

## 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	
<b>Compatibility</b>	With fittings S070 (see corresponding data sheet)
<b>Materials</b>	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
<b>Display</b>	8-digit LCD with backlighting
<b>Electrical connections</b>	Cable plug acc. to EN 175301-803 Free positionable male M12 connector, 5 pins or male M12 connector, 8 pins
<b>Voltage supply cable</b>	0.5 mm <sup>2</sup> max. cross section; max. 100 m length, shielded

Complete device data (fitting S070 + electronic module SE32)	
<b>Pipe diameter</b>	DN15 to DN100
<b>Measuring range</b>	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
<b>Medium temperature</b>	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)
<b>Fluid pressure max.</b>	55 bar (798 PSI) (threaded process connection) 55 bar (798 PSI) <sup>1)</sup> 18 bar (261 PSI) / 12 bar (174 PSI) / 10 bar (145 PSI)
<b>Viscosity</b>	1 Pa.s max. (higher on request)
<b>Accuracy<sup>2)</sup></b>	±1% of Reading
<b>Operating mode</b>	Threshold: window or hysteresis
<b>Repeatability<sup>2)</sup></b>	≤ 0.03% of Reading

<sup>1)</sup> or in accordance to the value of the used flanges

<sup>2)</sup> 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	
<b>Operating voltage</b>	12 - 36 V DC $\pm 10\%$ , filtered and regulated
<b>Reversed polarity of DC</b>	Protected
<b>Current consumption</b>	$\leq 90$ mA (without load)
<b>Outputs</b>	
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] <sup>2)</sup> .
Process value	4... 20 mA, galvanic insulation Loop resistance: 1300 $\Omega$ at 36 V DC, 1000 $\Omega$ at 30 V DC, 700 $\Omega$ at 24 V DC, 450 $\Omega$ at 18 V DC, 200 $\Omega$ at 12 V DC
Environment	
<b>Ambient temperature</b>	0 to +60°C (14°F to 140°F) (operating and storage)
<b>Relative humidity</b>	$\leq 80\%$ , without condensation
Standards, directives and approvals	
<b>Protection class</b>	IP65 with connector mounted and tightened correctly
<b>Standard, directives</b>	
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
<b>Approvals</b>	
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	
<b>Ambient temperature</b>	0 to +40°C (32°F to 104°F)
<b>Height above sea level</b>	max. 2000 m
<b>Intended for an inner pollution</b>	Grade of pollution 2
<b>Installation category</b>	Category I

<sup>2)</sup> 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

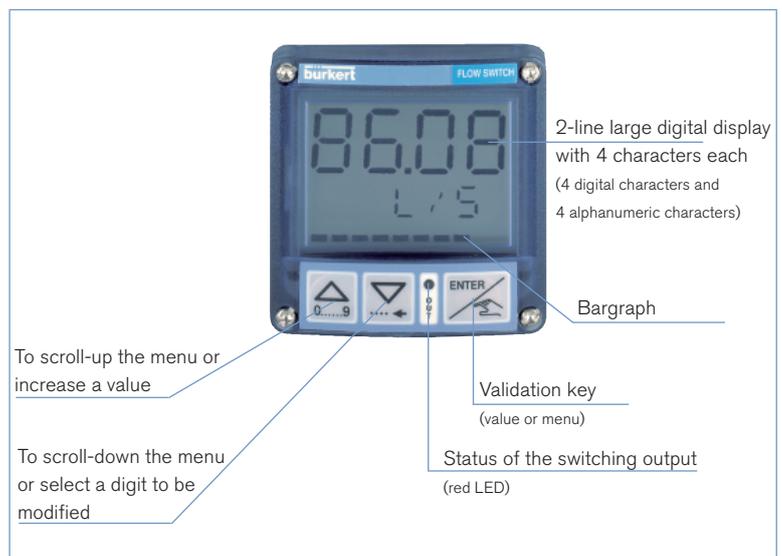
- measured flow
- high threshold value
- low threshold value

### ► 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

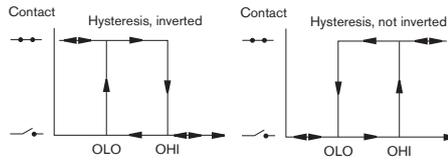


Main features

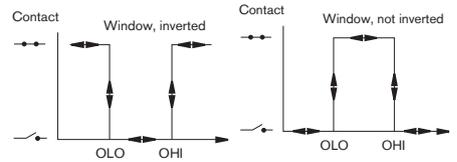
8072 with standard On/Off output

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

Hysteresis mode



Window mode



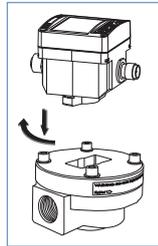
- Configurable delay before switching
- Possible outputs depending on the version: relay, transistor NPN, transistor PNP

8072 with current output for the measurement value

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

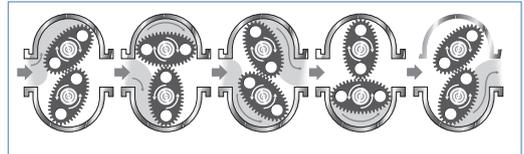
Design and principle of operation

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.

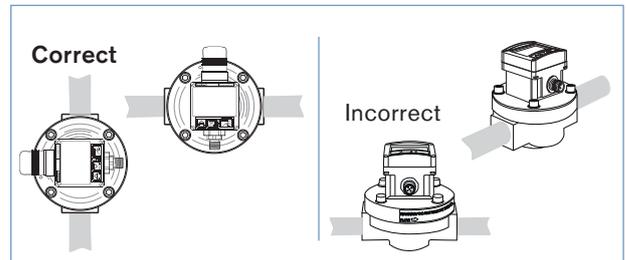
A conversion coefficient (K factor, available in the instruction manual of the sensor fitting S070), specific to each pipe (size and material) enables the conversion of this frequency into a flow rate. The mechanical connection of electronic and sensor is made by means of a Quarter-Turn.



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**  
 Dimensions: 94, 22, 50, 76, 67.5, 30, 54, 54, 30, 54, 54.  
 Connections: EN 175301-803, SW22, M12-5-pin, M12-8-pin.

## 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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