

LFC Liquid Flow Controller



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

Type 8719 can be combined with...



Type 1150

Multi-channel
program controller



Type 6606

2/2-way
Solenoid Valve



Type 6011

2/2-way
Solenoid Valve



MassFlowCommunicator

Communications
Software

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 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. Typical application areas of liquid dosing are:

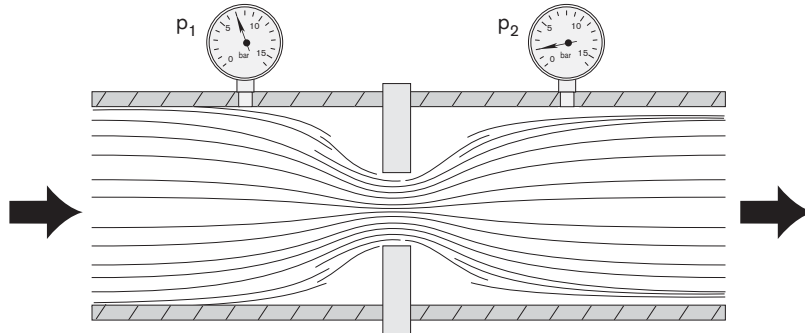
- Heat treatment,
- Machine tools,
- Fuel cell technology,
- Packaging technology,
- Material coating,
- Bio reactors.

In particular, the Type 8719 meets the requirement of IP65.

Technical data			
Full scale range (Q_{nom})	0.6 to 36 l/h (10 to 600 ml/min) re. water	Input impedance	>20 kΩ (voltage), <300 Ω (current)
Operating medium	Clean and low viscous liquids	Output signal (actual value)	0-5 V, 0-10 V, 0-20 mA or 4-20 mA
Viscosity	0.4 to 4 cSt	Max. voltage current output	10 mA
Max. operating pressure (at inlet)	Measurement range: up to max. 10 barg; typical max. 2 barg	Max. burden current output	600 Ω
Calibration medium	Water (conversion to operating medium with correcting function)	Alternative Input and output signal	Digital with fieldbus: ▪ PROFIBUS DP ▪ DeviceNet ▪ CANopen
Medium temperature	10 to + 40 °C	Protection class	IP65
Ambient temperature	0 to + 55 °C	Dimensions [mm] (without compression fittings)	115 x 137.5 x 37 (WxHxD)
Accuracy	±1.5 % o.R. ±0.5 % F.S.	Total weight	Approx. 1200 g
Repeatability	±0.5 % F.S.	Mounting position	Horizontal or vertical
Turn-down ratio	1:10	Light emitting diodes (default functions, other functions programmable)	Indication for: 1. Power 2. Communication 3. Limit 4. Error
Settling time(t_{95%})	< 500 ms	Binary inputs (default functions, other functions programmable)	Three: 1. Start Autotune 2. Open valve (for purging) 3. Not assigned
Body material	Stainless steel	Binary outputs (default functions, other functions programmable)	Two relay outputs for : 1. Limit (desired value can not be achieved) 2. Error (e.g. sensor failure) Capacity: max. 60 V, 1 A, 60 VA
Housing	PBT		
Sealing material	FKM, EPDM, FFKM		
Port connection	G 1/8, NPT 1/8, G 1/4, NPT 1/4		
Control valve Valve orifices	Proportional valve; normally closed; depending on flow range and pressure		
Electrical Connection	Round socket, 8-pin, Sub-HD socket, 15-pin, M12 plug or socket, 5-pin (with fieldbus)		
Operating voltage	24 V DC ± 10 %		
Residual ripple	< 2 %		
Power consumption	Max. 7.5 W (10 W with fieldbus version)		
Input signal (set point)	0-5 V, 0-10 V, 0-20 mA or 4-20 mA		

Measurement 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 from which the electronics calculate the corresponding flow.



To avoid a blockage of the aperture by contaminated mediums an upstream filter is recommended.

Notes regarding the selection of the unit

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 specification sheet (p. 5) 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} .

