bürkert
FLUID CONTROL SYSTEMS

Flowmeter with paddle wheel for continuous flow measurement

- Economic integration in pipe systems without any additional pipelines
- Optic or magnetic measuring principle
- Outputs: 1 analogue output 4…20 mA and/or 1 transistor output (frequency or switch)
- Outputs configurable (through interface on USB port with PC)

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

Type 8611 ▸
eCONTROL - Universal controller

Type 8025 ▸
Insertion flowmeter or batch controller with paddle wheel and flow transmitter or remote batch controller

Type 8619 ▸
multiCELL - Multi-channel and multi-function transmitter/controller

Type 2301 ▸
Pneumatically operated 2 way Globe Control Valve ELEMENT

Type description

The paddle wheel flow meter is available in magnetic or optical version. The magnetic version of the measuring instrument is especially designed for use with neutral, slightly aggressive, solid free liquids. The optical version is exclusively intended for use with infrared transparent liquids.

The 8012 consists of a fitting (S012) and an electronic module (SE12) which are connected together with screw. The Bürkert designed fitting system ensures simple installation into all pipes from DN06…DN65. It can also be integrated in customer-specific block systems.

Depending on the electronics module, the 8012 is equipped:
- with a pulse output or
- with a pulse output and a 4…20 mA current output.

The pulse output, which can be transmitted and processed by a Bürkert remote transmitter/controller, generates a configurable frequency proportional to the flow rate or can be used as a switch output.

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Visit product website ▸

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1. General technical data

Note:
If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

Product properties	
Material	
Please make sure the device materials are compatible with the fluid you are using. Detailed information can be found in chapter "3.1. Chemical Resistance Chart – Bürkert resistApp" on page 5.	
Non wetted parts	
Housing	PPS
Seal	EPDM
Screws	Stainless steel A4
M12 male fixed plug	PA
Cable gland with 1 m connected cable (on request)	PVC (cable) and PA (cable gland)
Wetted parts	
Fitting	Brass, stainless steel 1.4404/316L, PVC or PP
Seal	FKM (EPDM option)
Axis and bearings	Ceramics (Al_2O_3)
Paddle wheel, holder	PVDF
Dimensions	Detailed information can be found in chapter "4. Dimensions" on page 6.
Measuring element	Optical – infra-red (or magnetic paddle wheel, on request)
Compatibility	Electronic module (SE12) compatible with Bürkert fitting (S012) For the selection of the nominal diameter of the S012 fittings, see chapter "6.2. Selection of the nominal diameter" on page 10.
Pipe diameter	DN06…DN50 (DN65 on request)
Measuring range	Flow rate: 0.5…1000 l/min (0.13…265 gpm) - flow velocity: 0.3…10 m/s
Performance data	
Measurement deviation	• Teach-In[1.]: ±1 % of the measured value[2.] (at Teach-In flow rate value) • Standard K-factor: ±2.5 % of the measured value[2.]
Linearity	±0.5 % of full scale[2.]
Repeatability	±0.4 % of the measured value[2.]
4…20 mA output uncertainty	±0.16 mA
Electrical data	
Operating voltage	12…36 V DC ±10 %, filtered and regulated Connection to main supply: permanent (through external SELV (Safety Extra Low Voltage) and LPS (Limited Power Source) power supply)
Power Source (not supplied)	Limited power source according to UL/EN 60950-1 standards or limited energy circuit according to UL/EN 61010-1 §9.4
DC reverse polarity protection	Yes
Over-voltage protection	Yes
Current consumption	<60 mA (at 12 V DC for current version, without load)
Outputs	• Transistor: NPN (default setting) or PNP (configurable on request), open collector – 700 mA max. – NPN-output: 0.2…36 V DC (default setting) – PNP-output: power supply – Frequency or switching mode – Operating mode: window or hysteresis threshold – Protection against over-voltage, polarity reversals and short circuit • Current: according to version, configurable on request – 4…20 mA (3 wire), sinking (default setting – configurable as sourcing on request) – Image of the flow velocity (default setting) – Loop impedance max.: 1125 Ω at 36 V DC, 650 Ω at 24 V DC, 140 Ω at 12 V DC
Voltage supply cable	1.5 mm^2 max. cross-section

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Medium data	
Fluid temperature	With fitting in: • PVC: 0…+60 °C (+32…+140 °F) • PP: 0…+80 °C (+32…+176 °F) • Stainless steel or brass: -15…+100 °C (+5…+212 °F) (if T°ambient ≤ +45 °C) or -15…+90 °C (+5…+194 °F) (if +45 °C ≤ T°ambient ≤ +60 °C)
Fluid pressure	• Max. PN10 (145 PSI) with plastic fitting • Max. PN16 (232 PSI) with metal fitting Detailed information can be found in chapter "5.1. Pressure temperature diagram" on page 8.
Viscosity	Max. 300 cSt
Rate of solid particles	Max. 1 % .
Maximum particle size	0.5 mm
Process/Port connection & communication	
Port connection	• Metal: Internal or external thread (weld ends, clamp or flange on request) • Plastic: True union with nut and solvent socket, external thread (spigot on request)
Electrical connection	Free positionable 5 pin M12 male fixed plug or with 1 m cable via cable gland (on request)
Approvals and Certificates	
Standards	
Protection class	According to IEC/EN 60529: • IP67 with device wired and M12 cable plug mounted and tightened • IP65 (with cable gland)
Directives	
CE directives	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable).
Pressure equipment directives	Complying with Article 4, Paragraph 1 of 2014/68/EU directive Detailed information on the pressure equipment directive can be found in chapter "2.1. Pressure Equipment Directive" on page 5.
Certificate	On request: • Inspection certificate 3.1 (acc. to EN-ISO 10204) • Test report 2.2 (acc. to EN-ISO 10204) • Certification of conformity for the surface quality DIN4762-DIN4768-ISO/4287/1 • 3 points flow calibration certificate • FDA-certificate (only for device with EPDM seal and stainless steel fitting)
Environment and installation	
Ambient temperature	Operation and storage: -15…+60 °C (+5…+140 °F)
Relative air humidity	≤80 %, without condensation
Height above sea level	Max. 2000 m
Operating condition	Continuous
Equipment mobility	Fixed
Application range	Indoor and outdoor (Protect the device against electromagnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions)
Installation category	Category I according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

1.) Special calibration method

2.) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C (68 °F), while maintaining the minimum inlet and outlet distances and the appropriate internal diameters of the pipes.

