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 6011 ▶
Plunger valve 2/2 way direct-acting

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

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

Type description

Type 8719 is an instrument 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 fi xed 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.

Table of contents

1. General technical data

Product properties	
Material	
Body	Stainless steel
Housing	PBT
Seal	FKM, EPDM or FFKM
Dimensions	115 × 137.5 × 37 (BxHxT) Detailed information can be found in chapter "3. Dimensions" on page 5.
Total weight	Approx. 1200 g
LED display	Indication for: 1. Power 2. Communication 3. Limit 4. Error
Performance data	
Full scale range (Q_{Nom})	1.5...36l/h (25...600ml/min) regarding water
Measuring range	1:10
Max. operating pressure	Up to max. 10 barg; typical max. 2 barg
Measuring accuracy	±1.5 % o. R. ±0.5 % F. S.
Repeatability	±0.5 % F. S.
Response time (t95 %)	<500 ms
Electrical data	
Operating voltage	24 V DC
Power consumption	Max. 7.5 W (10 W with fieldbus version)
Voltage tolerance	±10 %
Residual ripple	<2 %
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 viscous liquids
Calibration medium	Water (conversion to operating medium with correction function)
Medium temperature	-10 °C…+40 °C
Viscosity (max.)	0.4 to 4 cSt
Process/Port connection & communication	
Port connection	G ⅛, NPT ⅛, G ¼, NPT ¼
Digital outputs	Two relay-output for: 1. Limit (desired value can not be achieved) 2. Error (e.g. sensor failure) Current output: max. 60 V, 1 A, 60 VA
Digital inputs	Three: 1. Start Autotune 2. Open valve (for purging) 3. Not assigned
Digital (communication) interface	Digital via Fieldbus: • PROFIBUS DP V1 • 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) Max. load: 10 mA (Voltage output); max. load: 600 Ω (Current output)
Environment and installation	
Ambient temperature	0 °C…55 °C
Installation position	Horizontal or vertical
Degree of protection	IP65

บริษัท ฟลูเทค จำกัด
FLU-TECH CO.,LTD
845/3- 4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270
845/3-4 Thepharak RD., T.Thepharak, A.Muang, Samutprakarn 10270 THAILAND
Tel. 0 2384 6060, Fax 0 2384 5701, Email : sales@flutech.co.th, www.flutech.co.th
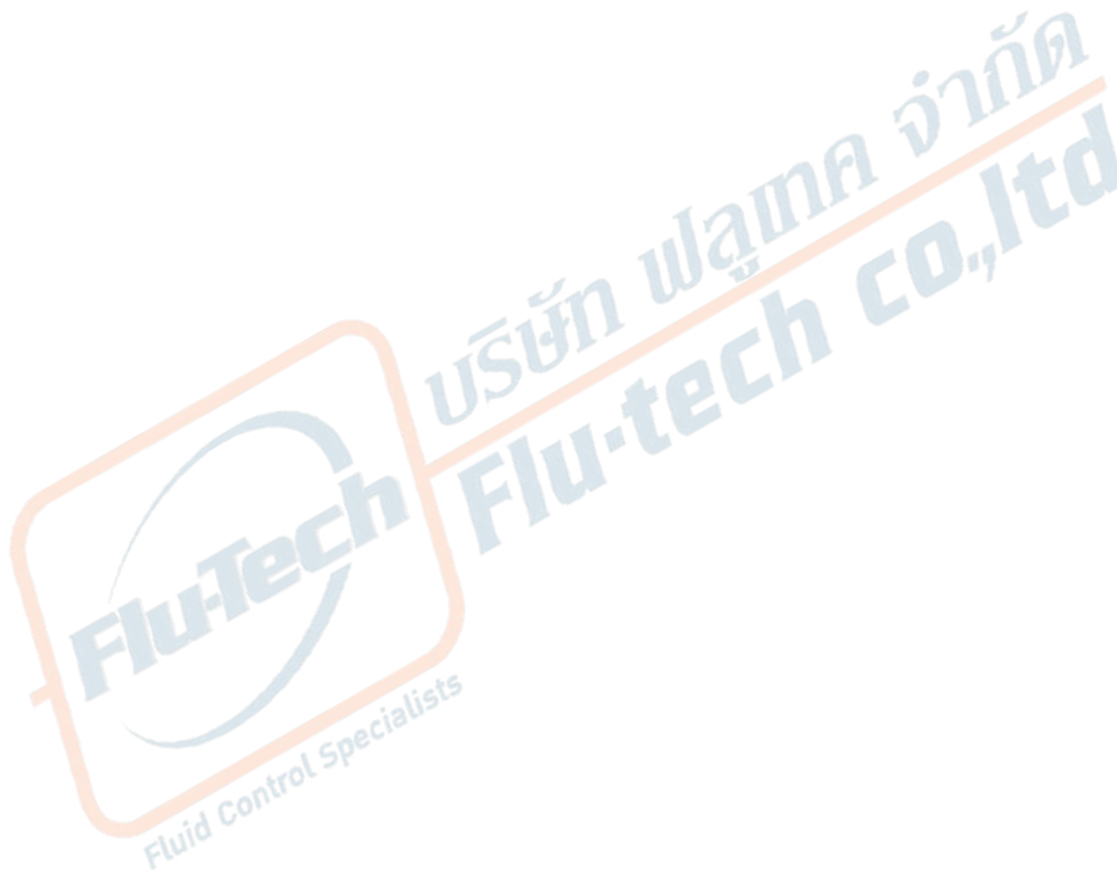
2. Materials

