DATA SHEET

Type 8098

PW / WFI

FLOWave SAW flowmeter

- For Purified Water (PW) and Water For Injection (WFI)
- No obstacles inside the measuring tube, compact, lightweight and low energy consumption
- Conforms to hygienic requirements, CIP/SIP compatible
- Ideal for liquids with low or no conductivity
- Direct flow velocity measurement
- Optional: ATEX/IECEx (II 3G/D), ATEX/IECEx/NEPSI or hazardous locations (HazLoc) certifications

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

Can be combined with

Type 2104 ▶
T-diaphragm valve with pneumatic actuator in stainless steel (Type ELEMENT) for decentralised automation

Type 2034 ▶
Multifunction bloc solutions

Type 3234 ▶
T-diaphragm valve with manually operated actuator

Type 8802 ▶
Continuous control valve systems ELEMENT – overview

Type 8619 ▶
multiCELL – multi-channel/ multi-function transmitter/ controller

Type 8653 ▶
AirLINE Field – the valve island – optimised for process automation

Type description

The Type 8098 flowmeter is part of the FLOWave product range. It is based on SAW (Surface Acoustic Waves) technology and is mainly designed for applications with the highest hygienic demands. This is achieved by using pharmaceutical grade stainless steel materials, a measuring tube completely free of any internal parts and an ideal outer hygienic design.

FLOWave offers a range of integrated functions including the advantages of flexibility, ease of cleaning, compact dimensions, lightweight, easy installation and handling, and is compliant with numerous standards.

Beside volume flow, a density measurement optional feature is available. With this option, the mass flow is calculated based on volume flow and density measurements. Alternatively, the mass flow for water can also be calculated based on volume flow and temperature measurement, utilizing integrated literature density data. Special functions derived from further process values (differentiation factor (DF), acoustic transmission factor and concentration) offer additional information about the particular liquid in use.

For additional information about the flowmeter, see the detailed standard data sheet **Type 8098** ▶.

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

© Christian Bürkert GmbH & Co. KG, Subject to alteration

Visit product website ▶

Table of contents

1. General technical data 3

2. Approvals and conformities 5

3. Materials 6

3.1. Material specifications 6
FLOWave L flowmeter 6
FLOWave S flowmeter 7

4. Dimensions 7

5. Product connections 8

5.1. Electrical connection 8

6. Performance specifications 8

6.1. Medium temperature diagram 8
6.2. Measuring range table 9

7. Product installation 10

7.1. Installation notes 10
Flow measurement 10
7.2. Selection of the nominal diameter 10

8. Product operation 11

8.1. Measurement principle 11
8.2. Special functions 11
Acoustic Transmission Factor (ATF) 11
Differentiation Factor (DF) 11
Other functions 11