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2. Approvals

2.1. Pressure Equipment Directive

The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions:

Device used on a pipe

Note:

- The data in the table is independent of the chemical compatibility of the material and the fluid.
- PS = maximum admissible pressure, DN = nominal diameter of the pipe

Type of fluid	Conditions
Fluid group 1, Article 4, Paragraph 1.c.i	DN ≤ 25
Fluid group 2, Article 4, Paragraph 1.c.i	DN ≤ 32 or PS*DN ≤ 1000
Fluid group 1, Article 4, Paragraph 1.c.ii	DN ≤ 25 or PS*DN ≤ 2000
Fluid group 2, Article 4, Paragraph 1.c.ii	DN ≤ 200 or PS ≤ 10 or PS*DN ≤ 5000

3. Materials

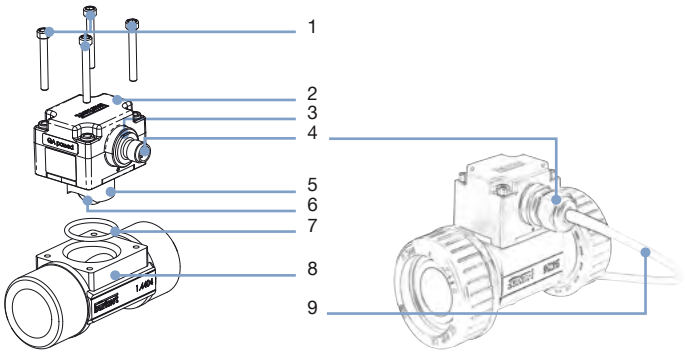
3.1. Chemical Resistance Chart – Bürkert resistApp

Bürkert resistApp – Chemical Resistance Chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

Start Chemical Resistance Check

3.2. Material specifications



No.	Description	Material
1	Screws	Stainless steel A4
2	Housing	PPS
3	Seal	EPDM
4	M12 male fixed plug or cable gland	PA
5	Axis and bearing	Ceramics (Al_2O_3)
6	Paddle wheel and holder	PVDF
7	Seal	FKM (EPDM option)
8	Fitting	Brass, stainless steel 1.4404/316L, PVC or PP
9	Cable	PVC

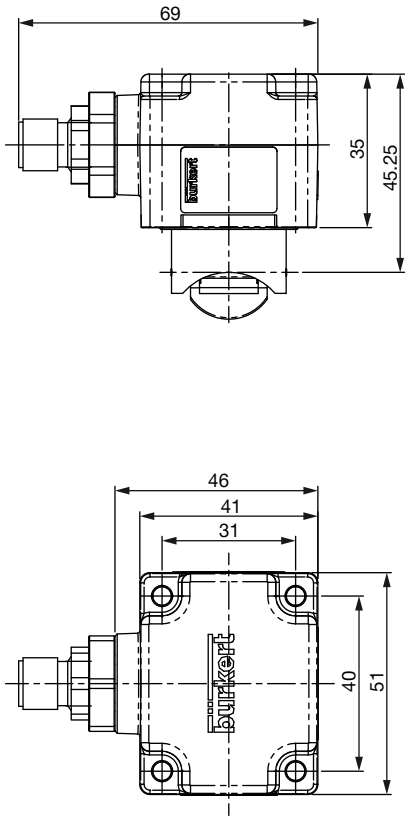
4. Dimensions

4.1. Electronic module SE12

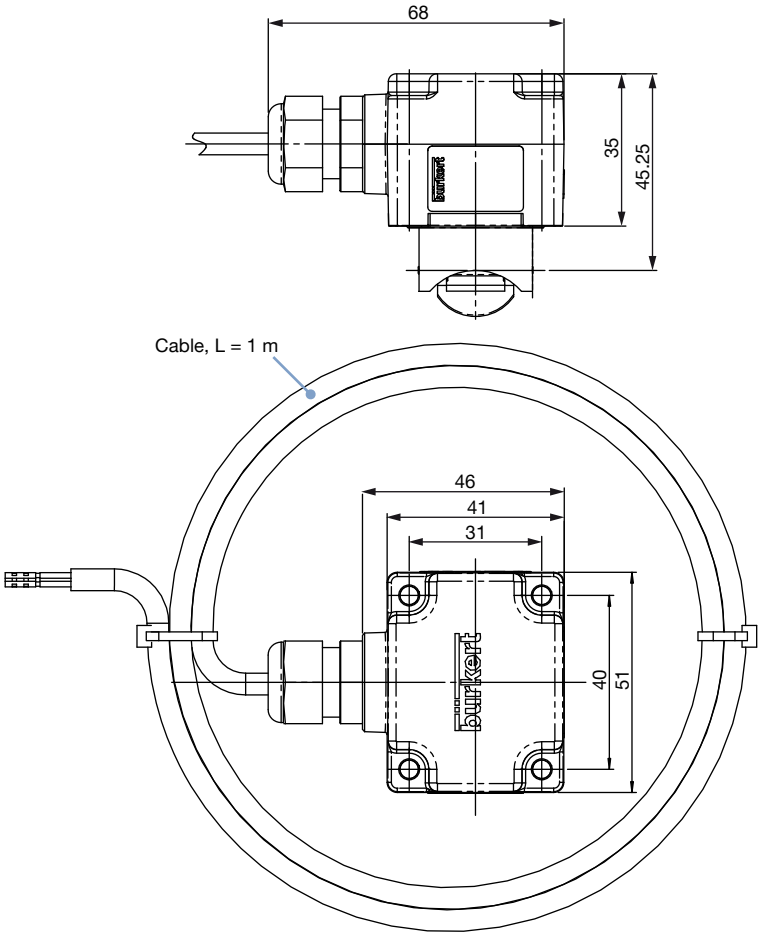
Note:

