OCTOGON

MANUAL

QSKE

FLOW SWITCH WITH A DIGITAL DISPLAY

Installation and user manual



Document	Version	Date	Applies to
Installation and user manual	V00x	11/2026	QSKE, all process connections and probe lengths

This manual describes the QSKE thermal flow switch with a three-digit display: safety, technical data, dimensions, electrical connection, installation, calibration and the settings in the menus 001 and 006, maintenance and cleaning.

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1 About this manual

Read this manual before installing the switch and keep it available for later use. Values and order codes refer to the QSKE order code (section 3.4).

1.1 Notices

The severity of a potential risk is indicated by the following signal words:

Notice	Meaning
Danger	An imminent danger to the user. Failure to comply may result in fatal injury.
Warning	An identifiable hazard. Failure to comply may result in fatal injury and in damage to equipment or plant parts.
Caution	A danger. Failure to comply may result in minor injury and in material damage to the switch and/or the plant.
Important	Information that is important to the user.

1.2 Versions covered

Feature	Versions
Process connection	G1/2 or G1/4 male · R1/2 or R1/4 male · M18 × 1.5 female · clamp Ø25.4 mm (1/2 inch) or Ø50.5 mm (1.5 inch), ISO 2852:1993
Probe length	30 · 50 · 60 · 70 · 80 · 100 mm (30 mm not with the M18 version)
Output	one switch output, PNP or NPN, normally open or normally closed, all set at the device

2 Safety

2.1 Intended use

Danger The switch may only be used within the specified application range. The temperature must be within the permissible range. Do not exceed the rated pressure and the rated electrical load. Assembly, commissioning and operation must be carried out in accordance with the applicable national and local safety regulations.

2.2 Disposal

Switches must be handled in accordance with the national or local regulations for electrical and electronic equipment. Switches must not be disposed of with household waste.

3 Product description

3.1 Working principle

The QSKE is a thermal flow switch for water, oil and air. The signal is conditioned and put out as a switching signal. In a still medium the heat stays at the probe tip; a flowing medium carries the heat away. The three-digit display shows the flow as a percentage.

3.2 Device overview

Part	Description
Display	three red digits, high brightness, reading the flow in per cent
Keys	two keys, marked – (reduce) and + (increase)
Housing	engineering plastic, turns through 330°, so that the plug can be aimed after installation
Plug	M12 × 1
Probe and process connection	304 stainless steel

3.3 Technical data

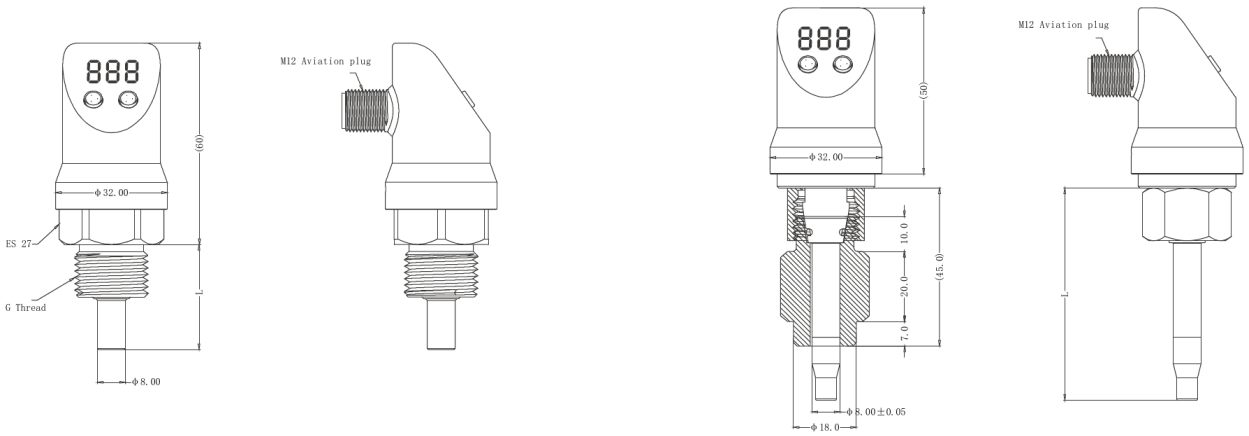
Item	Value
Measuring principle	thermal
Media	water, oil and air
Display	three-digit LED, red, reading a percentage
Setting	two keys on the device, marked – and +
Response time	1 … 13 s
Materials	probe and process connection 304 stainless steel · housing engineering plastic, moulded in one piece
Process connection	G1/2 or G1/4 male · R1/2 or R1/4 male · M18 × 1.5 female · clamp 25.4 mm (1/2 inch) or 50.5 mm (1.5 inch), to ISO 2852:1993
Probe length	30 · 50 · 60 · 70 · 80 · 100 mm · 30 mm not with the M18 version
Medium temperature	–20 … +85 °C
Ambient temperature	–20 … +80 °C
Storage temperature	–30 … +80 °C
Protection grade	IP67
Supply voltage	12 … 30 V DC
No-load current	≤ 30 mA at 24 V DC
Output	one switch output on pin 4; PNP is the factory setting, NPN can be set; normally open or normally closed can be set as well
Switching load	< 200 mA
Protection	reverse polarity, overload and short circuit
Electrical connection	M12 × 1 plug