9. Product accessories 12

9.1. USB-büS interface set Type 8923 12

10. Ordering information 12

10.1. Bürkert eShop 12
10.2. Bürkert product filter 12
10.3. Bürkert Product Enquiry Form 13
10.4. Bürkert 3D Model 13

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

1. General technical data

Product properties	
Material	
Further information on the materials can be found in chapter "3.1. Material specifications" on page 6.	
Surface quality	
Measurement tube (inner surface)	• Ra < 0.8 µm (0.76 µm = 30 µin., ASME BPE SF3) or • Ra < 0.4 µm electro-polished according to ISO 4288 (0.38 µm = 15 µin., ASME BPE SF4)
Measuring range	
Volume flow rate measurement	0...1.7 m^3/h up to 0...200 m^3/h
Flow velocity measurement	0...10 (full scale) m/s (bidirectional flow measurement)
Density measurement [1.]	0.8...1.3 g/cm^3 (inactive by default, selectable upon request)
Mass flow rate measurement [1.]	0...1 360 kg/h up to 0...260 000 kg/h (inactive by default, selectable upon request)
Temperature measurement	- 20...+ 140 °C (- 4...+ 284 °F)
Special function	• ATF: acoustic transmission factor • DF: differentiation factor On request: • Density • Mass flow • Concentration Further information can be found in chapter "8.2. Special functions" on page 11.
Performance data	
Reference conditions measurement	
Under reference conditions i.e. measuring fluid = water free from gas bubbles and solids, ambient and water temperature = 23 °C ± 1 °C (73.4 °F ± 1.8 F), pressure < 5 bar (72 psig), and short refresh time, while maintaining turbulent flow profile and flow velocities ≥ 1 m/s, with the minimum inlet (40 x DN) and outlet (1 x DN) distances and the appropriate internal diameter of the pipes. Deviations from reference conditions can be adjusted using the built-in adjustment procedures (see chapter "7.1. Installation notes" on page 10 and user manual **Type 8098** ▶).	
Volume flow rate measurement	
Measurement deviation	• ± 0.4 % of the measured value
Repeatability	• ± 0.2 % of the measured value
Mass flow rate measurement	**As an option** [1.]
Measurement deviation	• Standard K-factor: – ± 2.4 % of the measured value • After teach-in: – ± 1.4 % of the measured value at teach-in density and mass flow rate values
Repeatability	• ± 1.2 % of the measured value
Density measurement	**As an option** [1.]
Measurement deviation	• Standard product adjustment: ± 2 % of the measured value • After teach-in: ± 1 % of the measured value (at teach-in density value)
Repeatability	± 1 % of the measured value
Temperature measurement	
Measurement deviation	• For T° ≤ 100 °C (+ 212 °F): ± 1 °C (+ 1.8 °F) • For 100 °C (+ 212 °F) < T° < 140 °C (+ 284 °F): ± 1.5 %
Electrical data	
Operating voltage	12...35 V DC, filtered and regulated Connection to main supply: permanent
DC reverse polarity protection	Yes
Output	
Number of outputs	• FLOWave L – 3 outputs (1 analogue, 1 digital and 1 configurable: AO/DO) or – no output (Ethernet variant) • FLOWave S: – no output or – 1 output, configurable as AO/DO, pre-wired as sourcing (AO) or PNP non isolated (DO) or – 2 outputs, each configurable as AO/DO

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

Medium data

Fluid temperature	• - 20...+ 110 °C (- 4...+ 230 °F). The maximum fluid temperature can be restricted by the ambient operating temperature. • Max. conditions for sterilisation process: up to + 140 °C (+ 284 °F) (+ 130 °C (+ 266 °F) for ATEX/IECEx/NEPSI variant) for max. 60 min • Maximum temperature gradient: 10 °C/s (18 °F/s) (measured by the integrated sensor on the device)

Fluid pressure	**PN = Nominal pressure (in bar) according to EN 61010-1:2011, paragraph 11.7**			
DN / Pipe standard	**DIN 11850**	**ISO 1127**	**ASME BPE**	**SMS 3008**
DN 08, ⅜", ½"	PN 25	PN 25	PN 25	–
DN 15, ¾", DN 25, 1", 1½"	PN 25	PN 25	PN 25	PN 25
DN 40	PN 25	PN 16	–	PN 25
DN 50, 2"	PN 16	PN 16	PN 16	PN 16
DN 65, 2½", DN 80, 3"	PN 10	PN 10	PN 10	–

Product connections

Electrical connection	• FLOWave L – 2 x M20 × 1.5 cable glands and 1 × 5-pin M12 male connector (A-coded) for non-Industrial Ethernet variants (3 outputs) – 2 × 4-pin M12 female connectors (D-coded) and 1 × 5-pin M12 male connector (A-coded) for Industrial Ethernet variant (no output) • FLOWave S – 1 × 5-pin M12 male connector (A-coded) for device either without output or with 1 output – 1 × 8-pin M12 male connector (A-coded) for device with 2 outputs
Data transfer	• FLOWave L – All variants: communication via büS (Bürkert system bus, CANopen protocol), e.g. used for "Bürkert Communicator" – Ethernet variant (no output): industrial communication (only for): PROFINET, Ethernet/IP, Modbus TCP, EtherCAT • FLOWave S – device with 5-pin M12 male connector, without output: communication via büS (Bürkert system bus, CANopen protocol), e.g. used for "Bürkert Communicator" – device with 5-pin M12 male connector, with 1 output: IO-Link communication (which can be replaced by büS communication, but in this case no output is available). – device with 8-pin M12 male connector, with 2 outputs: büS connection only to the Bürkert Communicator for configuration and software update of the device. Due to the missing CAN shield the conventional büS/CANopen communication is not recommended.