- Specifications in mm
- Version with cable on request

With free positionable 5 pin M12 male fixed connector



With cable via cable gland



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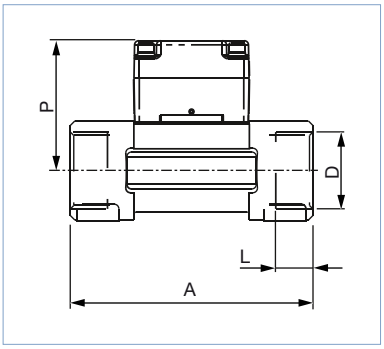
4.2. Flowmeter 8012

Combination of electronic module SE12 and fitting S012 with internal thread process connection

Note:
Specifications in mm (unless otherwise stated)

According to G, NPT or Rc in stainless steel (316L - 1.4404) or brass ($CuZn_{39}Pb_2$)

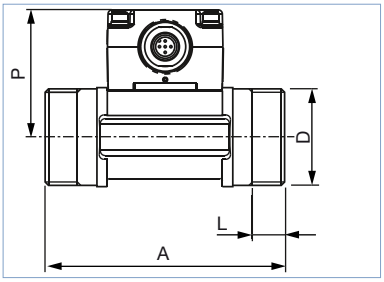


DN	P	A	D	L
			[inch]	
15	57.5	84.0	G ½	16.0
			NPT ½	17.0
			Rc ½	15.0
20	55.0	94.0	G ¾	17.0
			NPT ¾	18.3
			Rc ¾	16.3
25	55.2	104.0	G 1	23.5
			NPT 1	18.0
			Rc 1	18.0
32	58.8	119.0	G 1 ¼	23.5
			NPT 1 ¼	21.0
			Rc 1 ¼	21.0
40	62.6	129.0	G 1 ½	23.5
			NPT 1 ½	20.0
			Rc 1 ½	19.0
50	68.7	148.5	G 2	27.5
			NPT 2	24.0
			Rc 2	24.0

Combination of electronic module SE12 and fitting S012 with external thread process connection

Note:
Specifications in mm (unless otherwise stated)

According to G, NPT or Rc in stainless steel (316L - 1.4404) or brass ($CuZn_{39}Pb_2$) or PVC



DN	P	A	D		L
			[Inch]	[mm]	
06	52.5	90.0	G ½	–	14.0
08	52.5	90.0	G, NPT, RC ½ according to fitting version	M16x1.5	14.0

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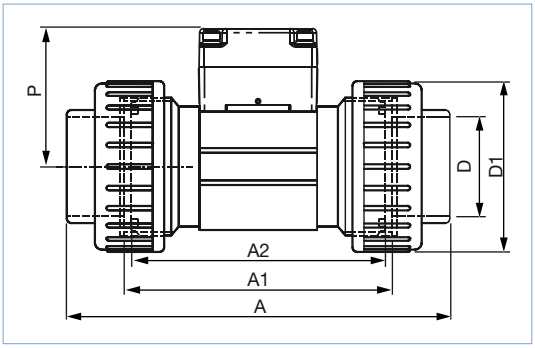
Combination of electronic module SE12 and fitting S012 with true union connection

Note:
Specifications in mm

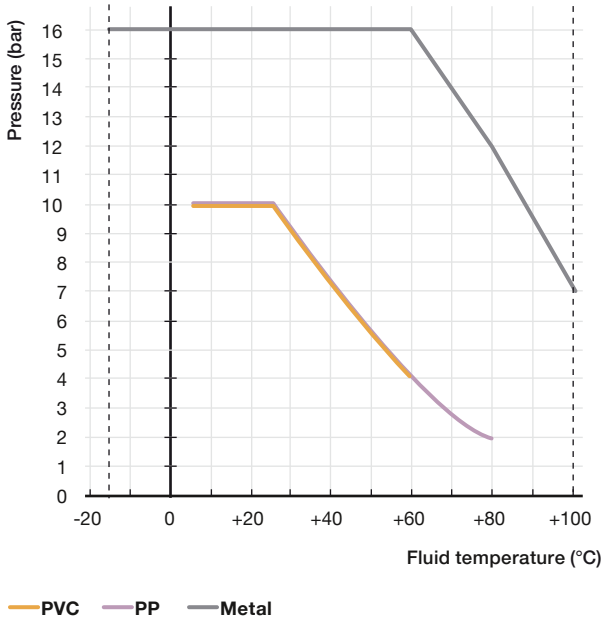
According to DIN 8063, ASTM D 1785/76 or JIS K in PVC



DN	P	A	Standard	A1	A2	D	D1
15	57.5	128.0	DIN/ISO	96	90	20.00	43
		130.0	ASTM			21.30	
		129.0	JIS			18.40	
20	55.0	144.0	DIN/ISO	106	100	25.00	53
		145.6	ASTM			26.70	
		145.0	JIS			26.45	
25	55.2	160.0	DIN/ISO	116	110	32.00	60
		161.4	ASTM			33.40	
		161.0	JIS			32.55	
32	58.8	168.0	DIN/ISO	116	110	40.00	74
		170.0	ASTM			42.20	
		169.0	JIS			38.60	
40	62.6	188.0	DIN/ISO	127	120	50.00	83
		190.2	ASTM			48.30	
		190.0	JIS			48.70	
50	68.7	212.0	DIN/ISO	136	130	63.00	103
		213.6	ASTM			60.30	
		213.0	JIS			60.80	