3.4 Order code

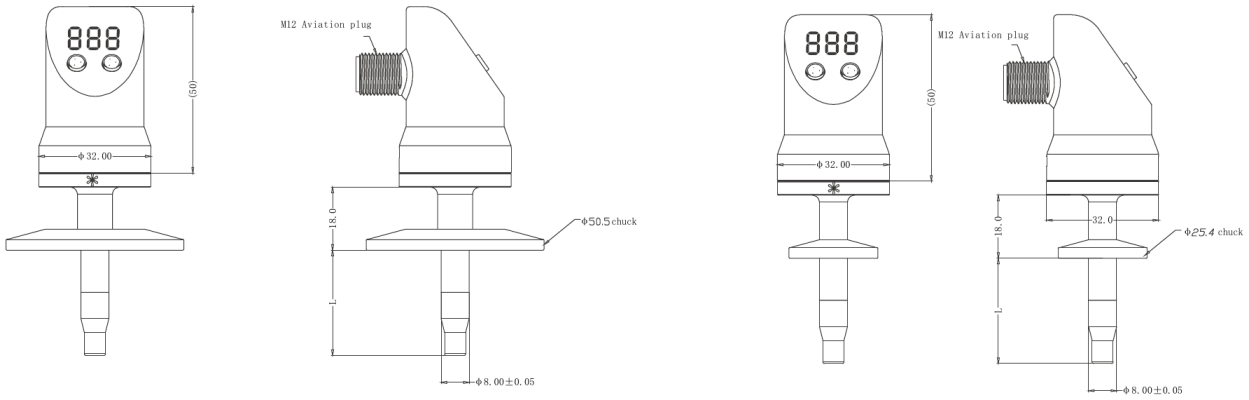
Field	Code	Meaning
1 Series	QSKE	electronic flow switch with a display
2 Connection	G12M · G14M	G1/2 male thread · G1/4 male thread
	R12M · R14M	R1/2 male thread · R1/4 male thread
	M18K	M18 × 1.5 female thread, for use with the mounting accessories
	H25 · H50	clamp Ø25.4 mm (1/2 inch) · Ø50.5 mm (1.5 inch), ISO 2852:1993
3 Probe length	L030	30 mm, not with M18K
	L050	50 mm
	L060 · L070	60 mm, M18K from DN32 down · 70 mm, M18K from DN40 up
	L080 · L100	80 mm, M18K from DN50 up · 100 mm, M18K from DN80 up
4 Output	—	one switch output

PNP or NPN and normally open or normally closed are set at the device (chapter 7); PNP is the factory setting.

4 Dimensions



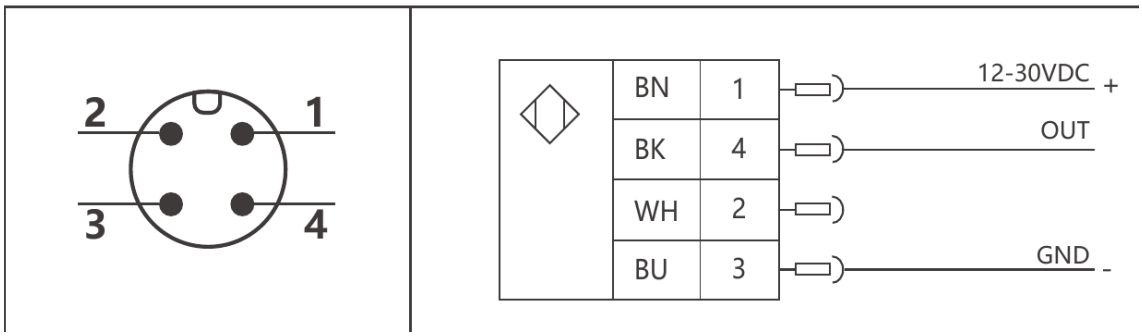
The male-thread version on the left, the M18 × 1.5 female version on the right. Dimensions in mm.



The two clamp versions, Ø50.5 mm and Ø25.4 mm, to ISO 2852:1993.

Feature	mm	Note
Overall height, male thread	(60)	reference dimension
Overall height, other versions	(50)	reference dimension
Height over the clamp	(45.0)	reference dimension
Housing diameter	Ø32.00	the same on all four versions
Across flats	27	marked ES 27 on the male-thread version
Thread length	20.0	male-thread version
Sealing face	10.0 · 7.0	M18 version, two steps
Shoulder diameter	Ø18.0	M18 version
Clamp collar	18.0 · 32.0	the two clamp versions
Clamp diameter	Ø25.4 · Ø50.5	1/2 inch and 1.5 inch, ISO 2852:1993
Probe diameter	Ø8.00 ± 0.05	
Probe length L	30 · 50 · 60 · 70 · 80 · 100	see the order code

5 Electrical connection



M12 × 1 plug seen from the front (left) and connection diagram (right).