Approvals and conformities

Directives	
CE directive	Further information on the CE Directive can be found in the standard data sheet **Type 8098** ▶.
Pressure equipment directive	Complying with article 4, paragraph 1 of 2014/68/EU directive
Explosion protection	On request: • ATEX/IECEx • ATEX/IECEx/NEPSI (China) See standard data sheet **Type 8098** ▶
North America (USA/Canada)	On request: • UL Listed, see standard data sheet **Type 8098** ▶ • CRN 0C21751 declaration [2.)]
Foods and beverages/Hygiene	• 3-A (28-06) Sanitary Standards Inc. • EHEDG (Type EL CLASS I) [7.)] • FDA declaration of conformity • On request: – USP class VI declaration – EC 1935/2004 declaration – EC 2023/2006 declaration – GB 4806.1-2016 declaration – GB 4806.9-2023 declaration

Materials	• Inspection certificate 3.1 – for DN 08, DN 65 and DN 80, ⅜", ½", 2½" and 3": the sensor is machined in one piece. – for DN 15...DN 50 and ¾"...2": the 2 process connections are welded to the measurement tube (up to 3 heat numbers). • Certification of compliance ASME BPE • On request: – Certification of conformity for the surface quality DIN 4762, EN ISO 4287, EN ISO 4288 – Certification of conformity for passivation and electro-polishing processes
Others	• Fluidic test report (test regarding volumetric flow rate or volume and mass flow rates, if density and mass flow rate option chosen) • On request: – Calibration certificate (volumetric flow rate, volume and mass flow rates and density) – Test report 2.2 – MTBF (Mean Time Between Failures) manufacturer declaration
Environment and installation	
Ambient temperature	• Operation: depends on the fluid temperature. Further information can be found in chapter "6.1. Medium temperature diagram" on page 8. • Storage: - 20...+ 70 °C (- 4...+ 158 °F)
Relative air humidity	≤ 85 %, without condensation
Operating condition	Continuous
Application range	The FLOWave is well-suited for WFI/PW (Water For Injections / Purified Water) applications, and compatible with CIP/SIP (Clean / Sterilizing In Place).
Degree of protection	• IP65, IP67 (according to IEC/EN 60529) 3.)5) • NEMA 4X (according to NEMA250) 4.)5.),
Installation category	Category I according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

1.) Only for a flowmeter with a process connection size of DN 08...DN 80 or ½"...3"
2.) Only for a flowmeter with an ASME BPE process connection
3.) Not evaluated by UL, only IP64 is evaluated by the ATEX notified body, by the IECEx certified body and by the NEPSI certified body.
4.) Only the device with UL HazLoc approval is evaluated by UL.
5.) Under the following conditions for:
- FLOWave L: when the product is wired, the cable glands are tightened, the connectors are plugged in, and the transmitter, the covers and/or the display module are locked. Unused cable glands must be sealed with the stopper seals provided (mounted upon delivery of the product). An unused M12 fixed connector must be protected by the screwed plug.
- FLOWave S: when the M12 connector is connected or the protective cap is screwed on and the transmitter is locked

2. Approvals and conformities

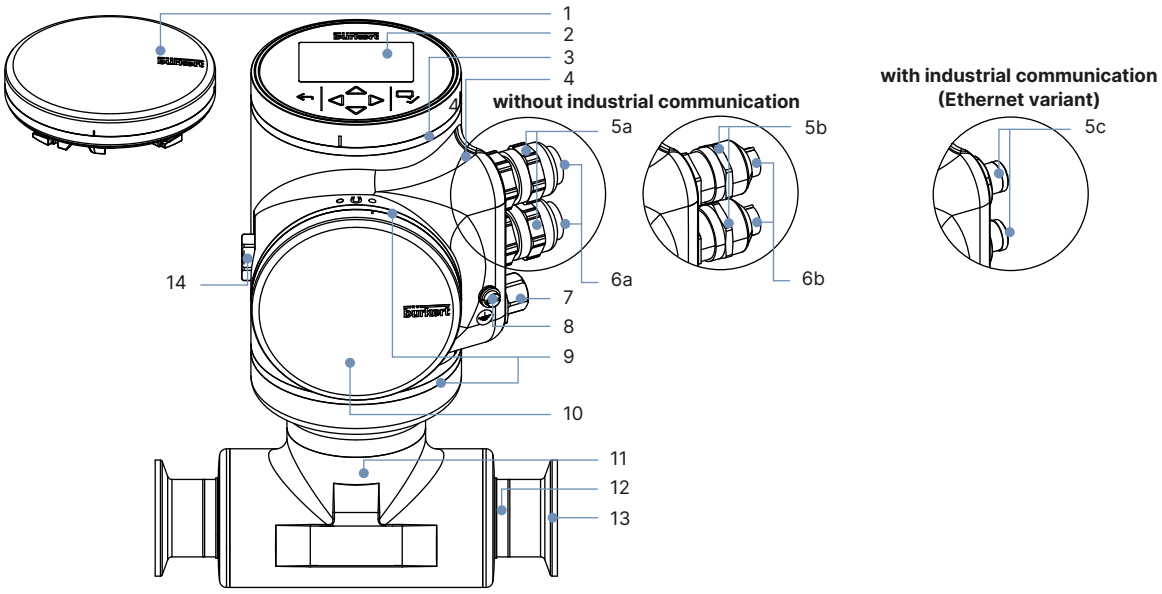
Note:
For additional information about the flowmeter approval and conformities, see the detailed standard data sheet **Type 8098** ▶.

