bürkert
FLUID CONTROL SYSTEMS

Liquid flow controller (LFC)

- High dynamic control through fast flow measurement
- Applicable for liquid dosing up to 600 ml/min (36 l/h)
- No moving parts in medium
- Protection class IP65
- Fieldbus optional

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 6606
2/2 or 3/2 way Rocker-Solenoid Valve with separating diaphragm

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

Type description

Type 8719 is a device for liquid flow control in process technology. The measured value provided by the sensor will be compared in the digital control electronics with the predefined set point according to the signal; if a control difference is present, the control value output to the proportional valve will be modified using a PI-control algorithm. In this way, the flow can be maintained at a fixed value or a predefined profile can be followed, regardless of pressure changes or other disturbances in the system. As a control element, a proportional valve working at low friction guarantees the high sensitivity and good control characteristics of the unit.

Phase out

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Visit product website

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1. General technical data

Product properties	
Dimensions	115 × 137.5 × 37 mm (width × height × depth) Further information can be found in chapter "4. Dimensions" on page 5.
Material	
Seal	FKM, EPDM or FFKM
Housing	PBT
Base block	Stainless steel 1.4404
Total weight	Approx. 1200 g
LED display	Status indication: 1. Power 2. Communication 3. Limit 4. Error
Performance data	
Nominal flow range (Q_N)	1.5...36 l/h (25...600 ml/min) regarding water
Operating pressure [1)]	Max. 10 bar (145 psi) (depending on the nominal diameter of the proportional valve)
Measuring accuracy	± 1.5 % of reading ± 0.5 % FS (under calibration conditions to achieve best measurement results)
Repeatability	± 0.5 % FS
Measuring span	1:10
Response time ($t_{95\,\%}$)	< 500 ms
Electrical data	
Operating voltage	24 V DC
Power consumption	Max. 7.5 W (10 W with fieldbus variant)
Residual ripple	< 2 %
Voltage tolerance	± 10 %
Electrical connection	Socket round, 8-pin, Socket Sub-HD, 15-pin, Plug or socket M12, 5-pin (with fieldbus)
Medium data	
Operating medium	Clean and low-viscosity liquids
Calibration medium	Water (conversion to operating medium with correction function)
Medium temperature	-10 °C...+ 40 °C
Viscosity	0.4...4 cSt
Process/Port connection & communication	
Digital outputs	2 relay outputs: 1. Limit (desired value can not be reached) 2. Error (e.g. sensor failure) Loading capacity: max. 60 V, 1 A, 60 VA
Digital inputs	3 switching inputs: 1. Start Autotune 2. Open valve (for purging) 3. Not assigned
Digital communication interface	Digitally via fieldbus: • PROFIBUS DPV1 • CANopen
Analogue interfaces	4...20 mA, 0...20 mA, 0...10 V or 0...5 V Input impedance > 20 kΩ (voltage) resp. < 300 Ω (current) Maximum current: 10 mA (voltage output) Maximum load: 600 Ω (current output)
Port connection	G ⅛, NPT ⅛, G ¼, NPT ¼
Approvals and conformities	
Protection class	IP65
Environment and installation	
Installation position	Horizontal or vertical
Ambient temperature	0 °C...+ 55 °C

Accessories	
Software	Mass Flow Communicator

1.) Overpressure to atmospheric pressure

2. Approvals and conformities

2.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants can be supplied with the below mentioned approvals or conformities.

2.2. Conformity

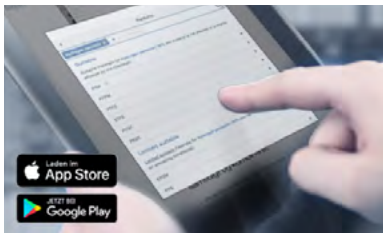
In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

