

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 SE30 + S077 can be combined with...



Type 8025

Flow transmitter/Batch remote version



Type 8619

multiCELL transmitter/controller



Type 8611

eControl Universal controller



Type 8022

Flow transmitter/pulse divider



Type 2301 (8692/8693)

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.

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, SE32, 8619..)
- a PLC

Technical data

General data

Compatibility	with sensor fittings S077 (see corresponding data sheet)
Materials	
Housing, cover / Cable plug	PC / PA
Wetted parts materials	
Sensor fitting body	Aluminium or stainless steel 316L (1.4401)
Rotor	PPS, aluminium or stainless steel 316L (1.4401)
Shaft / Seal	Stainless steel 316L (1.4401) / FKM or FEP/PTFE encapsulated
Electrical connection	Cable plug EN 175301 - 803
Connection cable	max. 1.5 mm ² cross section; max. 50 m length, shielded (for pulse sensor version)

Complete device data (sensor fitting S077 + electronic module SE30)

Pipe diameter	DN15...DN100
Thread connection	1/2"; 1"; 1 1/2"; 2"; 3" (G or NPT)
Flange connection	25; 40; 50; 80 or 100 mm DIN PN16 flange 1"; 1 1/2"; 2"; 3" or 4" ANSI 150LB flange
Measuring range	
Viscosity >5 mPa.s	2 ... 1200 l/min (0.53... 320 gpm)
Viscosity <5 mPa.s	3 ... 616 l/min (0.78... 320 gpm)
Medium temperature	
Aluminium body	-20 ... +80 °C (-4... +176 °F)
Stainless steel body	-20 ... +120 °C (-4... 248 °F)
Fluid pressure max.	
DN15 / DN25	55 bar (798.05 PSI) (threaded process connection) / 55 bar (798.05 PSI) ¹⁾
DN40 or DN50	18 bar (261.18 PSI)
DN80 / DN100	12 bar (174.12 PSI) / 10 bar (145.1 PSI)
Viscosity	1 Pa.s max. (higher on request)
Measurement deviation	± 1 % of Reading (if "standard" K-factor is used) ± 0.5 % of Reading (if "specific" K-factor is used, on label of the product)
Repeatability	± 0.03 % of Reading

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

Electrical data	
Operating voltage	
Pulse version	12 ... 36 V DC, filtered and regulated
Pulse "Low Power" version	12 ... 36 V DC filtered and regulated (via Bürkert transmitter)
Current consumption with sensor	
Pulse version	< 30 mA
Pulse "Low Power" version	< 0.8 mA
Output: Frequency	
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%
Reversed polarity of DC	Protected
Environment	
Ambient temperature	0 ... + 60 °C (32... 140 °F) (operating and storage)
Relative humidity	≤ 80%, without condensation
Standards and approvals	
Protection class	IP65 with connector plugged-in and tightened
Standard	
EMC	EN 50081 - 1, 50082 - 2
Pressure (Sensor fitting S077, DN15... 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).

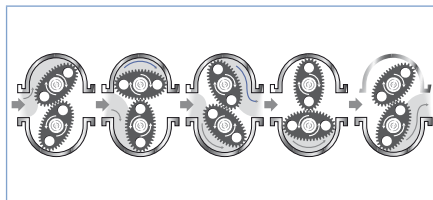
Type of fluid	Conditions
Fluid group 1, chap. 1.3.a	Forbidden
Fluid group 2, chap. 1.3.a	DN ≤ 32 or DN > 32 and PN*DN ≤ 1000
Fluid group 1, chap. 1.3.b	PN*DN ≤ 2000
Fluid group 2, chap. 1.3.b	DN ≤ 200

Design and principle of operation

The flowmeter is built up with an electronic module SE30 associated to a sensor fitting S077 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.



When liquid flows through the pipe, the rotors turn. This rotation produces a measuring signal in the associated hall sensor. The frequency and amplitude are proportional to the flow. The volume of the fluid being transferred in this way is exactly determined through the sensor geometry. A conversion coefficient, specific to each meter size, enables the conversion of this frequency into a flow rate. The standard K-factor depending on the meter size is available in the instruction manual of the sensor fitting S077, or to improve the measurement deviation, a specific K-factor is given with each device on its label.