5. Performance specifications

5.1. Pressure temperature diagram



6. Product installation

6.1. Installation notes

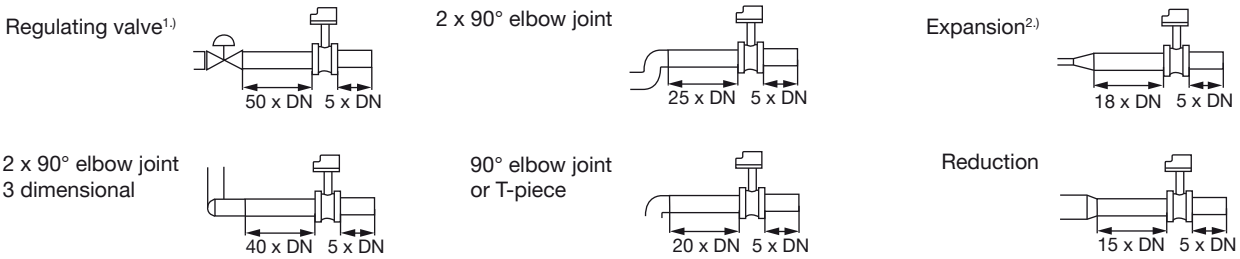
Note:
The device is not designed for gas and steam flow measurement.

Minimum straight upstream and downstream distances must be observed. According to the pipe's design, necessary distances can be bigger or use a flow conditioner to obtain the best accuracy.

Fore more information, please refer to EN ISO 5167-1.
EN ISO 5167-1 specifies the straight inlet and outlet distances that must be complied with when installing fittings in pipe lines in order to achieve calm flow conditions. The most important layouts that could lead to turbulence in the flow are shown below, together with the associated specified minimum inlet and outlet distances.

Make sure that the measuring conditions at the point of measurement are calm and problem-free.

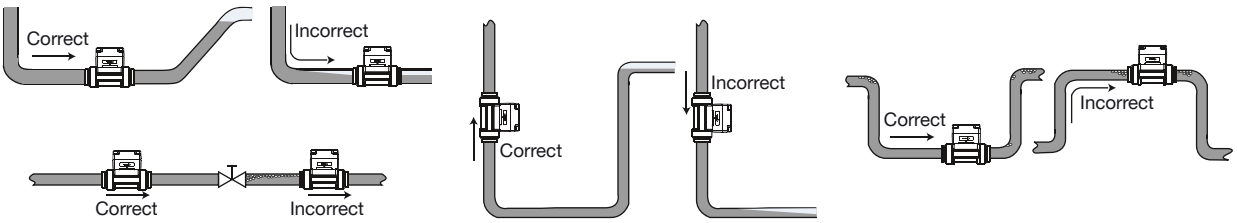
DN = Orifice **Fluid direction ⇨**



1.) If the valve cannot be mounted after the measuring device, the minimal distances have to be respected.
2.) If an expansion cannot be avoided, the minimal distances have to be respected.
Please note minimum flow velocity

The flowmeter can be installed in either horizontal or vertical pipes, but following additional conditions should be respected:

- Always install the 8012 so that the paddle wheel axis is horizontal.
- Ensure the pipe is maintained full at all times, near the device.
- Ensure the pipe design does not allow the build-up of air bubbles or cavities within the medium, near the device.



Pressure and temperature ratings must be respected according to the selected fitting material. The suitable pipe size is selected using the diagram for selecting the nominal diameter of the fitting.

See chapter "6.2. Selection of the nominal diameter" on page 10.

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6.2. Selection of the nominal diameter

The following graph is used to determine the DN of the pipe and the fitting appropriate to the application, according to the fluid velocity and the flow rate. On the chart, the intersection of flow rate and flow velocity gives the appropriate diameter.

Note:
For the sensor fittings listed below, the corresponding nominal size in the bracket must be used:

- External threads acc. to SMS 1145
- Weld ends acc. to SMS 3008, BS4825-1/ASME BPE/DIN 11866 series C or DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A
- Clamp acc. to SMS 3017, BS 4825-3/ASME BPE or DIN 32676 series A

For all other sensor fittings, the corresponding nominal diameter without bracket applies.

Example 1:

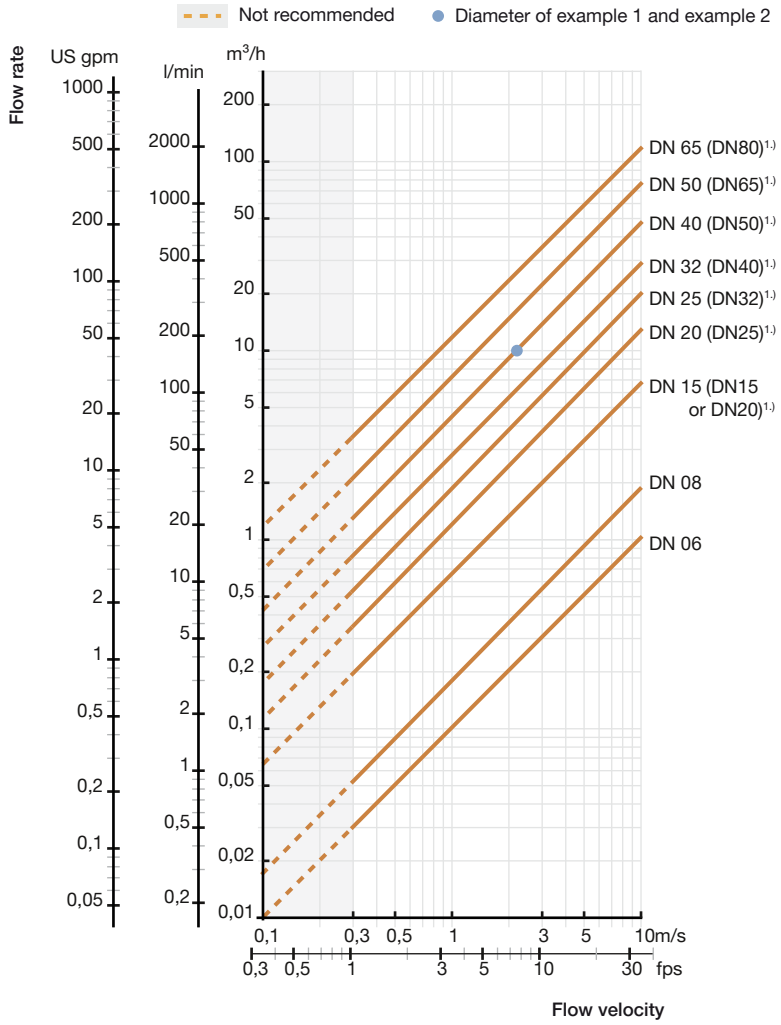
- Nominal flow: 10 m³/h
- Optimal flow rate: 2…3 m/s