2.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

3. Materials

3.1. 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

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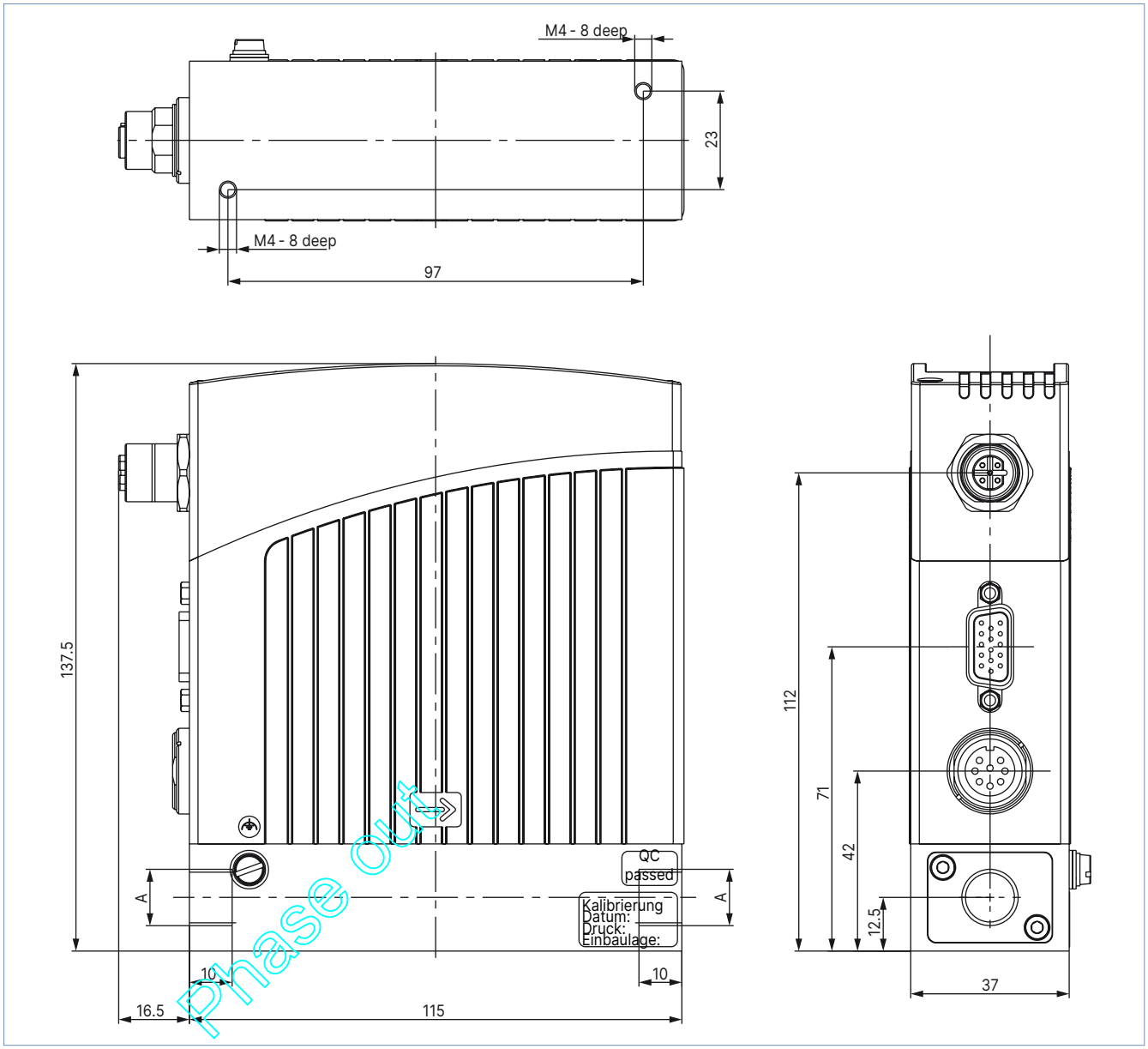
4. Dimensions

4.1. Threaded variant

Note:

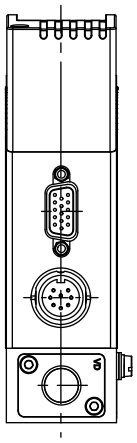
- Dimensions in mm
- In devices without fieldbus communication there is no electrical M12 connector in the upper housing part.

