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Find the *Burkert 8719* at our website: ***Click HERE***

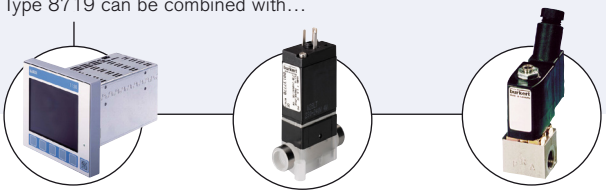
burkert
FLUID CONTROL SYSTEMS

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

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. MassFlowCommunicator software can be used for parameterisation and diagnosis. Typical application areas of liquid dosing are:

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

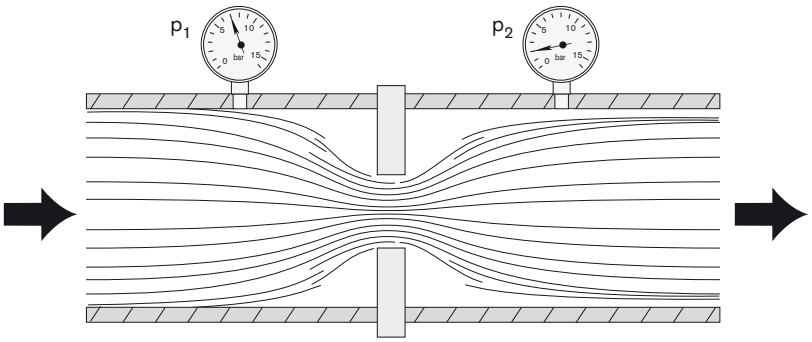
In particular, the Type 8719 meets the requirement of IP65.

Technical data	
Full scale range (Q_{nom})	0.9 to 36 l/h (15 to 600 ml/min) re. water
Operating medium	Clean and low viscous liquids
Viscosity	0.4 to 4 cSt
Max. operating pressure (at inlet)	Measurement range: up to max. 10 barg; typical max. 2 barg
Calibration medium	Water (conversion to operating medium with correcting function)
Medium temperature	10 to + 40 °C
Ambient temperature	0 to + 55 °C
Accuracy	± 1.5 % o.R. ± 0.5 % F.S.
Repeatability	± 0.5 % F.S.
Turn-down ratio	1:10
Settling time($t_{95\%}$)	< 500 ms
Body material	Stainless steel
Housing	PBT
Sealing material	FKM, EPDM, FFKM
Port connection	G ⅛, NPT ⅛, G ¼, NPT ¼
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
Input impedance	> 20 kΩ (voltage), < 300 Ω (current)
Output signal (actual value)	0 - 5 V, 0 - 10 V, 0 - 20 mA or 4 - 20 mA
Max. voltage current output	10 mA
Max. burden current output	600 Ω
Alternative Input and output signal	Digital with fieldbus: ▪ PROFIBUS DP ▪ DeviceNet ▪ CANopen
Protection class	IP65
Dimensions [mm] (without compression fittings)	115 × 137.5 × 37 (WxHxD)
Total weight	Approx. 1200 g
Mounting position	Horizontal or vertical
Light emitting diodes (default functions, other functions programmable)	Indication for: 1. Power 2. Communication 3. Limit 4. Error
Binary inputs (default functions, other functions programmable)	Three: 1. Start Autotune 2. Open valve (for purging) 3. Not assigned
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

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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 7 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.

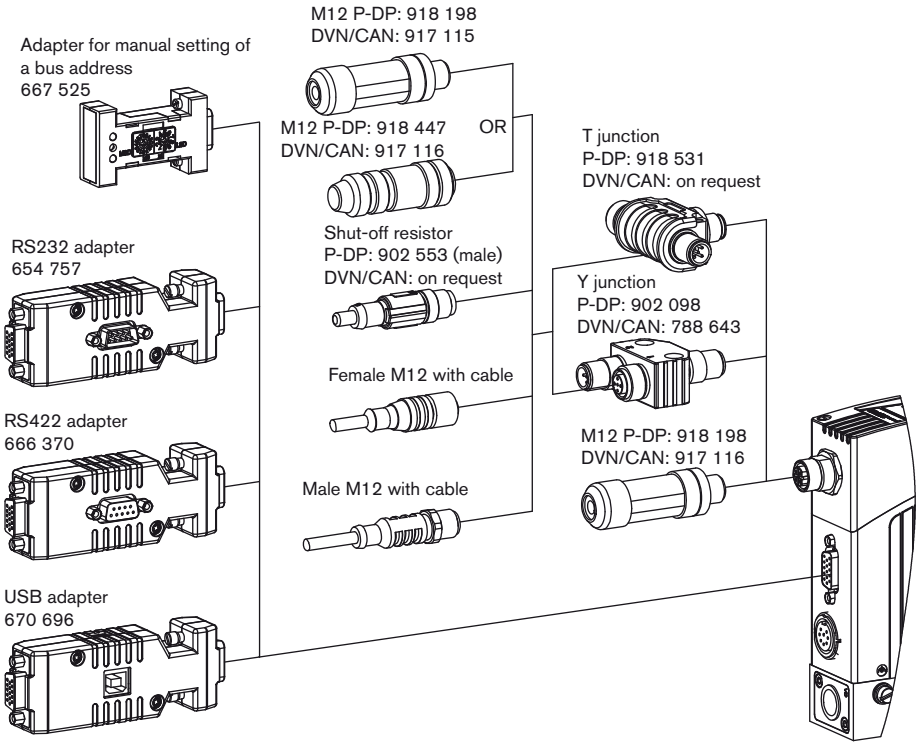
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Ordering chart for accessories

