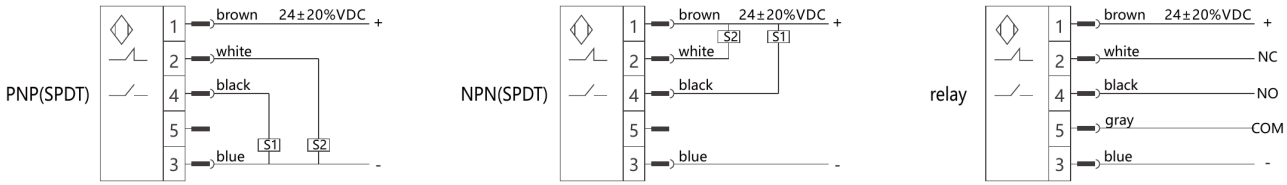


Front view and the connection versions G male, R male and M18 × 1.5 female. Dimensions in mm.

Connection	Overall	Housing	Stem	Thread	Probe Ø
G1/2 · G1/4 male	88	44	30	15	8
R1/2 · R1/4 male	88	44	30	15	8
M18 × 1.5 female	119	44	60	—	8

5 Electrical connection

Warning Cut off the power supply before wiring (section 2.2).



M12 × 1 plug, 5-pin: PNP (SPDT), NPN (SPDT) and relay. S1, S2 = loads.

Pin	Wire	PNP / NPN version	Relay version
1	brown	supply + (24 V DC ± 20 %)	supply + (24 V DC ± 20 %)
2	white	output S2 (normally closed contact)	NC (break contact)
3	blue	supply –	supply –
4	black	output S1 (normally open contact)	NO (make contact)
5	grey	not connected	COM (common)

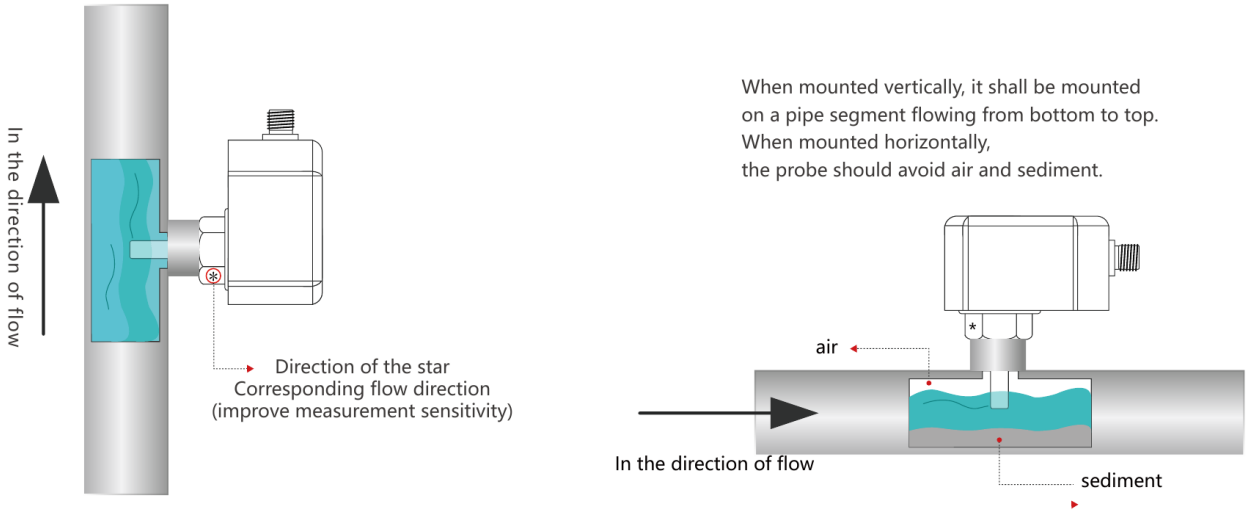
- PNP: connect the loads between the outputs (pins 2, 4) and the negative supply (pin 3).
- NPN: connect the loads between the positive supply (pin 1) and the outputs (pins 2, 4).
- Wire the product according to the diagram of the ordered output version.

Important The figure and the table apply to the 24 V DC version (supply code DC). No wiring diagram is available for the 230 V AC version (supply code AC); please contact octogon before connecting an AC version.

6 Installation

Warning Before installing and removing the switch, make sure that the system is not under pressure.

6.1 Mounting position



Left: vertical mounting, flow from bottom to top; the star points in the direction of flow. Right: horizontal mounting, the probe clear of air and sediment.

- When installed vertically, install the switch on a pipe section in which the medium flows from bottom to top.
- When installed horizontally, keep the probe clear of air (top of the pipe) and sediment (bottom of the pipe).
- The star marked on the probe points in the direction of flow (better measuring sensitivity).
- Provide a straight pipe run of more than 5 × DN upstream and downstream of the switch.
- The probe must not touch the pipe wall.
- Insert the probe so that it is in full contact with the flowing medium by more than 5 mm. Probe length: see the order code (section 3.5).

6.2 Mounting

– Connect the switch to the selected process connection.
– Recommended tightening torque: 25 to 35 N·m.
– In critical applications, such as severe vibration or shock, the connection can be decoupled mechanically by micro-hoses.

6.3 Mounting accessories

Welded bases, adapters from M18 × 1.5 female to G1/4 or G1/2 male (probe insertion 15 mm, 304 stainless or brass), tees with an M18 × 1.5 female connection and tees in PP and stainless steel are available as accessories. The M18 parts serve the M18 version only, the others the male-thread versions only. The conventional stainless tees are rated 40 bar and the high-pressure stainless tees 200 bar; the switch itself is rated 100 bar. M12 × 1 connecting cables (5-pin, PUR or PVC, 2, 5 or 10 m, straight or angled) and self-wiring sockets are available as electrical accessories; the factory standard is 2 m of PVC cable. Order numbers: see the datasheet.

7 Setting the switching point

The switching point (switch sensitivity) is set with a potentiometer behind a protective screw on the front. Remove the protective screw before the adjustment; the factory standard tool is a 3 mm flat-head screwdriver.

1. After switching on the power, check the switch; all LEDs reset after the self-test.
2. Remove the dust-proof protective screw with the screwdriver.
3. Turn on the flow and check the LED status.
4. Insert the screwdriver into the setting hole and adjust the switching value according to the actual needs. Under normal flow conditions, three green LEDs are recommended.
5. Turn the flow off and on to make sure that the switch signal output works correctly.