

## Positive displacement flowmeter for continuous flow measurement



- High accuracy
- Medium with high viscosity
- Mounting and dismounting of the electronics by a quarter-turn
- Connection to Bürkert devices in remote versions

Type 8070 can be combined with...



**Type 8025**

Flow transmitter  
remote version



**Type 8025 Konti-Dos**

Batch control  
system



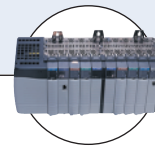
**Type 8611**

eControl  
Universal controller



**Type 2712 (8630)**

Continuous  
TopControl system



**PLC**

The positive displacement flowmeter for continuous flow measurement is especially designed for use in highly viscous fluid like glue, honey or oil.

It is made up of a compact sensor fitting (S070) with integrated oval rotor and an electronic module (SE30) with pulse signal (Hall transducer), quickly and easily connected together by a Quarter-Turn.

The Bürkert designed fitting system ensures simple installation of the devices into all pipes from DN15 to DN100.

The flowmeter produces frequency signal (pulse), proportional to the flow rate, which can easily be transmitted and processed by:

- a Bürkert remote transmitter (Type 8025/8032...)
- a batch control system 8025 Konti-Dos
- a PLC

### Technical data

#### General data

|                              |  |
|------------------------------|--|
| <b>Compatibility</b>         | with sensor fittings S070 (see corresponding data sheet)   |
| <b>Materials</b>             |  |
| Housing, cover               | PC   |
| Cable plug                   | PA   |
| Wetted parts materials       |  |
| Sensor fitting               | Aluminium, stainless steel (316F/1.4401)   |
| Rotor                        | PPS, aluminium, stainless steel (316F/1.4401)  |
| Shaft / Seal                 | Stainless steel / FKM or FEP/PTFE encapsulated   |
| <b>Electrical connection</b> | Cable plug EN 175301-803   |
| <b>Connection cable</b>      | max. 1.5 mm <sup>2</sup> cross section;<br>max. 50 m length, shielded (for pulse sensor version) |

#### Complete device data (sensor fitting + electronic module)

|                                |   |
|--------------------------------|---|
| <b>Pipe diameter</b>           | DN15 to DN100                                     |
| <b>Measuring range</b>         |   |
| Viscosity > 5 cps              | 1 to 1200 l/min (0.26 to 320 gpm)                 |
| Viscosity < 5 cps              | 3 to 616 l/min (0.78 to 320 gpm)                  |
| <b>Medium temperature max.</b> |   |
| Aluminium body                 | 80°C (176°F)                                      |
| Stainless steel body           | 100°C (212°F)                                     |
| <b>Fluid pressure max.</b>     |   |
| DN15                           | 55 bar (798.05 PSI) (threaded process connection) |
| DN25                           | 55 bar (798.05 PSI) <sup>1)</sup>                 |
| DN40 / DN50                    | 18 bar (261.18 PSI)                               |
| DN80                           | 12 bar (174.12 PSI)                               |
| DN100                          | 10 bar (145.1 PSI)                                |
| <b>Viscosity</b>               | 1000 cps. max (higher on request)                 |
| <b>Accuracy</b>                | ±0.5% of Reading                                  |
| <b>Repeatability</b>           | ±0.03% of Reading                                 |

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

| Electrical data  |   |
|--|---|
| <b>Operating voltage</b>   |   |
| Pulse version  | 12 - 36 V DC, filtered and regulated  |
| Pulse "Low Power" version  | 12 - 36 V DC filtered and regulated (via Bürkert transmitter)                           |
| <b>Current consumption</b> with sensor   |   |
| Pulse version  | < 30 mA   |
| Pulse "Low Power" version  | < 0.8 mA  |
| <b>Output: Frequency</b>   |   |
| Pulse version  | Transistor NPN/PNP, open collector, max. 100 mA, frequency: 0... 300 Hz; duty cycle 50% |
| Pulse "Low Power" version  | Transistor NPN, open collector, max. 10 mA, frequency: 0... 300 Hz; duty cycle 50%      |
| <b>Reversed polarity of DC</b>   | Protected   |
| Environment  |   |
| <b>Ambient temperature</b>   | 0 to +60°C (32 to 140°F) (operating and storage)  |
| <b>Relative humidity</b>   | ≤ 80%, without condensation   |
| Standards and approvals  |   |
| <b>Protection class</b>  | IP65 with connector plugged-in and tightened  |
| <b>Standard</b>  |   |
| EMC  | EN 50081-1, 50082-2   |
| Pressure (Sensor 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)         |

\* 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 ≤ 32 or DN > 32 and PN*DN ≤ 1000 |
| Fluid group 1, chap. 1.3.b | PN*DN ≤ 2000                        |
| Fluid group 2, chap. 1.3.b | DN ≤ 200                            |

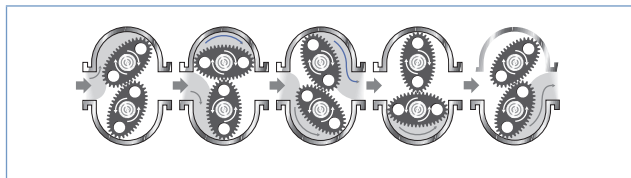
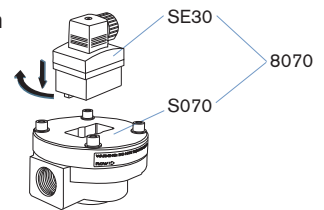
## Design and principle of operation

The flowmeter 8070 is built up with an electronic module SE30 associated to a sensor fitting S070 with integrated measurement oval rotor.

