

Positive displacement flowmeter/ threshold detector



- Indication, monitoring, transmitting and On/Off control in one device
- Selectable outputs (transistor or relay)
- Automatic calibration: Teach-In
- Process value output: 4... 20 mA

Type 8072 can be combined with...



Type 8802-YG-I

(2300 + 8692)
ELEMENT Control valve



Type 8792

Positioner
SideControl



Type 8644-P AirLINE

Valve island with
electronic I/O

This positive displacement flowmeter/threshold detector with display is designed for use in slightly viscous fluid like glue, honey or oil and specially to switch a valve and to establish a monitoring system or an On/Off control loop. The switching points can be configured with the 3-keys below the display.

The 8072 is available with On/Off output, or with process value outputs.

General data	
Compatibility	With fittings S070 (see corresponding data sheet)
Materials	Housing, cover Front panel folio / Screws Cable plug, connector M12 Wetted parts materials Fitting Rotor Shaft / Seal
	PC, glass fibre reinforced Polyester / Stainless steel PA Aluminium, stainless steel (316F/1.4401) PPS, Aluminium, stainless steel (316F/1.4401) Stainless steel / FKM or FEP/PTFE
Display	8-digit LCD with backlighting
Electrical connections	Cable plug acc. to EN 175301-803 Free positionable male M12 connector, 5 pins or male M12 connector, 8 pins
Voltage supply cable	0.5 mm ² max. cross section; max. 100 m length, shielded

Complete device data (fitting S070 + electronic module SE32)	
Pipe diameter	DN15 to DN100
Measuring range	2 to 1200 l/min (0.26 to 320 gpm) for viscosity > 5 mPa.s 3 to 616 l/min (0.78 to 320 gpm) for viscosity < 5 mPa.s
Medium temperature	Fitting in aluminium 0 to 80°C (32°F to 176°F) Fitting in stainless steel 0 to 100°C (32°F to 212°F)
Fluid pressure max.	55 bar (798 PSI) (threaded process connection) 55 bar (798 PSI) ¹⁾ 18 bar (261 PSI) / 12 bar (174 PSI) / 10 bar (145 PSI)
Viscosity	1 Pa.s max. (higher on request)
Accuracy²⁾	±1% of Reading
Operating mode	Threshold: window or hysteresis
Repeatability²⁾	≤ 0.03% of Reading

¹⁾ or in accordance to the value of the used flanges

²⁾ Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20°C (68°F), applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.

Electrical data	
Operating voltage	12 - 36 V DC \pm 10%, filtered and regulated
Reversed polarity of DC	Protected
Current consumption	\leq 90 mA (without load)
Outputs	
Transistor	NPN and/or PNP (selectable), open collector, max. 700 mA, 500 mA max. per transistor if both transistor outputs are wired, 0 to 300 Hz NPN-output: 0.2 - 36 V DC PNP-output: Power supply protected against short circuit.
Relay	3 A/250 V AC or 3 A/30 V DC; [3 A/48 V AC or 3 A/30 V DC] ²⁾ .
Process value	4... 20 mA, galvanic insulation Loop resistance: 1300 Ω at 36 V DC, 1000 Ω at 30 V DC, 700 Ω at 24 V DC, 450 Ω at 18 V DC, 200 Ω at 12 V DC
Environment	
Ambient temperature	0 to +60°C (14°F to 140°F) (operating and storage)
Relative humidity	\leq 80%, without condensation
Standards, directives and approvals	
Protection class	IP65 with connector mounted and tightened correctly
Standard, directives	
EMC	EN 610006-2, 610006-3
Security	EN 61010-1
Pressure (Fitting S070, DN15 to DN100, in aluminium or stainless steel)	Complying with article 3 of Chap. 3 from 97/23/CE directive.* (without CE mark)
Vibration / Shock	EN 60068-2-6 / EN 60068-2-27
Approvals	
UL-Recognized for US and Canada 	UL61010-1 + CAN/CSA-C22 No.61010-1
Specific technical data of UL-recognized products for US and Canada	
Ambient temperature	0 to +40°C (32°F to 104°F)
Height above sea level	max. 2000 m
Intended for an inner pollution	Grade of pollution 2
Installation category	Category I