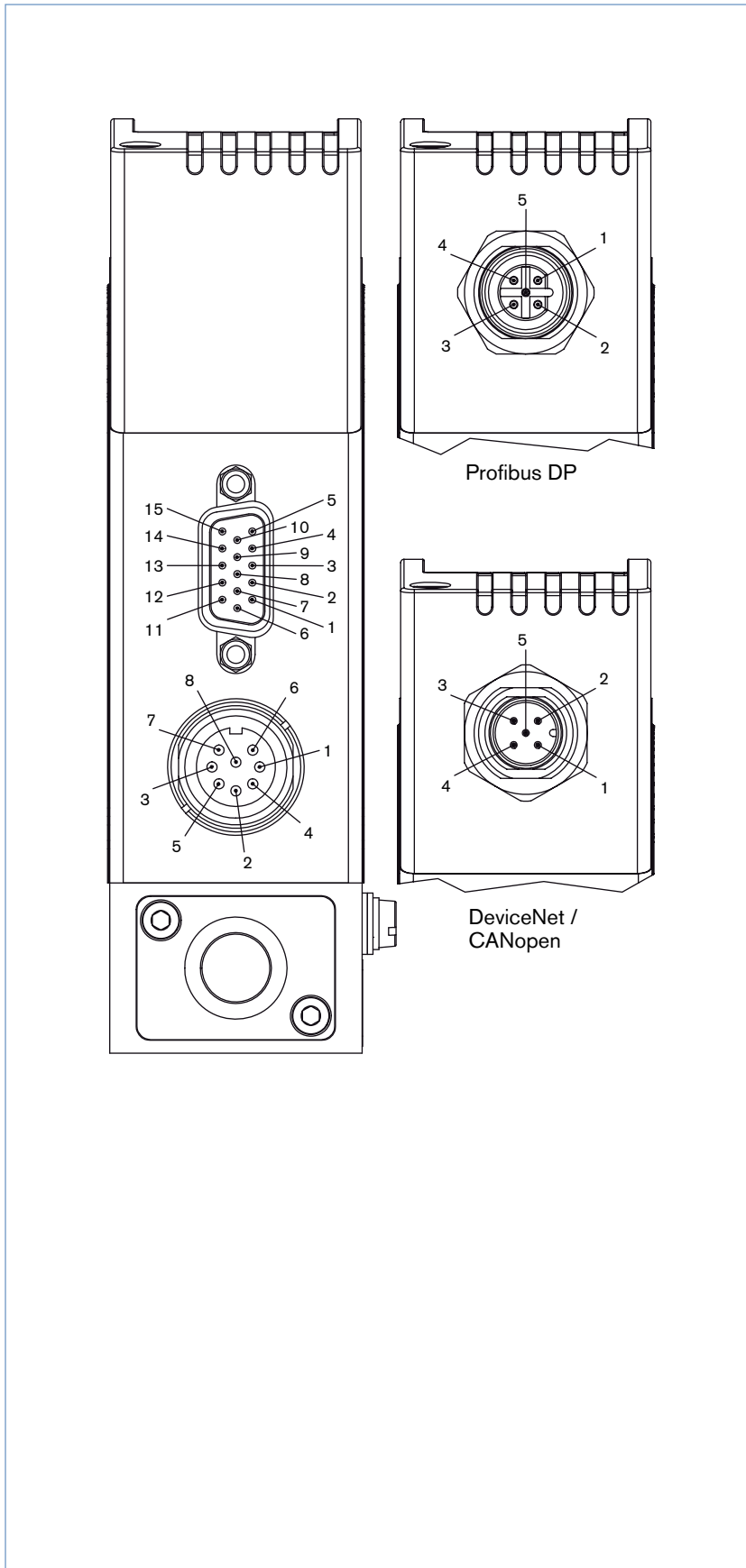
In addition, please quote the maximum inlet pressure p_{1max} to be encountered. This data is needed to make sure the actuator is able to provide a close-tight function within all the specified modes of operation. The knowledge of the maximum inlet pressure is also necessary to select an adequate differential pressure sensor

▶ **The request form on page 5 contains the relevant fluid specification. Please use the experience of Bürkert engineers already in the design phase and provide us with a copy of your request containing the necessary data together with your inquiry or order.**

Ordering chart for accessories (Connectors are not included in the delivery)