Result: Select a pipe size of DN40

Example 2 with external threads acc. to SMS 1145:

- Nominal flow: 10 m³/h
- Optimal flow rate: 2…3 m/s

Result: Select a pipe size of DN50



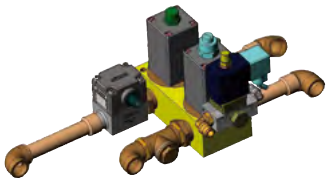
1.) See note at the beginning of this chapter.

6.3. Mounting options

The modular concept of the SE12 electronic module allows fully customized, pre-mounted and tested solutions to completely meet application needs. It is designed for being mounted in a system block, combined with other Bürkert products. This allows cost reduction and compact design for customized solutions.

Please contact your local Bürkert sales centre to have individual counselling and engineering support in order to find the best solution corresponding to your application.

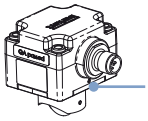
Example of flow control systems with SE12 electronic module

Assembly 1	Assembly 2
Cooling of moulding tools in plastic injection machines Flow (8012) + temperature + manual On/Off valve 	**Filter monitoring in waste water treatment** Flow (8012) + pressure (8316) 
Assembly 3	**Assembly 4**
Cooling of welding robot in automotive industry Flow (8012) + pilot valve (6014) + On/Off diaphragm valve (0263) 	**Flow regulation in Ro water treatment skid** Process valve (2712 + 8692) + Flow (8012) 

7. Product operation

7.1. Measuring principle

The SE12 electronic module is equipped with 2 LED indicators, visible, due to transparency nature of material, under the fixed connector (standard) or on the side opposite the connector (on request).


Location of the LEDs

When the power is turned on, the green LED lights up and flashes proportionally to the paddle wheel rotation frequency. The lighting up of the red indicator LED indicates a malfunction of the device. When liquid flows into the pipe, the paddle wheel is rotated. The non-wetted permanent magnets inserted in the paddle wheel generate a measuring signal whose frequency is proportional to the flow velocity. With the optical method, the same procedure is used, but the light beam is interrupted.

Two electronic module versions allow the following outputs:

- With one pulse output (either NPN or PNP transistor output, configurable).
  An external power supply of 12…36 V DC is required. This pulse output generates a signal whose frequency is proportional to the flow velocity. It is designed for connection to any system with open collector NPN or PNP frequency input.
- With one 4…20 mA current output and one pulse output (either NPN or PNP transistor output, configurable).
  An external power supply of 12…36 V DC is required. The 4…20 mA output delivers a current whose value is the image of the flow velocity.

The output signal is provided via a free positionable male 5 pin M12 fixed connector (or a cable gland with 1 m length cable on request).

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7.2. Function modes

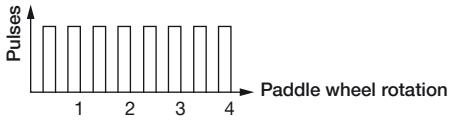
Valid for the 8012 with optical (standard) or magnetic (on request) principle

Version with transistor output:

- Transistor output: NPN (standard) or PNP (on request) operation
- With one configured transistor output mode (4 possibilities):
  - Raw frequency (standard) – (2 pulses per paddle wheel rotation)

Raw frequency

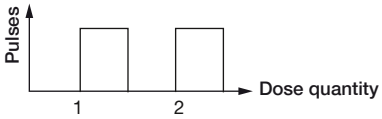
Pulse length:
– 50 % ON
– 50 % OFF



  - Proportional frequency (on request) – (e.g. 5 pulses per litre)

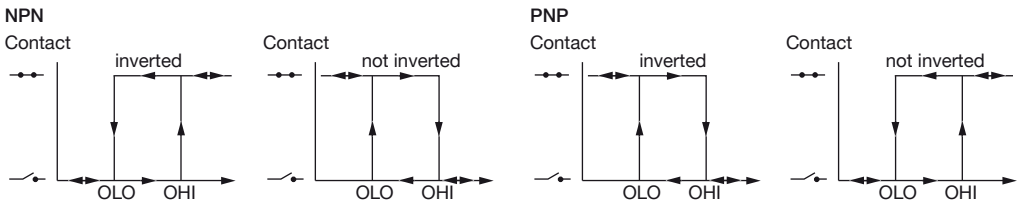
Proportional frequency

Pulse length:
– 50 % ON
– 50 % OFF

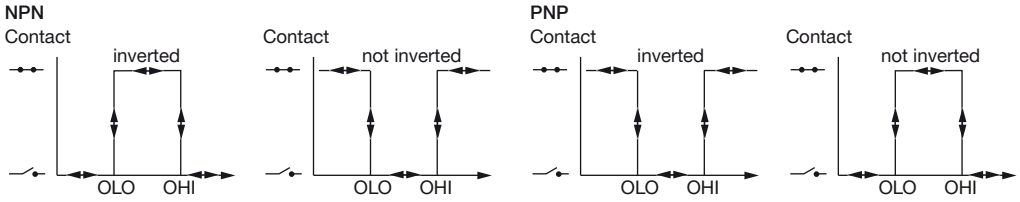


  - 2 switching modes for the output, either hysteresis or window, inverted or not, depending on the kind of the transistor output. Configurable delay before switching