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

3. Materials

3.1. Material specifications

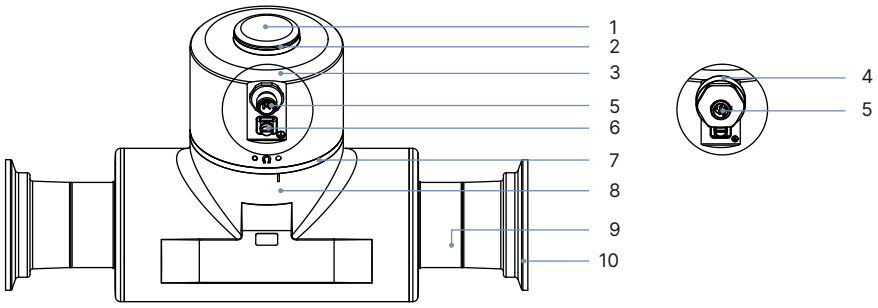
FLOWave L flowmeter



No.	Element	Material
1	Blind cover	Stainless steel 304/1.4301
2	Display module	Float glass, stainless steel 304/1.4301 and EPDM (ethylene propylene diene monomer) seal
3	Multi-colour LED behind seal (used for e.g. to indicate the status of the product, based on the NAMUR NE 107 standard)	VMQ silicone (methyl vinyl silicone)
4	Transmitter housing	Stainless steel 304/1.4301
5a	Cable glands	Body in nickel plated brass and seal in TPE (thermoplastic elastomer)
5b	Cable gland (full stainless steel or ATEX/IECEx/NEPSI variant)	Body in stainless steel 316L/1.4404 and seal in EPDM
5c	4-pin M12 female connectors with screwed plug	Body in stainless steel 304L/1.4307, contact support in PBT GF30 (polybutylene terephthalate 30 % glass fibre reinforced), seal in EPDM and screwed plug in stainless steel 316L/1.4404
6a	Blind plug	Black POM (polyoxymethylene)
6b	Blind plug (full stainless steel or ATEX/IECEx/NEPSI variant)	PA (polyamide, black) or PA6 (polyamide, red)
7	5-pin M12 male connector (wired to büS) with screwed plug	• Body in stainless steel 316L/1.4404, seal in NBR (nitrile butadiene rubber) if equipped with 5b, full stainless steel variant or with 5c (Ethernet variant) or in VMQ silicone (if equipped with 5b, ATEX/IECEx/NEPSI variant) and screwed plug in stainless steel 316L/1.4404 or • Body in nickel plated brass, seal in NBR (if equipped with 5a) and screwed plug-in nickel-plated brass
8	Functional earth	Cylinder screw, washer, washer spring in stainless steel A4 and blind rivet nut in stainless steel 1.4578/A4
9	Seal	VMQ silicone
10	Blind cover	Stainless steel 304/1.4301
11	Sensor housing	For sensor with process connection: • ≤ DN 50/2": stainless steel 304/1.4301 • > DN 50/2": stainless steel 316L/1.4435
12	Sensor measurement tube	Stainless steel 316L/1.4435 with low delta ferrite content
13	Process connection (either clamp connections or flange connections)	Stainless steel 316L/1.4435 with low delta ferrite content (machined in one piece with the measurement tube for DN 08, DN 65, DN 80, ⅜", 2½" and 3" and welded to the measurement tube for DN 15...DN 50 and ½"...2")
14	Pressure compensating element	Diaphragm in ePTFE (expanded polytetrafluoroethylene), O-ring in silicone 60 Shore A and body in stainless steel (316L/1.4404)