2.1. 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
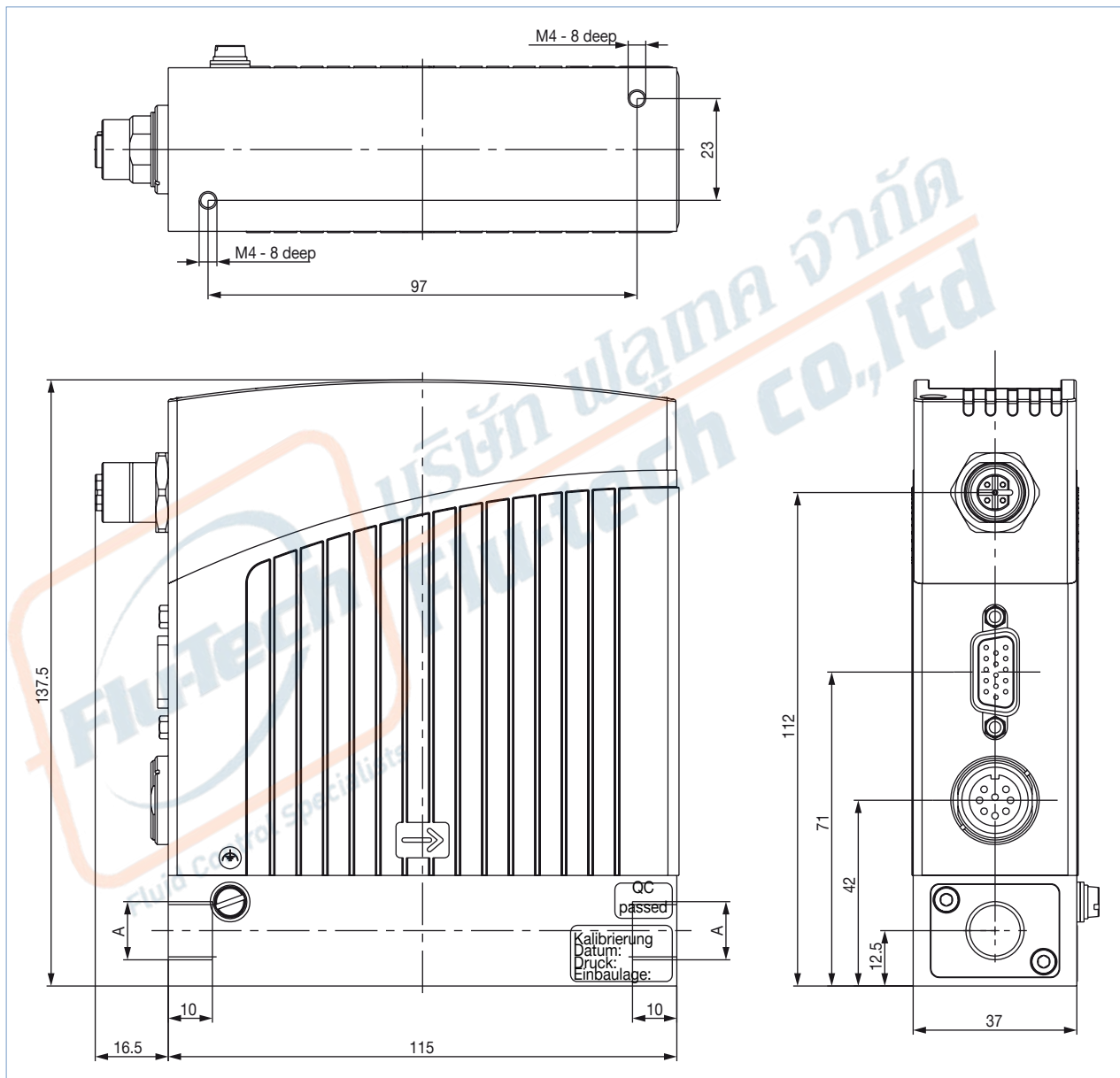
burkert

3. Dimensions

3.1. Standard version

Note:

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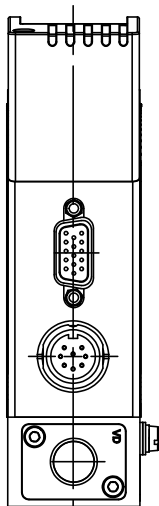- In devices without fieldbus communication there is no electrical M12 connector in the upper housing part.