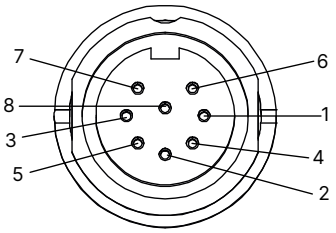


Size A	
G ⅛	G ¼
NPT ⅛	NPT ¼

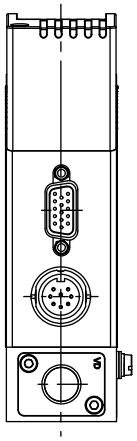
5. Device/Process connections

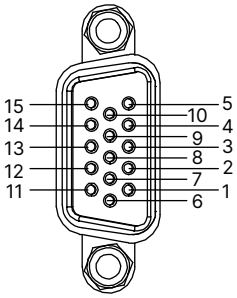
5.1. Analogue variant/fieldbus variant



Socket M16, round, 8-pin	Pin	Assignment
	1	Power supply + 24 V DC
	2	Relay 1 – reference contact
	3	Relay 2 – reference contact
	4	Relay 1 – normally closed contact
	5	Relay 1 – normally open contact
	6	24 V supply GND
	7	Relay 2 – normally open contact
	8	Relay 2 – normally closed contact

5.2. Analogue variant



Socket D-Sub HD15	Pin	Assignment	
		Analogue control unit	Bus actuation
	1	Not connected	Not connected
	2	Not connected	Not connected
	3	Actual value output +	Not connected
	4	Binary input 2	
	5	12 V output (only for in-plant use)	
	6	RS232 TxD (direct connection to computer)	
	7	Binary input 1	
	8	GND (for binary inputs)	
	9	Only in-plant use (do not connect)	
	10	12 V output (only for in-plant use)	
	11	12 V output (only for in-plant use)	
	12	Binary input 3	
	13	Actual value output GND	Not connected
	14	RS232 RxD (direct connection to computer)	
	15	DGND (for RS232-interface)	

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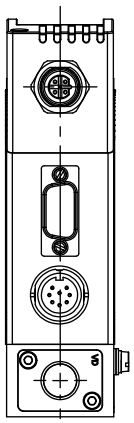
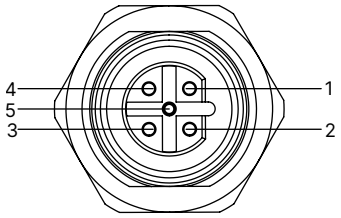
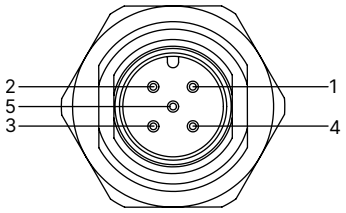
5.3. Fieldbus variant



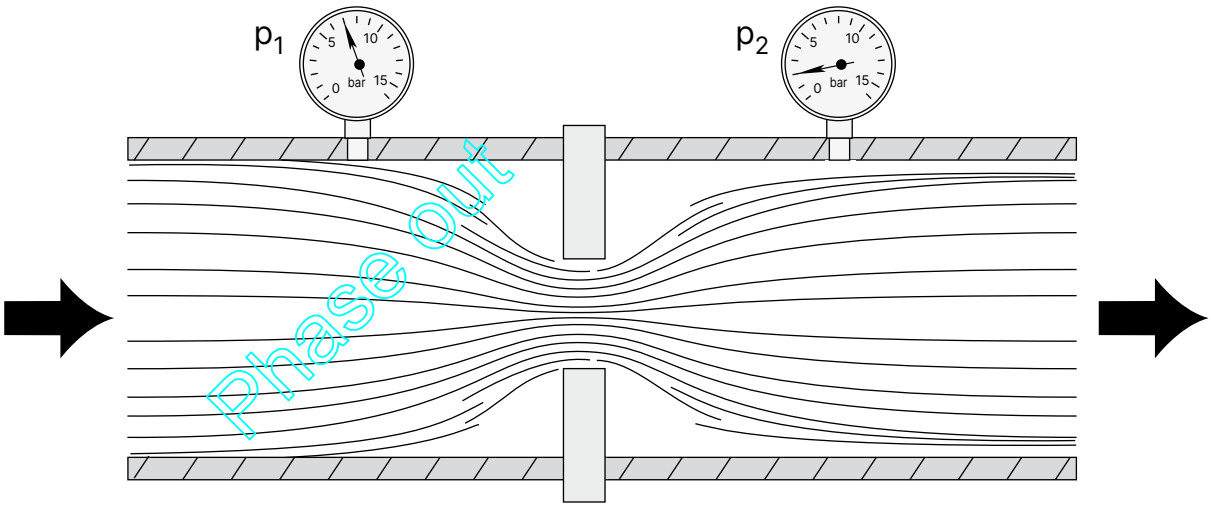
PROFIBUS DPV1 – socket B-coded M12 (DPV1 max. 12 Mbaud)	Pin	Assignment
	1	VDD (only for termination resistor)
	2	RxD/TxD – N (A-line)
	3	DGND
	4	RxD/TxD – P (B-line)
	5	Not connected