Hysteresis mode



Window mode



- Detection of flow direction – only with optical principle

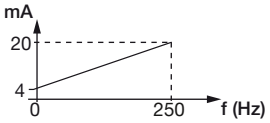
Version with transistor and current outputs

- Transistor output:
  - Same features described as above
- Current output:
  - With sinking (standard) or sourcing (on request) wiring
  - 8012 with configurable current output:
    4…20 mA current corresponding to paddle wheel frequency (0…250 Hz) – (standard)

Paddle wheel frequency

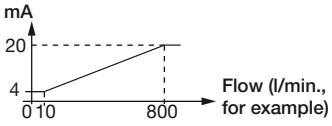
Q = f/K

Q: flow rate [l/s]
f: frequency [Hz]
K: K-factor [pulse/litre]



4…20 mA current corresponding to a flow range – (on request)

Flow range



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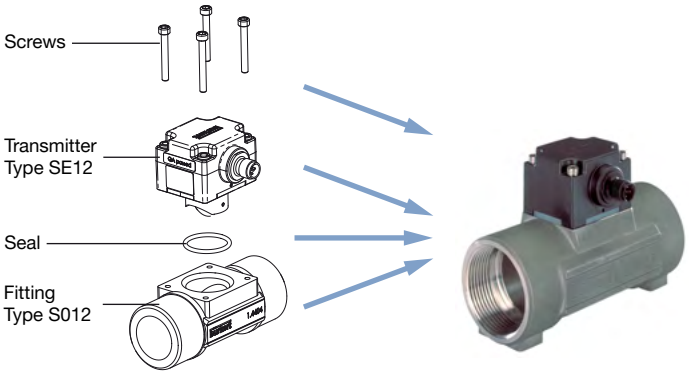
- Adjustable damping of current output signal
- Generation of an alarm current (22 mA) – when fluid circulation is opposite to the direction indicated by the arrow on the side of the housing (only versions with optical principle) or when full scale has been exceeded (versions with optical or magnetic principle).

8. Product design and assembly

8.1. Product assembly

Note:

- The 8012 device is made up of a fitting (S012) and a transmitter equipped with a sensor with paddle wheel (SE12).
- The drawing shows the assembly of a fitting Type S012 with a process internal thread connection and a transmitter Type SE12 (Type S012 + Type SE12 = Type 8012). This also applies to all versions of process connection and compatible type of transmitter.

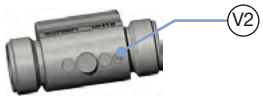


9. Product accessories

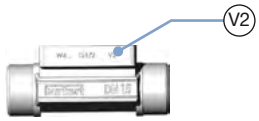
9.1. Seals for fitting body

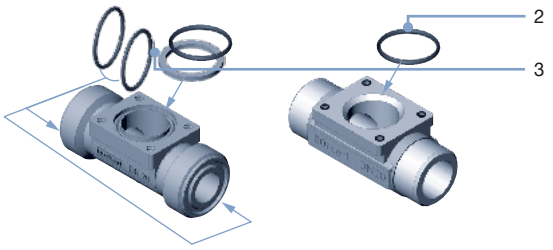
Note:
Since March 2012, fittings Type S012 in DN15 and DN20 exist in two versions, that have different K factors (detailed information can be found in the user manual in chapter K-factor, see Type 8012 ▶). The second version is identified by the marking “v2”. This “v2” marking can be found:

- on the bottom of the DN15 or DN20 fitting in plastic



- on the side of the DN15 or DN20 fitting in metal



Accessory	No.	Description
	**1**	O-ring set for metal sensor-fitting
	2	O-ring set for plastic sensor-fitting (O-Ring for process connection and seal[1.)] for sensor holder)

1.) Depending on sensor holder version: flat seal to use for holder with groove (old version, no more available for sale), O-Ring to use for holder with lug (version “v2”)

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9.2. Configuration tool TACTIC

Note:
To configure a device with more specific parameters than the basic ones, please use the configuration tool TACTIC (to be ordered separately, see chapter “11.5. Ordering chart accessories” on page 18). The software to be used is available on the product website under “Software”, see **website of the Type 8012** ▶ for download.

Accessories	No.	Description
	**1**	TACTIC USB cable, 1 m length
	2	TACTIC electronic housing
	3	TACTIC cable with M12 connection
	4	Flowmeter Type 8012
	5	8012 configuration software

10. Networking and combination with other Bürkert products

Example:

Type 8012

Type 8802 ▶
(2301 & 8693)
ELEMENT Continuous control valve systems

Type 8025 ▶
Flow transmitter

Type 8619 ▶
multiCELL - transmitter/ controller

Type 8611 ▶
eCONTROL - Universal controller panel, wall or rail-mounting version

11. Ordering information

11.1. Bürkert eShop – Easy ordering and quick delivery

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11.2. Recommendation regarding product selection

Basic flowmeter

The proposed 8012 basic flowmeter is a device with optical measuring principle, powered by 12…36 V DC through a 5 pin M12 fixed connector. Detailed information can be found in chapter "11.4. Ordering chart" on page 16.
But many other variants are also offered.