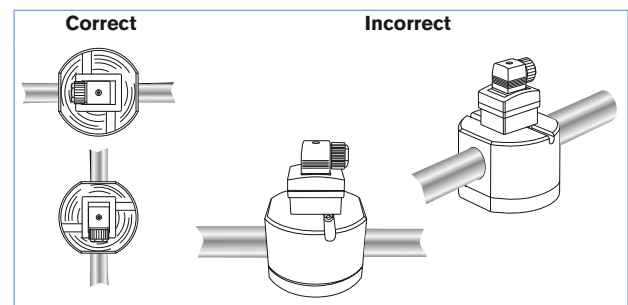
Two electronic module versions with frequency output are available:

- 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.
- 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 or SE32, to 4 ... 20 mA module Type 8022, to a universal controller eCONTROL Type 8611 or to a multiCELL Transmitter/Controller Type 8619

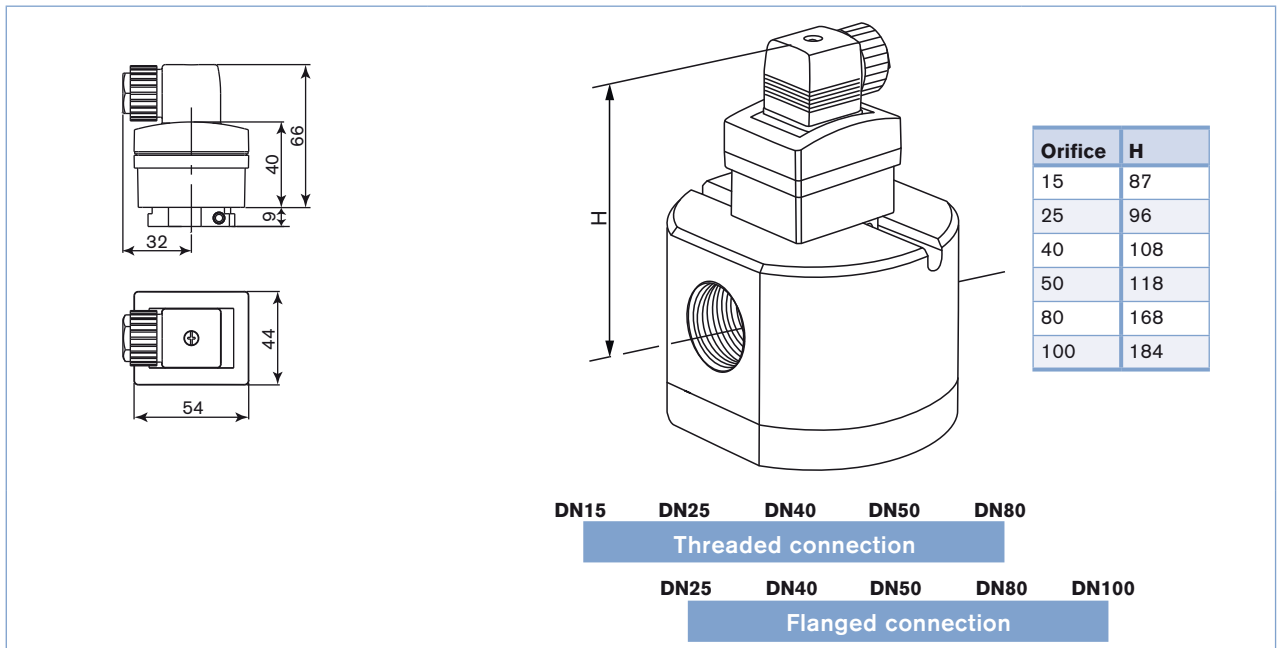
Installation

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).