CANopen – Plug A-coded M12	Pin	Assignment
	1	Shielding
	2	Not connected
	3	DGND
	4	CAN_H
	5	CAN_L

6. Product operation

6.1. Measuring principle

- The sensor measures the flow by means of differential pressure. An orifice in the main channel causes pressure loss at liquid flow which is measured by the differential pressure sensor. The sensor feedbacks a precise and temperature compensated signal out of which the electronics calculates the corresponding flow.
- To avoid a blockage of the aperture by contaminated mediums an upstream filter is recommended.



7. Ordering information

7.1. Bürkert eShop

Bürkert eShop – Easy ordering and quick delivery

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

Order online now

7.2. Recommendation regarding product selection

Note:
Contact your Bürkert partner for device design.

The decisive factors for the perfect functioning of an LFM within the application are the fluid compatibility, the pressure range and the correct choice of the flow meter range. The pressure loss over the LFM averages in typical applications approx. 500 mbar, with up to 2 bar inlet pressure (overpressure to atmospheric pressure). The specification of the inlet pressure, $p_i$max, which can be expected is necessary for the selection of the suitable differential pressure sensor.

7.3. Bürkert product filter

Bürkert product filter – Get quickly to the right product

You want to select products comfortably 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

7.4. Ordering chart accessories

Overview of accessories

Note:
The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

Description	Article no.
Connections/cables	
M16 circular plug, 8-pin, soldered connection	918299
M16 circular plug with cable, 8-pin, cable length: 5 m, assembled on one side	787733
M16 circular plug with cable, 8-pin, cable length: 10 m, assembled on one side	787734
D-Sub HD15 plug with cable, 15-pin, cable length: 5 m, assembled on one side	787735
D-Sub HD15 plug with cable, 15-pin, cable length: 10 m, assembled on one side	787736
Adapters [1.)]	
RS232 adapter (for connecting a PC in combination with an extension cable)	654757
Extension cable for RS232, M12 socket and/or M12 plug, 9-pin cable length: 2 m	917039
RS422-Adapter (RS485-kompatibel)	666370
USB-Adapter	670696
USB connection cable, cable length: 2 m	772299
Adapter for manual bus address setting (instead of via AF)	667525

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Description	Article no.
Accessories for fieldbus	
PROFIBUS DPV1 (B-coded)	
M12 plug, 5-pin, straight, B-coded [2.]	918198
M12 socket (coupling), straight [2.]	918447
Y-distributor [2.]	902098
PROFIBUS T distributor	918531
PROFIBUS terminating resistor, M12 plug, B-coded	902553
GSD file (PROFIBUS), EDS file (CANopen)	**LINK**
CANopen (A-coded)	
M12 plug, 5-pin, straight [2.]	917115
M12 circular socket with plastic threaded clamping ring, 5-pin, straight, to be wired [2.]	917116
Y push-in connector, M12, 5-pin, LUM [2.]	788643
T-distributor	On request
Terminating resistor	On request
GSD file (PROFIBUS), EDS file (CANopen)	**LINK**

1.) The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.
2.) For space reasons, M12 individual cable plugs may not be suitable for simultaneous use on the same side as a Y distributor. Use a commercially available covered cable in this case.

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Adapter sketch