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

FLOWave S flowmeter



No.	Element	Material
1	Cover	Stainless steel 304/1.4301
2	Light guide for status display behind seal (used for e.g. indicating the status of the product, based on the NAMUR NE 107 standard)	PC (polycarbonate) and O-ring in EPDM (ethylene propylene diene monomer)
3	Transmitter housing	Stainless steel 304/1.4301
4	Adapter (HazLoc variant)	Stainless steel 304/1.4301 and O-ring in EPDM (between transmitter housing and adapter)
5	5-pin M12 male connector (wired to büS) or 8-pin M12 male connector (wired to büS as service interface [1.)] and 2 x AO/DO), with screwed plug	• Stainless steel 316L/1.4404 or 303/1.4305, seal in EPDM (between transmitter housing and M12 male connector) and screwed plug in plastic • HazLoc variant: stainless steel 316L/1.4404, seal in NBR (nitrile butadiene rubber) (between adapter and M12 male connector) and screwed plug stainless steel 316L/1.4404
6	Functional earth	• Cylinder screw, washer, washer spring: stainless steel A4 • Jumper of the ground terminal: stainless steel 304L
7	Seal	VMQ silicone (methyl vinyl silicone)
8	Sensor housing	For sensor with process connection: • ≤ DN 50/2": stainless steel 304/1.4301 • > DN 50/2": stainless steel 316L/1.4435
9	Sensor measurement tube	Stainless steel 316L/1.4435 with low delta ferrite content
10	Process connection (either clamp connections or flange connections)	Stainless steel 316L/1.4435 with low delta ferrite content (machined in one piece with the measurement tube for DN 08, DN 65, DN 80, ⅜", 2½"and 3" and welded to the measurement tube for DN 15...DN 50 and ½"...2")

1.) A service büS connection is recommended for configuring the device with the Bürkert Communicator and not for the process.

4. Dimensions

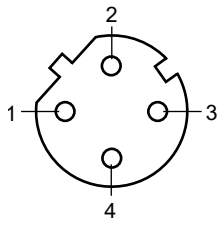
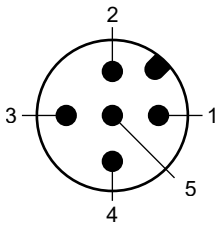
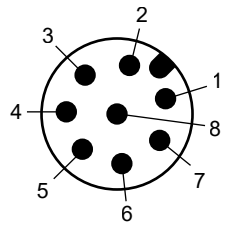
Note:
For additional information about the flowmeter approval and conformities, see the detailed standard data sheet **Type 8098** ▶.

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

5. Product connections

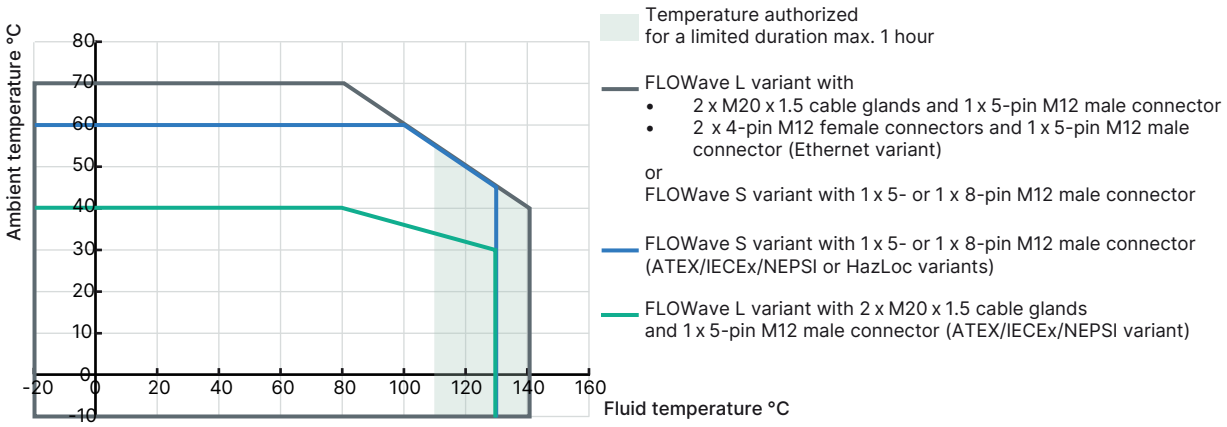
5.1. Electrical connection

Connector type	Connection definition		
4-pin M12 female connector (D-coded)	**Pin**	**Industrial Ethernet**	
	**1**	Transmit +	
	2	Receive +	
	3	Transmit -	
	4	Receive -	
5-pin M12 male connector (A-coded)	**Pin**	**Bürkert system bus (büS)**	**IO-Link**[1.]
	**1**	CAN shielding	L + (24 V DC, system supply)
	2	CAN V+: + 24 V DC (12...35 V DC)	AO/DO (analogue or digital output)
	3	GND / CAN_GND	L - (0 V (GND), system supply)
	4	CAN_H	C/Q (IO-Link communication)
	5	CAN_L	Not connected
8-pin M12 male connector (A-coded)	**Pin**	**Service büS only and 2 configurable outputs AO/DO**	
	**1**	+ 24 V DC (12...35 V DC)	
	2	GND	
	3	CAN_L	
	4	CAN_H	
	5	1AO/DO - (analogue, digital or disabled output)	
	6	1AO/DO + (analogue, digital or disabled output)	
	7	2AO/DO - (analogue, digital or disabled output)	
	8	2AO/DO + (analogue, digital or disabled output)	

1.) Either a 4-wire or 5-wire cable can be used with a 5-pin M12 female connector (A-coded).