This connection is made by means of a Quarter-Turn.

In a 3-wire system (transistor output), the signal can be displayed or processed directly. The output signal is provided via cable plug according to EN 175301-803.

### Quarter-Turn Technology



Two electronic module versions with frequency output are available:

- with one pulse output (either NPN or PNP transistor output).  
An external power supply of 12 - 36 V DC is required.  
It is designed for connection to any system with open collector NPN or PNP frequency input.

When liquid flows through the pipe, the rotors turn. This rotation produces a measuring signal in the transducer. The frequency and amplitude are proportional to the flow.

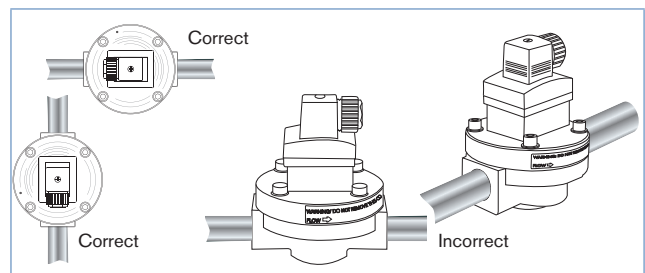
A conversion coefficient (K factor, available in the instruction manual of the sensor fitting S070), specific to each pipe (size and material) enables the conversion of this frequency into a flow rate.

- with one pulse "Low Power" output (NPN transistor output).  
An external power supply of 12 - 36 V DC is required.  
Can only be connected to separate versions of flow transmitters Type 8025/8032, to 4... 20 mA module Type 8023 or a universal controller eCONTROL Type 8611.

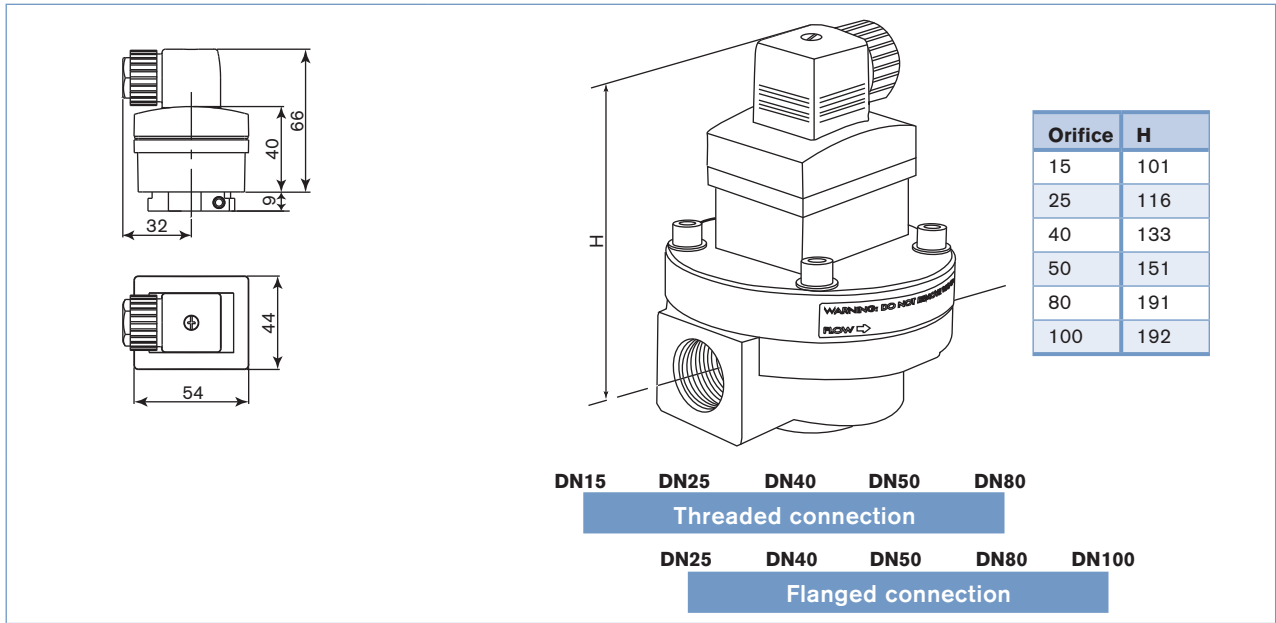
## Installation

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



Ordering chart for flowmeter Type 8070

A flowmeter Type 8070 consists of:

- an electronic module with pulse signal Type SE30
- an INLINE sensor fitting S070 (DN15 - DN100 - Refer to corresponding data sheet)