²⁾ if 4... 20 mA and relay

* For the 97/23/CE pressure directive, the device can only be used under following conditions (dependent on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, chap. 1.3.a	Forbidden
Fluid group 2, chap. 1.3.a	DN \leq 32 or DN > 32 and PN*DN \leq 1000
Fluid group 1, chap. 1.3.b	PN*DN \leq 2000
Fluid group 2, chap. 1.3.b	DN \leq 200

Operation and display

The device can be calibrated by means of the K-factor, or via the Teach-In function. User adjustments, such as engineering units, output, filter, bargraph are carried out on site.

► Indication in operating mode/Display

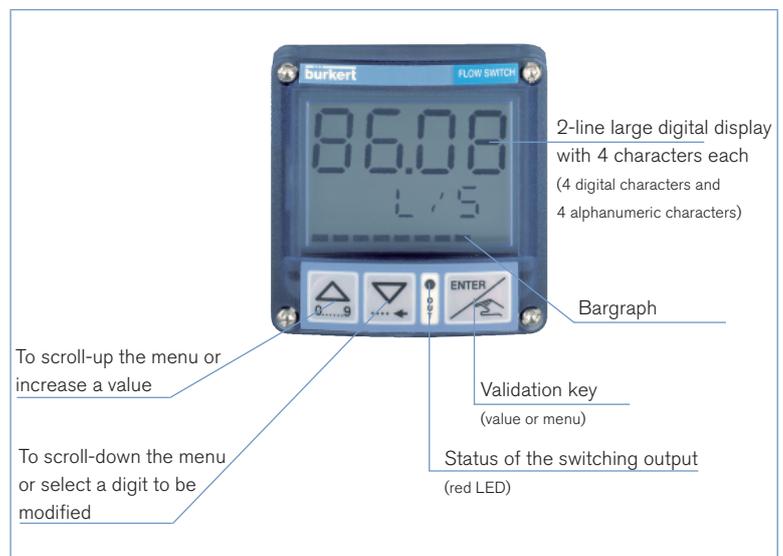
- measured flow
- high threshold value
- low threshold value

► Parameter definition

- engineering units (International measuring units)
- K-factor/Teach-In function
- selection of switching mode (window, hysteresis) (see main features)
- selection of threshold value (see main features)
- delay
- filter
- 10-segment bargraph (select min. and max. value)
- Password protects the access to the menu

► Test

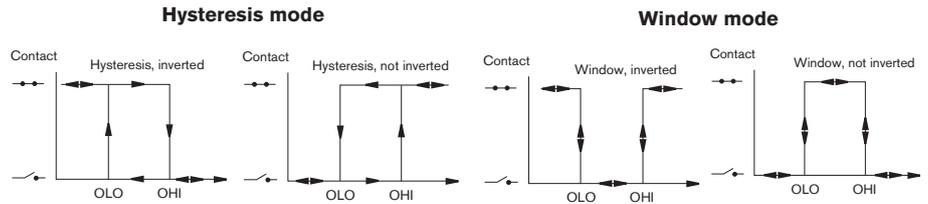
- switching threshold test with flow simulation
- Calibration of the 4... 20 mA current output



Main features

8072 with standard On/Off output

- 2 switching modes for the output, either hysteresis or window, inverted or not



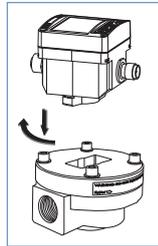
- Configurable delay before switching
- Possible outputs depending on the version: relay, transistor NPN, transistor PNP

8072 with current output for the measurement value

- 4... 20 mA output
- 4... 20 mA output + relay output

Design and principle of operation

The 8072 flowmeter/threshold detector is built up with an SE32 electronic module associated to a sensor fitting S070 with integrated measurement oval rotor. The output signal is provided via cable plug according to EN 175301-803 and/or a M12 multipin connector.