6. Performance specifications

6.1. Medium temperature diagram



6.2. Measuring range table

Note:

- In the following table, the term “full scale” refers to full scale of volume flow rate, i.e. the flow rate corresponding to 10 m/s flow velocity.
- Highlighted in green is the measuring range for water, where turbulent flow profile is assumed. Turbulent flow is recommended for applications with purified water and water for Injection for best hygienic design.

DN	Pipe standard	Flow velocity in the measuring tube 0.1 / 1	1 / 10	10 m/s 100 % of FS
⅜"	ASME BPE	0.017 m³/h	0.17 m³/h 0.22 m³/h at1.3 m/s	1.7 m³/h
½"	ASME BPE	0.025 m³/h	0.25 m³/h 0.27 m³/h at 1.0 m/s	2.5 m³/h
08	DIN 11850	0.028 m³/h	0.28 m³/h 0.28 m³/h at 1.1 m/s	2.8 m³/h
	ISO 1127	0.03 m³/h	0.3 m³/h 0.29 m³/h at 1.0 m/s	3.0 m³/h
¾"	ASME BPE	0.07 m³/h	0.7 m³/h 0.44 m³/h at 0.6 m/s	7.0 m³/h
15	DIN 11850	0.073 m³/h	0.73 m³/h 0.45 m³/h at 0.6 m/s	7.3 m³/h
	ISO 1127	0.093 m³/h	0.93 m³/h 0.51 m³/h at 0.5 m/s	9.3 m³/h
1"	ASME BPE	0.14 m³/h	1.4 m³/h 0.62 m³/h at 0.4 m/s	14 m³/h
25	SMS 3008	0.14 m³/h	1.4 m³/h 0.63 m³/h at 0.4 m/s	14 m³/h
	DIN 11850	0.19 m³/h	1.9 m³/h 0.73 m³/h at 0.4 m/s	19 m³/h
	ISO 1127	0.25 m³/h	2.5 m³/h 0.84 m³/h at 0.3 m/s	25 m³/h
1½"	ASME BPE	0.34 m³/h	3.4 m³/h 0.98 m³/h at 0.3 m/s	34 m³/h
40	SMS 3008	0.36 m³/h	3.6 m³/h 1.11 m³/h at 0.3 m/s	36 m³/h
	DIN 11850	0.41 m³/h	4.1 m³/h 1.07 m³/h at 0.25 m/s	41 m³/h
	ISO 1127	0.56 m³/h	5.6 m³/h 1.25 m³/h at 0.2 m/s	56 m³/h
2"	ASME BPE	0.64 m³/h	6.4 m³/h 1.34 m³/h at 0.2 m/s	64 m³/h
50	SMS 3008	0.67 m³/h	6.7 m³/h 1.37 m³/h at 0.2 m/s	67 m³/h
	DIN 11850	0.71 m³/h	7.1 m³/h 1.41 m³/h at 0.2 m/s	71 m³/h
	ISO 1127	0.90 m³/h	9.0 m³/h 1.60 m³/h at 0.2 m/s	90 m³/h
2½"	ASME BPE	1.02 m³/h	10.2 m³/h 1.70 m³/h at 0.2 m/s	102 m³/h
65	DIN 11850	1.23 m³/h	12.3 m³/h 1.87 m³/h at 0.2m/s	123 m³/h
	ISO 1127	1.47 m³/h	14.7 m³/h 2.04 m³/h at 0.1 m/s	147 m³/h
3"	ASME BPE	1.50 m³/h	15.0 m³/h 2.06 m³/h at 0.1 m/s	150 m³/h
80	DIN 11850	1.85 m³/h	18.5 m³/h 2.29 m³/h at 0.1 m/s	185 m³/h
	ISO 1127	2.0 m³/h	20.0 m³/h 2.382m³/h at 0.1 m/s	200 m³/h

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

7. Product installation

7.1. Installation notes

Flow measurement

Note:
The device is not suitable for use in gaseous media and steam. However, their flow does not have any negative effect on the device or its operation. Other liquids flowing through the product afterwards are measured correctly as before.