Article	Item no.
Electrical. Connection	
Round 8-pin binder plug (solder connection)	918 299
Round 8-pin plug with prefabricated 5m cable on one side	787 733
Round 8-pin plug with prefabricated 10m cable on one side	787 734
SUB-HD 15-pin plug with prefabricated 5m cable on one side	787 735
SUB-HD 15-pin plug with prefabricated 10m cable on one side	787 736
PROFIBUS DP	
M12 plug	918 198
M12 socket (coupling)	918 447
PROFIBUS Y-Connector	902 098
Adapter	
RS232 adapter with extension cable to connect to PC (Item no. 917039)	654 757
RS485 adapter	658 499
PC extension cable for RS232, 9-pin socket/plug 2m	917 039
USB adapter	670 696
Communications software, MassFlowCommunicator	Download at www.burkert.com

Pin Assignment



Fieldbus version

PROFIBUS DP - M12 socket , B-coded (DPV1 max. 12 Mbaud)

Pin	Connection
1	VDD
2	RxD/ TxD - N (A-circuit)
3	DGND
4	RxD/ TxD - P (B-circuit)
5	not configured

CANopen resp., DeviceNet - M12 Plug

Pin	Connection
1	Shield
2	not configured
3	DGND
4	CAN_H
5	CAN_L

Sub-HD socket, 15-pin

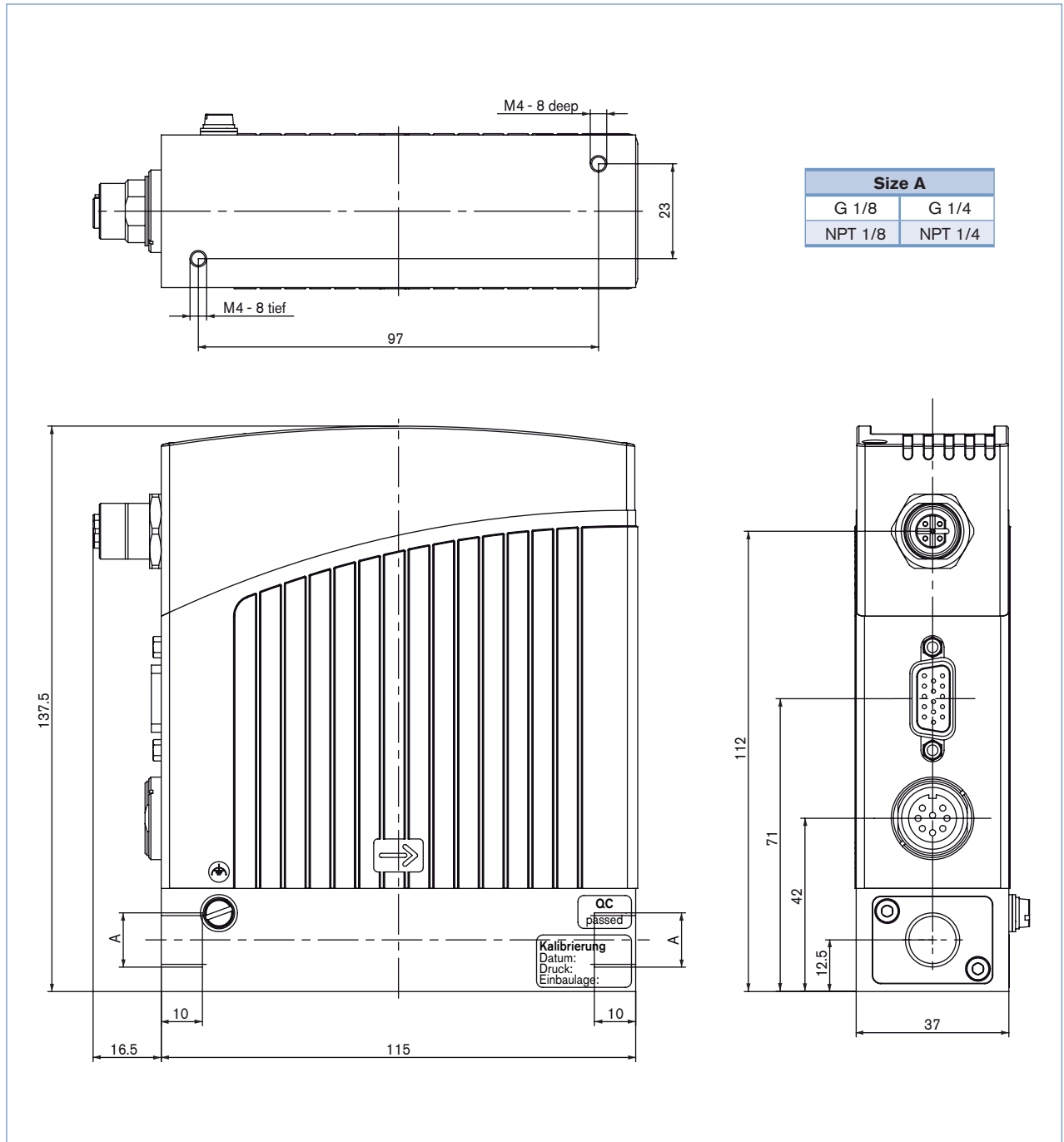
Pin	Connection
1	Set value input + ¹⁾
2	Set value input GND ¹⁾
3	Actual value output + ¹⁾
4	Binary input 2
5	12V-Output (only for internal company use)
6	RS232 TxD (direct connection to PC)
7	Binary input 1
8	DGND (for binary input)
9	only for internal company use (do not connect)
10	12V-Output (only for internal company use)
11	12V-Output (only for internal company use)
12	Binary input 3
13	Actual value output GND ¹⁾
14	RS232 RxD (direct connection to PC)
15	DGND (for RS232-interface)