Variants of flowmeter

A complete 8012 flowmeter consists of:

- An SE12 electronic module with many variants:
  - With either optical or magnetic measuring principle
  - With only pulse output or with both pulse and 4…20 mA current outputs
  - Configured as standard (see "11.4. Ordering chart" on page 16, Type SE12) or customized (see product enquiry form at the end of this data sheet)
  - The electrical connection is carried out through a 5 pin M12 fixed connector or a 1 m cable
- An S012 fitting available in different materials providing many installation options of the electronic module into all pipes, ranging from DN06…DN65, due to the large range of process connections (see "S012 fitting variants" on page 15 or product enquiry form at the end of this data sheet)
- Screws and O-ring (see "11.5. Ordering chart accessories" on page 18)

Therefore it is possible to realize a multitude of combinations between these types.

S012 fitting variants

Note:

- The fitting S012 is not available as a separate part, so it can not be ordered separately.
- Fitting in PVDF not available
- These combinations of transmitter and fitting, including associated 8012 configuration, should be ordered from your local Bürkert sales centre.

Port connection	Materials	Available fittings								
		DN06	DN08	DN15	DN20	DN25	DN32	DN40	DN50	DN65
Internal thread	Brass, stainless steel	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–
External thread	Brass, stainless steel, PVC, PP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–
	Stainless steel acc. SMS 1145	–	–	–	–	Yes	–	Yes	Yes	–
Weld ends	Stainless steel	–	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clamp	Stainless steel	–	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flange	Stainless steel	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–
True union	PVC	–	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–
	PP	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–
Spigot	PVC, PP	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–

11.3. Bürkert product filter

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11.4. Ordering chart

Basic flowmeter with optical measuring method, 12…36 V DC, 5 pin M12

Note:
Since March 2012, fittings Type S012 in DN15 and DN20 exist in two versions that have different K factors. Detailed information can be found in chapter "9.1. Seals for fitting body" on page 13 or in the user manual in chapter K-factor, see **Type 8012 ▶**.

Stand-ard	Output[1.]	Article no.								
		DN06 ¼"	DN06 ½"	DN08 ½"	DN15	DN20	DN25	DN32	DN40	DN50
Brass body, FKM seal - Fluid temperature max. 100 °C, PN16										
Internal thread connection										
G	Pulse	–	–	–	556003	556004	556005	556006	556007	556008
	Pulse + 4…20 mA	–	–	–	556012	556013	556014	556015	556016	556017
NPT	Pulse	–	–	–	556018	556019	556020	556021	556022	556023
	Pulse + 4…20 mA	–	–	–	556024	556025	556026	556027	556028	556029
Rc	Pulse	–	–	–	556030	556031	556032	556033	556034	556035
	Pulse + 4…20 mA	–	–	–	556036	556037	556038	556039	556040	556041
External thread connection										
G	Pulse	556000	556001	556002	–	–	–	–	–	–
	Pulse + 4…20 mA	556009	556010	556011	–	–	–	–	–	–
Stainless steel body, FKM seal - Fluid temperature max. 100 °C, PN16										
Internal thread connection										
G	Pulse	–	–	–	556045	556046	556047	556048	556049	556050
	Pulse + 4…20 mA	–	–	–	556054	556055	556056	556057	556058	556059
NPT	Pulse	–	–	–	556061	556062	556063	556064	556065	556066
	Pulse + 4…20 mA	–	–	–	556068	556069	556070	556071	556072	556073
Rc	Pulse	–	–	–	556074	556075	556076	556077	556078	556079
	Pulse + 4…20 mA	–	–	–	556080	556081	556082	556083	556084	556085
External thread connection										
G	Pulse	556042	556043	556044	–	–	–	–	–	–
	Pulse + 4…20 mA	556051	556052	556053	–	–	–	–	–	–
NPT	Pulse	–	–	556060	–	–	–	–	–	–
	Pulse + 4…20 mA	–	–	556067	–	–	–	–	–	–
PVC body, FKM seal - Fluid temperature max. 60 °C, PN10										
True union connection with nut and solvent socket										
DIN 8063	Pulse	–	–	–	556088	556089	556090	556091	556092	556093
	Pulse + 4…20 mA	–	–	–	556094	556095	556096	556097	556098	556099
ASTM	Pulse	–	–	–	556100	556101	556102	556103	556104	556105
	Pulse + 4…20 mA	–	–	–	556106	556107	556108	556109	556110	556111
JIS	Pulse	–	–	–	556112	556113	556114	556115	556116	556117
	Pulse + 4…20 mA	–	–	–	556118	556119	556120	556121	556122	556123
External thread connection										
G	Pulse	–	556086	556124	–	–	–	–	–	–
	Pulse + 4…20 mA	–	556087	556125	–	–	–	–	–	–

1.) Factory setting: - pulse NPN (raw frequency)
- pulse NPN (raw frequency) + 4…20 mA (sinking mode, 0…250 Hz)
- other configurations on request

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Further versions on request

Process connection
- External thread SMS 1145
- Weld ends SMS 3008, BS 4825-1/ASME BPE/ DIN 11866 series C or DIN 11850 series 2/DIN 11866 series A/ DIN EN 10357 series A
- Clamp DIN 32676 series B, SMS 3017, BS 4825-3/ ASME BPE or DIN 32676 series A
- Flange EN1092-1/B1/PN16, ANSI B16-5 or JIS 10K
- True union ISO 10931
- Spigot ISO 10931

Material
Fitting: PP

Electrical connection
With 1 m cable via cable gland

Additional
Magnetic measuring principle

Variants of flowmeter

Note:
- These combinations of transmitter and fitting, including associated 8012 configuration, should be ordered from your local Bürkert sales centre.
- The following charts indicate the different variants of the SE12 electronic module, which can be combined with an S012 fitting.