Electronic module Type SE30 - for sensor fitting Type S070 (to be ordered separately)

| Description   | Operating voltage           | Output  | Electrical connection    | Item no. |
|---|-----------------------------|---|--------------------------|----------|
| Pulse flowmeter version (pluggable to PLC)  | 12 - 36 V DC                | Frequency with pulse PNP or NPN, open collector | Cable plug EN 175301-803 | 423 913  |
| Pulse "Low Power" flowmeter version (only pluggable to Type 8025, 8032, 8023 or 8611) | from associated transmitter | Frequency with pulse NPN, open collector        | Cable plug EN 175301-803 | 423 914  |

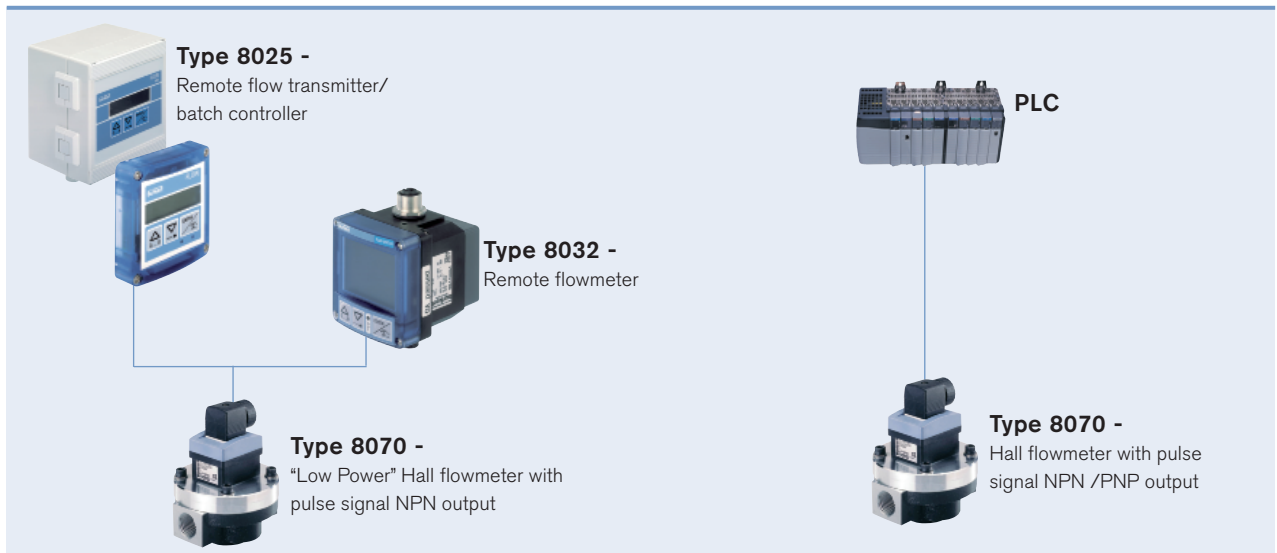
**Ordering chart for accessories for flowmeter Type 8070** (to be ordered separately)

| Version   | Specifications  | Operating voltage | Outputs                     | Relays         | Electrical connection  | Item no. |
|---|---|-------------------|-----------------------------|----------------|--|----------|
| Compatible remote transmitter                             |   |                   |                             |                |  |          |
| Panel-mounted   | Flow controller Type 8032                                 | 12 - 30 V DC      | NPN and NPN                 | -              | Terminal strip   | 558 181  |
|   | Universal flow transmitter Type 8025, 2 totalisators      | 13 - 30 V DC      | 4... 20 mA (3-wire) + pulse | -              | Terminal strip   | 419 538  |
|   |   |                   |                             | 2              | Terminal strip   | 419 537  |
| Batch controller Type 8025, 2 totalisators and 1 flowrate | 12 - 30 V DC  | -                 | 2                           | Terminal strip | 419 536  |          |
| Wall-mounted  | Flow controller Type 8032                                 | 12 - 30 V DC      | NPN and NPN                 | -              | Free positionable 5-pin M12 male and 4-pin M12 female connectors | 448 861  |
|   | Universal flow transmitter Type 8025, 2 totalisators      | 13 - 30 V DC      | 4... 20 mA (3-wire) + pulse | -              | 3 cable glands   | 419 541  |
|   |   |                   |                             | 2              | 3 cable glands   | 419 540  |
|   |   |                   |                             | -              | 3 cable glands   | 419 544  |
|   | Batch controller Type 8025, 2 totalisators and 1 flowrate | 13 - 30 V DC      | -                           | 2              | 5 cable glands   | 433 740  |
|   |   |                   |                             |                | 115 - 230 V AC   | -        |

| Specifications  | Item no. |
|---|----------|
| 4-pin M12 female connector moulded on cable (2 m., shielded)  | 448 857  |
| 4-pin M12 female connector with plastic threaded locking ring | 917 116  |
| 5-pin M12 female connector moulded on cable (2 m., shielded)  | 438 680  |
| 8-pin M12 female connector moulded on cable (2 m., shielded)  | 444 800  |

**Interconnection possibilities with the flowmeter Type 8070**



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

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