Pin	Wire colour	Function
1	brown (BN)	supply 12 … 30 V DC (+)
3	blue (BU)	supply (–), GND
4	black (BK)	switch output SP1 (OUT): PNP (factory setting) or NPN

PNP or NPN is selected in menu 006 (parameter **P-n**), normally open or normally closed in menu 001 (parameter **out**).

5.1 Connecting cables

M12 × 1 connecting cables, 4-pin, PUR or PVC, 2 · 5 · 10 m, straight or angled, and a self-wiring 4-pin socket (Pg7 / Pg9 gland) are available as accessories. The factory standard is a 2 m PVC cable. Order numbers: see the datasheet.

6 Installation

6.1 Mounting position

- When installed vertically, place the switch on a pipe section in which the medium flows from bottom to top.
- When installed horizontally, keep the probe away from air and sediment.
- Provide a straight pipe run of more than 5 × DN upstream and downstream of the switch.
- The probe must not come into contact with the pipe wall.
- Insert the probe into the pipe so that it is in full contact with the flowing medium by more than 5 mm.
- Male-thread versions: a probe length of 30 mm is suitable for pipes up to DN32, a probe length of 50 mm for pipes up to DN50. For the M18K version see the probe lengths in the order code (section 3.4).

6.2 Mounting accessories

Welded bases (M18 × 1.5 female, G1/4, G1/2, G1/2 high pressure, Rc1/4, Rc1/2, M12 × 1), adapters M18 female to G1/4 or G1/2 male (probe insertion 15 mm, 304 stainless or brass), tees with an M18 female connection and tees in PP and stainless steel are available as accessories. The welded bases and the M18 tees are tied to one thread family: the M18 parts serve the M18K version only, the others the male-thread versions only. The conventional stainless tees are rated 40 bar, the high-pressure stainless tees 200 bar. Order numbers: see the datasheet.

7 Operation and settings

7.1 Display and keys

Element	Function
Display	flow percentage
Key –	reduce key; zero-point calibration
Key +	increase key; full-scale calibration

7.2 Quick calibration

Calibration	Procedure
Zero-point calibration	Press and hold the – key until **LLL** is displayed. The zero-point calibration is completed.
Full-scale calibration	With the medium flowing: press and hold the + key until **HHH** is displayed. The calibration is completed.

7.3 Menu 001 - switching point and output

Important Menu settings must be made by qualified personnel only.

- In the main display, press – and + together for about 3 seconds: **LoK** is displayed.
- Select **001** with + or –.
- Press – and + together to open the menu; move between the parameters with + or –.
- Press – and + together to open a parameter value and to return to the parameter.
- Select **End** and press – and + together to save and return to the main display.

Parameter	Meaning
SP1	switch alarm value (switching point); factory setting 50 % of the range
rP1	switch reset value; factory setting SP1 – 5 %
dS1	activation delay of OUT; factory setting 0 s
dr1	shutdown delay of OUT; factory setting 0 s
out	switch output signal: NO normally open, NC normally closed (the display shows **no** for normally open)
End	confirm, save and exit

7.4 Menu 006 - display, filter and output type

Access as for menu 001 (section 7.3), but select **006**.

Parameter	Meaning
oSt	display value compensation, default 0; increasing or decreasing the value increases or decreases the displayed value by the same amount
FLt	filter coefficient, adjustable from 1 to 25; default 5
SPL	reaction rate of the displayed value, increase or decrease
rES	factory data reset
P-n	PNP/NPN switchover; factory setting **PnP**
End	confirm, save and exit

8 Maintenance, cleaning and removal

8.1 Maintenance

The switch does not require maintenance.

Warning Periodically check whether the switch is working properly. If the switch does not work properly, stop the operation immediately.

8.2 Cleaning

Caution Improper cleaning agents may damage the switch. The following cleaning agents can be used on polycarbonate: mild soap or detergent, isopropyl alcohol. Rinse with water immediately after cleaning; do not leave cleaner on the surface of the product. Do not clean the product in high heat or in direct sunlight.

The following cleaning agents are known to affect the integrity of polycarbonate components and must not be used:

- ZEP Fast 505, Pinesol, Formula 409
- halogenated solvents (benzene, gasoline, acetone or carbon tetrachloride)
- strong alkaline agents
- methyl ethyl ketone
- abrasive substances

8.3 Removal

Danger Only remove the switch when it is disconnected from all power (electrical, hydraulic/pneumatic). Disconnection of the switch from pressure and power supply must be performed by trained or instructed personnel in accordance with the state of the art.

Warning The surface of the housing may become very hot at high operating temperatures.