Size A	
G ⅛	G ¼
NPT ⅛	NPT ¼

4. Device/Process connections

4.1. Analogue version/Fieldbus version

Note:
- Optional Pin 7 and 8 with bus version as transmitter input possible.
- The cable length for RS232/actual value signal is limited to 30 meters.

Analogue version

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 internal company use)	
	6	RS232 TxD (direct connection to computer)	
	7	Binary input 1	
	8	GND (for binary inputs)	
	9	only company internal use (do not connect!)	
	10	12 V-Output (only for internal company use)	
	11	12 V-Output (only for internal company use)	
	12	Binary input 3	
	13	Actual value output GND	Not connected
	14	RS232 RxD (direct connection to computer)	
	15	DGND (for RS232-interface)	

Fieldbus version

Socket M16, round, 8 pin	Pin	Assignment
	1	24 V-supply +
	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

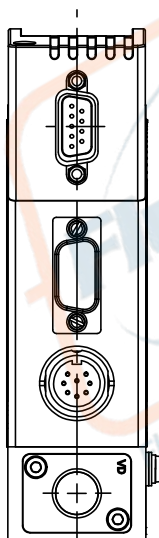| Socket D-Sub 9 pin	Pin	Assignment	
	1	Shield	Shield
	2	Not connected	CAN-L data line
	3	RxD/TxD - P (B-line)	GND
	4	RTS (control signal for repeater)	Not connected
	5	GND	Not connected
	6	VDD (only for termination resistor)	Not connected
	7	Not connected	CAN-H data line
	8	RxD/TxD - N (A-line)	Not connected
	9	Not connected	Not connected

Note:

- Optional Pin 7 and 8 with bus version as transmitter input possible.
- The cable length for RS232/ actual value signal is limited to 30 meters.
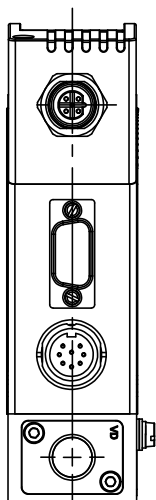
PROFIBUS DP – socket B-coded M12 (DPV1 max. 12 Mbaud)	Pin	Assignment
	1	VDD (only for termination resistor)
	2	RxD/TxD – N (A-line)
	3	DGND
	4	RxD/TxD – P (B-line)
	5	Not connected
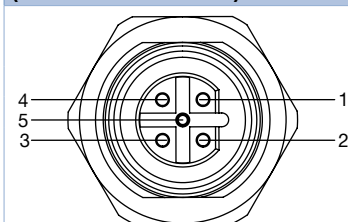
CANopen – Plug A-coded M12	Pin	Assignment
	1	Shield
	2	Not connected
	3	DGND
	4	CAN_H
	5	CAN_L
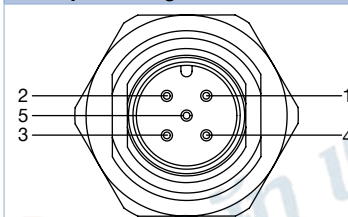
5. Product operation

5.1. 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.

บริษัท ฟลูเทค จำกัด 845/3- 4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270
FLU-TECH CO.,LTD 845/3-4 Thepharak RD., T.Thepharak, A.Muang, Samutprakarn 10270 THAILAND
Tel. 0 2384 6060, Fax 0 2384 5701, Email : sales@flutech.co.th, www.flutech.co.th
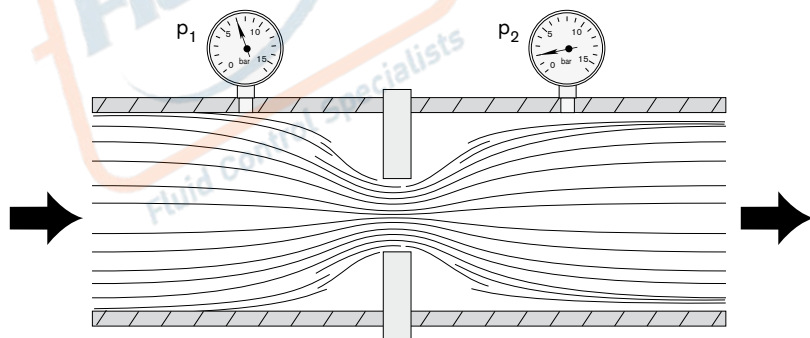
6. Ordering information