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 complete flowmeter Type SE30 + S077

A complete flowmeter consists of:

- an electronic module with pulse signal Type SE30
- an INLINE sensor fitting S077 (DN15...DN100 - Refer to corresponding data sheet)

Electronic module Type SE30 - for sensor fitting Type S077 (to be ordered separately)

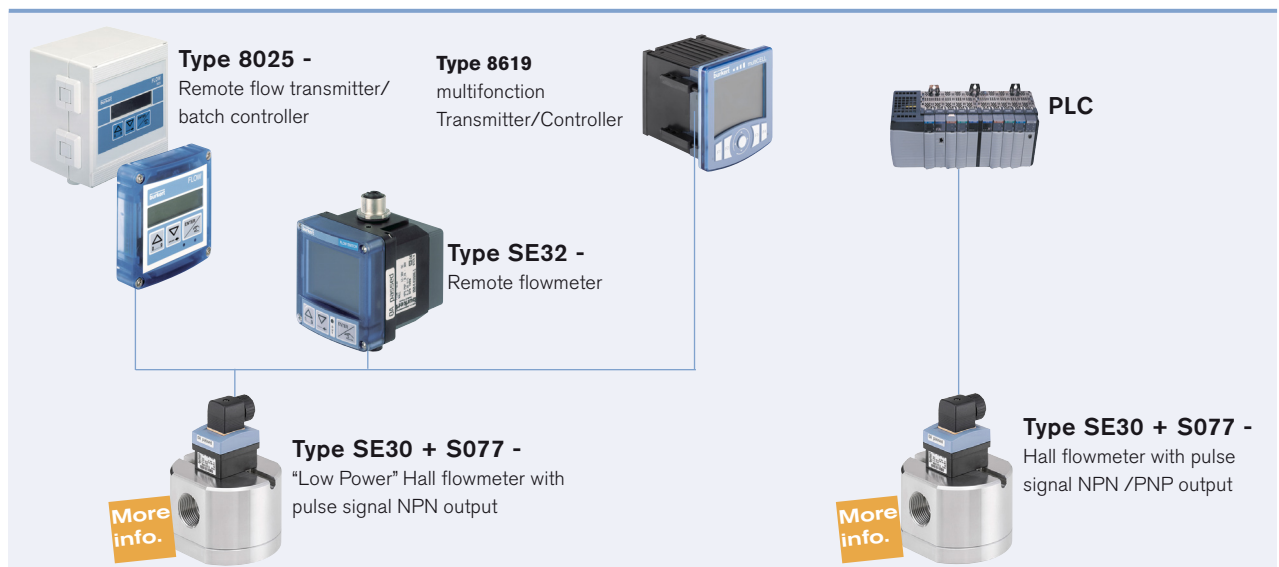
Description	Operating voltage	Output	Electrical connection	Article no.
Pulse flowmeter version (pluggable to PLC)	12 ... 36 V DC	Frequency with pulse PNP or NPN, open collector	Cable plug EN 175301-803	423913
Pulse "Low Power" flowmeter version (only pluggable to Type 8025, SE32, 8022, 8611 or 8619)	from associated transmitter	Frequency with pulse NPN, open collector	Cable plug EN 175301-803	423914

Ordering chart for accessories (to be ordered separately)

Version	Specifications	Operating voltage	Outputs	Relays	Electrical connection	Article no.
Compatible remote transmitter						
Panel-mounted	Flow controller Type SE32	12 ... 30 V DC	NPN and NPN	-	Terminal strip	558181
	Universal flow transmitter Type 8025, 2 totalisators	13 ... 30 V DC	4 ... 20 mA (3-wire) + pulse	-	Terminal strip	419538
		12 ... 30 V DC		2	Terminal strip	419537
Batch controller Type 8025, 2 totalisators and 1 flowrate	12 ... 30 V DC	-	2	Terminal strip	419536	
Wall-mounted	Flow controller Type SE32	12 ... 30 V DC	NPN and NPN	-	Free positionable 5 pin M12 male and 4 pin M12 female connectors	448861
	Universal flow transmitter Type 8025, 2 totalisators	13 ... 30 V DC	4 ... 20 mA (3-wire) + pulse	-	3 cable glands	419541
		115 ... 230 V AC		2	3 cable glands	419540
		115 ... 230 V AC	2	3 cable glands	419543	
	Batch controller Type 8025, 2 totalisators and 1 flowrate	13 ... 30 V DC	-	2	5 cable glands	433740
		115 ... 230 V AC	-	2	5 cable glands	433741

Specifications	Article no.
4 pin M12 female connector moulded on cable (2 m., shielded)	448857
4 pin M12 female connector with plastic threaded locking ring	917116
5 pin M12 female connector moulded on cable (2 m., shielded)	438680
8 pin M12 female connector moulded on cable (2 m., shielded)	444800

Interconnection possibilities with other Bürkert products



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

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