¹⁾not applicable for fieldbus version

Round socket, 8-pin

Pin	Connection
1	24V Supply +
2	Relay 1 - middle contact
3	Relay 2 - middle contact
4	Relay 1 - NC contact
5	Relay 1 - NO contact
6	24V Supply GND
7	Relay 2 - NO contact
8	Relay 2 - NC contact

Dimensions [mm]



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

Note
You can fill out the fields directly in the PDF file before printing out the form.

LFC/LFM applications - Request for quotation

▶ Please fill out and send to your nearest Bürkert facility with your inquiry or order

Company	Contact person
Customer no.	Department
Street	Tel./Fax
Postcode/Town	E-Mail

LFC applications
 LFM applications
 Quantity
 Required delivery date

Medium data

Fluids
Density [kg/m³] at 20°C at 40°C
Viscosity at 5°C [cSt] at 5°C at 20°C at 40°C
Medium temperature [°C or °F] °C °F
Abrasive components/solid particles no yes, as follows:

Fluidic data

Maximum flow Q_{nom}
 l/h l/min
 kg/h kg/min
 ml/h ml/min
Minimum flow Q_{min}
 l/h l/min
 kg/h kg/min
 ml/h ml/min
Inlet pressure at Q_{nom} $p_1 =$ barg ■
Outlet pressure at Q_{nom} $p_2 =$ barg ■
Max. inlet pressure p_{1max} barg ■
Pipeline (external-Ø) mm inch
LFC/LFM port connection
 without screw-in fitting
 1/8 G-thread 1/4 G-thread (DIN ISO 228/1)
 1/8 NPT-thread 1/4 NPT-thread (ANSI B1.2)
 with screw-in fitting
Installation of LFC/LFM
 horizontal, valve upright (standard) horizontal, valve to the side
 vertical, flow upwards vertical, flow downwards
Ambient temperature °C

Material data

Body material Stainless steel
Seal material FKM EPDM Other: _____

Electrical data

Output/Input Signal
with standard signal
 Output Input
 0-5 V 0-5 V
 0-10 V 0-10 V
 0-20 mA 0-20 mA
 4-20 mA 4-20 mA
with fieldbus
 PROFIBUS-DP
 DeviceNet
 CANopen

■ Please quote all pressure values as overpressure with respect to atmospheric pressure [barg]

To find your nearest Bürkert facility, click on the orange box → www.burkert.com

In case of special application conditions, please consult for advice

Subject to alterations.
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