When liquid flows through the pipe, the rotor turns. This rotation produces a measuring frequency in the transducer. The frequency is proportional to the flow of the fluid.

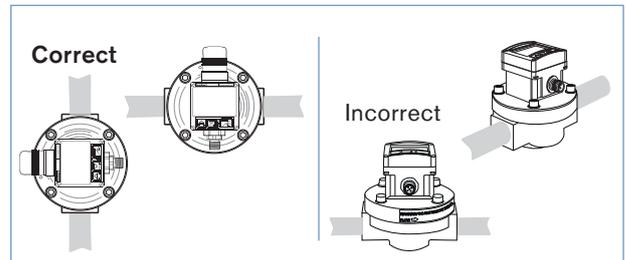
A conversion coefficient (K factor, available in the instruction manual of the sensor fitting S070), specific to each pipe (size and material) enables the conversion of this frequency into a flow rate. The mechanical connection of electronic and sensor is made by means of a Quarter-Turn.



Installation

The sensor fitting can be installed in any orientation as long as **the rotor shafts are always in a horizontal plane** (see figures to the right) and **the flow of the fluid is in the direction of the arrow marked on the body**.

The pipe must be filled with liquid and free from air bubbles. Avoid air purge of the system which would cause damages and to prevent damage from dirt or foreign matter, we strongly recommend the installation of a 250 µm strainer as close as possible to the inlet side of the meter.



Dimensions

DN	H
15	85
25	100
40	117
50	135
80	175
100	176

DN15	DN25	DN40	DN50	DN80
Threaded connection				
DN25	DN40	DN50	DN80	DN100
Flanged connection				

Electronics SE32

Ordering chart for flowmeter/threshold detector Type 8072

A flowmeter/threshold detector Type 8072 consists of:

- an electronic module SE32
- an INLINE sensor fitting S070 (DN15 - DN100 - Refer to corresponding data sheet)

Electronic module Type SE32 - for sensor fitting Type S070 (to be ordered separately)

Operating voltage	Outputs	Agreements	Electrical connection	Item no.
12-36 V DC	NPN	-	Cable plug EN 175301-803*	436 474
	PNP	-	Cable plug EN 175301-803*	434 871
	NPN and PNP	-	Free positionable male M12 connector, 5 pins	436 473
		UL-Recognized for US and Canada 	Free positionable male M12 connector, 5 pins	553 431
	Relay	-	Free positionable male M12 connector, 5 pins and cable plug EN 175301-803*	436 475
	4... 20 mA + relay	-	Male M12 connector, 8 pins and cable plug EN 175301-803*	560 547
	4... 20 mA + relay	-	Free positionable male M12 connector, 5 pins and cable plug EN 175301-803	560 402
	4... 20 mA	-	Free positionable male M12 connector, 5 pins	560 403

* Europe/Asia (G/Rc): M16x1.5 mm cable plug

USA/CDN (NPT): NPT1/2 cable plug

Ordering chart for accessories (to be ordered separately)

Description	Item no.
Female M12 connector, 5 pins, with plastic threaded locking ring	917 116
Female M12 connector, 5 pins, moulded on cable (2 m, shielded)	438 680
Female M12 connector, 8 pins, with plastic threaded locking ring	444 799
Female M12 connector, 8 pins, moulded on cable (2 m, shielded)	444 800
Cable plug EN 175301-803 with cable gland (Type 2508)	438 811
Cable plug EN 175301-803 with NPT1/2" reduction without cable gland (Type 2509)	162 673

Interconnection possibilities with other Bürkert products



Type 8802-GD-J -
(2301 + 8693)
ELEMENT Control valve
4 ... 20 mA output

Type 6212 -
Solenoid valve
Transistor output

Type 5281 -
Solenoid valve
Relay output

Type 8072 -
Flowmeter/threshold detector

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In case of special application conditions,
please consult for advice.

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