6.1. Bürkert eShop – Easy ordering and quick delivery

Bürkert eShop – Easy ordering and fast 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

6.2. Recommendation regarding product selection

Note:
For the proper choice of the actuator orifice and differential pressure sensor within the LFC, not only is the maximum flow rate Q_{Nom} required, but also the pressure values directly before and after the LFC (p_1, p_2) at this flow rate Q_{Nom} should be known. In general, these pressures are not the same as the overall inlet and outlet pressures of the whole plant, because usually there are additional flow resistors (tubing, additional shut-off valves, nozzles etc.) present both before and after the controller.
Please use the „**Product Enquiry Form**" at the end of this document to indicate the pressures directly before and after the LFC. If these should be unknown or not accessible to a measurement, estimates are to be made by taking into account the approximate pressure drops over the flow resistors before and after the LFC, respectively, at a flow rate of Q_{Nom}.
In addition, please quote the maximum inlet pressure p_1 max to be encountered. This data is needed to make sure the actuator is able to provide a close-tight function within all the specified modes of operation. The knowledge of the maximum inlet pressure is also necessary to select an adequate differential pressure sensor

Please use the „**Product Enquiry Form**" at the end of this document and send us a copy of the enquiry with information about the application.

6.3. 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

บริษัท ฟลูเทค จำกัด
FLU-TECH CO.,LTD
845/3- 4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270
845/3-4 Thepharak RD., T.Thepharak, A.Muang, Samutprakarn 10270 THAILAND
Tel. 0 2384 6060, Fax 0 2384 5701, Email : sales@flutech.co.th, www.flutech.co.th

6.4. Ordering chart accessories

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

Description	Article no.
Connections/Cables	
Round plug M16, 8 pin (solder connection)	918299 🛒
Round plug M16, 8 pin with 5 m cable	787733 🛒
Round plug M16, 8 pin with 10 m cable	787734 🛒
Plug D-Sub HD15, 15 pin with 5 m cable	787735 🛒
Plug D-Sub HD15, 15 pin with 10 m cable	787736 🛒
Adapters[1]	
RS232 adapter for connection to a computer, connection with an extension cable (Article no. 917039 🛒)	654757 🛒
Extension cable for RS232 9 pin socket/plug 2 m	917039 🛒
RS422-Adapter (RS485-kompatibel)	666370 🛒
USB-Adapter	670696 🛒
USB connection cable 2 m	772299 🛒
Adapter for manual setting of bus address	667525 🛒
Communication software Mass Flow Communicator	LINK ▶
Accessories for Fieldbus	
PROFIBUS-DP (B-coded)	
Plug M12[2]	918198 🛒
Socket M12 (coupling)[2]	918447 🛒
Y-junction[2]	902098 🛒
T-junction	918531 🛒
Termination resistor	902553 🛒
GSD-File (PROFIBUS), EDS-File (CANopen)	LINK ▶
CANopen (A-coded)	
Plug M12[2]	917115 🛒
Socket M12 (coupling)[2]	917116 🛒
Y-Stück[2]	788643 🛒
T-junction	On request
Termination 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.) The M12 single connectors as listed here are not suitable for their simultaneous use with the Y-piece for reasons of space. Please always use at least one commercially available overmoulded cable whose connector is usually smaller.

bürkert

6.5. Adapter sketch

Adapter for manual setting of a bus address
667 525

M12 P-DP: 918 198
CAN: 917 115

M12 P-DP: 918 447 OR
CAN: 917 116

T junction
P-DP: 918 531
CAN: on request

RS232 adapter
654 757

Shut-off resistor
P-DP: 902 553 (male)
CAN: on request

Y junction
P-DP: 902 098
CAN: 788 643

RS422 adapter
666 370

Female M12 with cable

M12 P-DP: 918 198
CAN: 917 116

Male M12 with cable

USB adapter
670 696

Visit product website ▶

บริษัท ฟลูเทค จำกัด
FLU-TECH CO.,LTD

845/3- 4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 10270
845/3-4 Thepharak RD., T.Thepharak, A.Muang, Samutprakarn 10270 THAILAND
Tel. 0 2384 6060, Fax 0 2384 5701, Email : sales@flutech.co.th, www.flutech.co.th