The factory calibration of the FLOWave is done under reference conditions with inlet section (40 x DN) and outlet section (1 x DN) and the appropriate inner diameter of the pipes. The deviation from the reference conditions can be adjusted using the built-in adjustment procedures (K factor adjustment, teach-in procedure, etc.). For example, under the condition of an inlet section of 10 x DN after an elbow, a special correction K factor can be applied to the FLOWave flowmeter to achieve a measurement deviation of ±1% of the measured value for flow velocities ≥ 1 m/s to full scale. We can support you, if necessary, do not hesitate to contact us.

The device can be installed into either horizontal, inclined or vertical pipes. For optimal operation, the flowmeter is best installed in a vertical pipe to prevent air or gas bubbles in the measurement pipe. **For proper operation, always ensure that the measurement tube is completely filled.** According to 3-A compliance and EHEDG, an angle of at least 5° (for SMS or Series A connections) or 3° (for all other available connections) relative to the horizontal is required to achieve complete drainage. Further information on the installation can be found in the operating instructions available on our website under the "User Manuals" heading for **Type 8098** ▶.
The suitable nominal diameter is selected using the diagram for selecting the nominal diameter of the pipe. See chapter "6.2. Measuring range table" on page 9.

7.2. Selection of the nominal diameter

The following diagram is used to determine the appropriate nominal diameter of the pipe and fitting for the application, according to the flow velocity and the flow rate. The appropriate diameter is shown at the point at which the flow velocity and flow rate of the liquid intersect in the diagram below.

Example 1:
Flowmeter with process connection according to DIN 32676 Series B (pipe ISO 1127) or DIN 11864-2 form A Series B (pipe ISO 1127)

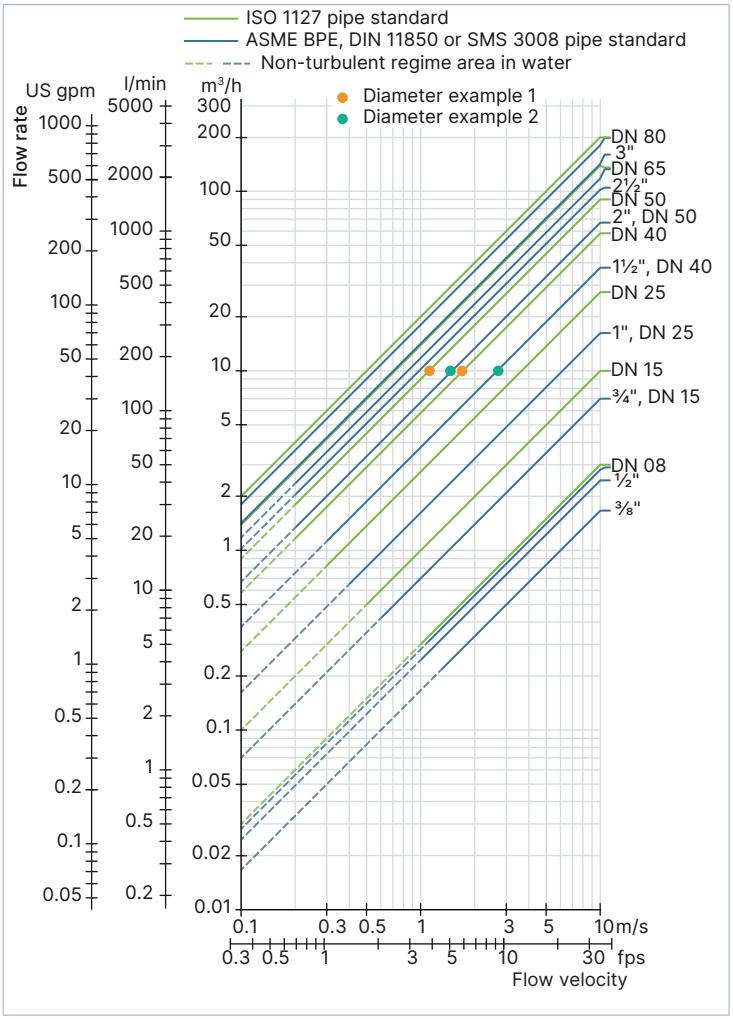
- Nominal flow: 10 m³/h
- Optimal flow velocity: 1...3 m/s

Result: select a pipe size of DN 40 or DN 50.