Specifications	Power supply	Pipe connection	Output[1.)]	Electrical connection	Article no.
Magnetic measuring principle	12…36 V DC	DN06, DN08, DN15 v2 and DN20 v2	Frequency with pulse NPN	Free positionable 5 pin M12	557054
			Frequency with pulse NPN + 4…20 mA		557058
			Frequency with pulse NPN	With 1 m cable	557056
			Frequency with pulse NPN + 4…20 mA		557060
		DN15…DN50 (except DN15 v2 and DN20 v2)	Frequency with pulse NPN	Free positionable 5 pin M12	557053
			Frequency with pulse NPN + 4…20 mA		557057
			Frequency with pulse NPN	With 1 m cable	557055
			Frequency with pulse NPN + 4…20 mA		557059
Optical measuring principle	12…36 V DC	DN06, DN08, DN15 v2 and DN20 v2	Frequency with pulse NPN	Free positionable 5 pin M12	557062
			Frequency with pulse NPN + 4…20 mA		557066
			Frequency with pulse NPN	With 1 m cable	557064
			Frequency with pulse NPN + 4…20 mA		557068
		DN15…DN50 (except DN15 v2 and DN20 v2)	Frequency with pulse NPN	Free positionable 5 pin M12	557061
			Frequency with pulse NPN + 4…20 mA		557065
			Frequency with pulse NPN	With 1 m cable	557063
			Frequency with pulse NPN + 4…20 mA		557067

1.) Factory setting: - pulse NPN (raw frequency)
- pulse NPN (raw frequency) + 4…20 mA (sinking mode, 0…250 Hz)
- other configurations on request

For ordering further versions of the 8012, please use the product enquiry form at the end of this data sheet.

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11.5. Ordering chart accessories

Specification		Article no.
4 short screws (M4 x 35 – A4) + 4 long screws (M4 x 60 – A4)		555775
	5 pin M12 female straight cable plug moulded on cable (2 m, shielded)	438680
	5 pin M12 female straight cable plug with plastic threaded locking ring, to be wired	917116
Configuration tool TACTIC (1-m length USB cable + 1 TACTIC cable with M12 connection + 1 TACTIC electronic housing)		556500
Connecting cables: 8012-TACTIC and TACTIC-PC (1-m length USB cable + 1 TACTIC cable with M12 connection)		556160

Seals for fitting body

Specification	Article no.							
	DN06	DN08	DN15	DN20	DN25	DN32	DN40	DN50
For metal fitting – FKM	426340	426340	426340	426340	426340	426340	426340	426340
For metal fitting – EPDM	426341	426341	426341	426341	426341	426341	426341	426341
For plastic fitting – FKM	–	448679	431555	431556	431557	431558	431559	431560
For plastic fitting – EPDM	–	448680	431561	431562	431563	431564	431565	431566

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Product Enquiry Form - 8012 flowmeter

Thank you for your interest in our products! In order to provide you with optimum advice, please fill out the following form and send it to your **Bürkert representative** or e-mail address: info@burkert.com. All information submitted will of course be kept strictly confidential.

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Delivery

[ ] Quantity [ ] Required delivery date

S012 fitting					
Pipe diameter DN	○ 06	○ 08	○ 15		
	○ 20	○ 25	○ 32		
	○ 40	○ 50	○ 65		
Body material	○ Brass	○ Stainless steel	○ PVC	○ PP	
Seals material	○ FKM	○ EPDM			
Port connection	**Internal thread**	○ G	○ NPT	○ Rc	
	External thread	○ G	○ NPT		
		○ Rc	○ SMS 1145		
	Weld ends	○ EN ISO1127/ISO4200/DIN 11866 series B			
		○ SMS 3008			
		○ DIN 11850 series 2/DIN 11866 series A/DIN 10357 series A			
		○ BS4825-1/ASME BPE/DIN 11866 series C			
	Clamp	○ DIN 32676 series B	○ SMS 3017		
		○ BS4825-3/ASME BPE	○ DIN 32676 series A		
	Flange	○ EN 1092-1/B1/PN16	○ ANSI, B16-5		
		○ JIS 10K			
	True union	○ DIN 8063	○ ASTM		
		○ JIS	○ DIN 16962		
	Spigot	○ DIN 8063	○ DIN 16962		
Special surface finish	○ Without	○ With	Ra int. = [ ] µm		
			Ra ext. = [ ] µm		
Flow unit (will determine the needed volume unit)	○ l/s		○ Ga/s	○ USGa/s	
	○ l/min	○ m³/min	○ Ga/min	○ USGa/min	
	○ l/h	○ m³/h	○ Ga/h	○ USGa/h	

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Product Enquiry Form
8012 Flowmeter
(S012 fitting + SE12 transmitter)

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SE12 electronic module		
Measuring method	○ Magnetic	○ Optical
Electrical connection	○ Free positionable 5 pin M12 male fixed plug	○ With 1 m cable via cable gland
Output signal	○ Transistor	⊗ Transistor and current
Transistor output feature		
Transistor operation	○ NPN	○ PNP
Output configured as	○ Raw frequency (paddle wheel rotation)	
	○ Proportional frequency (“V” determined volume per pulse, e.g. 0.2 l/Pulse) V = ☐ ☐ unit	
	○ Switching mode ○ Hysteresis inverted ○ Window inverted ○ Hysteresis not inverted ○ Window not inverted Switching threshold value: Low value = ☐ ☐ unit High value = ☐ ☐ unit Switch delay (0…3276 s) = ☐ s	
	○ Detection of flow direction (only with optical version) Switching mode ○ Inverted ○ Not inverted Switch delay (0…3276 s) = ☐ s	
Current output feature		
Wiring mode	○ Sinking	○ Sourcing
Output configured as	○ 4…20 mA current (correspond to the paddle wheel frequency 0…250 Hz)	
	○ 4…20 mA current (correspond to a specific flow range) Flow value corresponding to: 4 mA = ☐ ☐ unit 20 mA = ☐ ☐ unit	
Damping	○ Without	○ With (min. level 1, max. level 9) Level = ☐

Additional Requirements / Comment

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