Example 2:
Flowmeter with process connection according to DIN 32676 Series A (pipe DIN 11850) or DIN 11864-2 Series A (pipe DIN 11850)

- Nominal flow: 10 m³/h
- Optimal flow velocity: 1...3 m/s

Result: select a pipe size of DN 40 or DN 50.



DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

8. Product operation

8.1. Measurement principle

Note:
For additional information about the flowmeter approval and conformities, see the detailed standard data sheet **Type 8098** ▶.

8.2. Special functions

Note:

- DF and ATF functions are included as standard on all devices. Devices where they are disabled, can be updated in the field to obtain the special functions. Contact your local Bürkert representative in that case.
- Density, mass flow and concentration functions must be selected upon initial order of the device.

Acoustic Transmission Factor (ATF)

For the detection of gas bubbles and solid particles the device (from firmware version 01.05.00) uses an acoustic transmission factor (ATF) with a measuring range of 0...120 %, whose value is constantly recorded and directly influenced by the presence of gas bubbles and solid particles. Only stable ATF signals ranging above typically 10% are accepted as valid for the computation of the other process values.

Differentiation Factor (DF)

A differentiation factor (DF), with a measuring range of 0.8...1.3, is available for the detection and differentiation of liquids. This continuously measured value, which uses water as a reference fluid, is temperature-compensated and so its value is representative in a tight value range for each liquid. The changes in value of this process measurement enable differentiation between different liquids.

Before SW version 05.00.00, the differentiation factor was named density factor. As the density option has been added, the name has been changed to avoid confusion.

Other functions

For water, the mass flow reading can always be obtained using the volume flow and the temperature measurement. In that case, the integrated (temperature dependent) literature density of water is used to calculate the water mass flow.
This option is an alternative to mass flow via density measurement, and for water can reach higher accuracies.

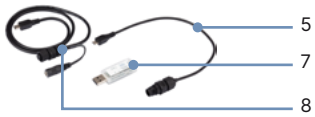
DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

9. Product accessories

9.1. USB-büS interface set Type 8923

Note:
To configure a device without a display, use the USB-büS interface set Type 8923 and the Bürkert Communicator software Type 8920. The büS adapter cable, article no. 773286, is also required for the FLOWave S with 2 outputs.

For additional information about the accessories ordering information, see the detailed standard **data sheet Type 8098** ▶ and **Software manual Type 8920** ▶.

Accessories	No.	Description
USB-büS interface set 1 	**1**	Quick-Start
	2	Power supply: 100...240 V AC/24 V DC 1 A and power supply adapters for worldwide use
	3	büS terminating resistor on büS Y-splitter
	4	5-pin M12 male connector wired on free end cable, cable length: 0.2 m
	5	büS connection cable with 5-pin M12 male connector, micro USB B plug, cable length: 0.3 m
	6	büS adapter with 5-pin M12 male connector, A-coded to 5-pin M12 male connector, A-coded
	7	büS stick (USB to büS/CANopen adapter)
	8	büS service cable with 5-pin M12 female connector, mini USB plug and circular female connector for power supply, cable length: 0.7 m
	9	Magnetic key
USB-büS interface set 2 		The Bürkert Communicator software can be downloaded from our website under the "Software" heading of **Type 8920** ▶.

10. Ordering information

10.1. Bürkert eShop

Bürkert eShop – Easy ordering and quick delivery

Want to find the Bürkert product or spare part you need quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

Order online now

10.2. Bürkert product filter

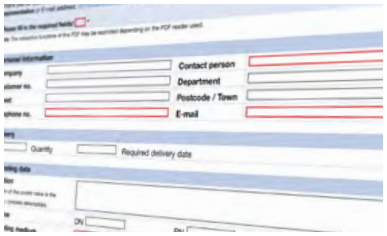
Bürkert product filter – Find the right product quickly

Want to select products conveniently based on your technical requirements?
Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026

10.3. Bürkert Product Enquiry Form



Bürkert Product Enquiry Form – Create a quick and compact enquiry

Want to make a specific product enquiry based on your technical requirements? Then use our Product Enquiry Form for this purpose. There you will find all the relevant information for your Bürkert contact. This will enable us to provide you with the best possible advice.

Fill out the form now

10.4. Bürkert 3D Model

Bürkert 3D Model - Interactive Animation

3D Model and Interactive Animation are available on the website of the flowmeter Type 8098.

See **website of the Type 8098** ▸ under “Applications and Tools”.

DTS 1000700157 EN Version: D Status: RL (released | freigegeben | valide) printed: 28.10.2026