Article	Article no.	
Electrical. Connection		
Round 8 pin binder plug (solder connection)	918299	
Round 8 pin plug with prefabricated 5 m cable on one side	787733	
Round 8 pin plug with prefabricated 10 m cable on one side	787734	
SUB-HD 15 pin plug with prefabricated 5 m cable on one side	787735	
SUB-HD 15 pin plug with prefabricated 10 m cable on one side	787736	
Adapters[3]		
RS232 adapter for connection to a computer, connection with an extension cable (item no. 917039)	654757	
PC extension cable for RS232 9 pin socket/plug 2 m	917039	
RS422 adapter (RS485 compatible)	666370	
USB adapter	670696	
USB connection cable 2 m	772299	
Adapter for manual bus adresse settings (instad of SW)	667525	
Communication software MassFlowCommunicator	Download from www.buerkert.com	
Accessories for Fieldbus	**PROFIBUS DP (B-coded)**	**DeviceNet/ CANopen (A-coded)**
Plug M12 [4]	918198	917115
Socket M12 (coupling) [4]	918447	917116
Y-junction[4]	902098	788643
T-junction	918531	(on request)
Shut-off resistor	902553	(on request)
GSD-File (PROFIBUS), EDS-File (DeviceNet, CANopen)	Download from www.buerkert.com	

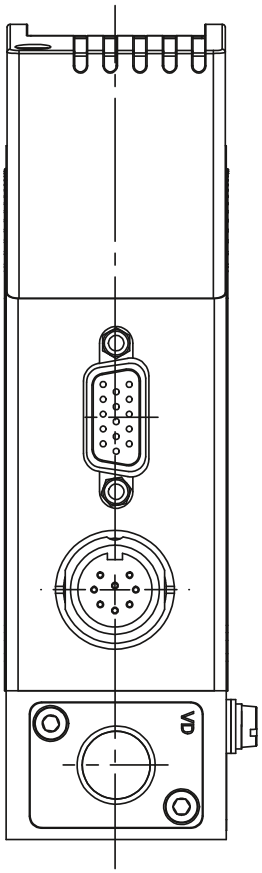
[3] The adapters serve mainly for initial operation or diagnosis. Those are not obligatory for continuous operation.

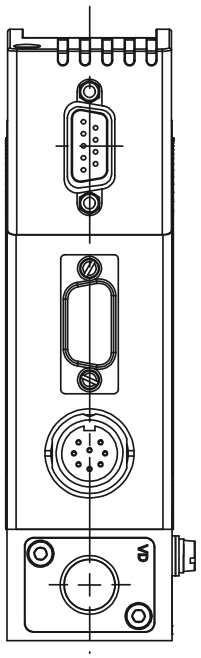
[4] The two M12 connectors as listed above cannot be used together on the same side of the Y-junction. At least one of the two M12 connection needs to be a prefabricated cable which uses typically a thinner connector.

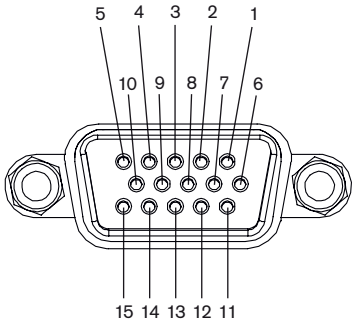


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Pin Assignment

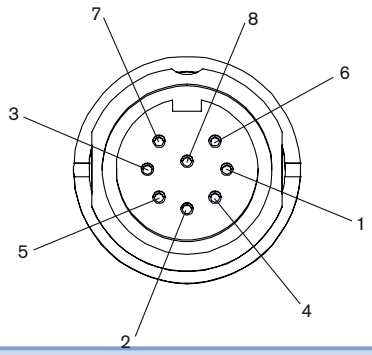


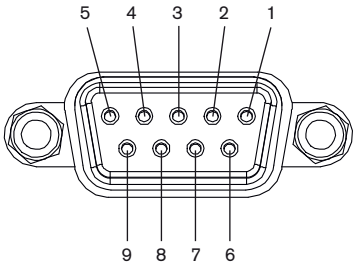


Socket D-Sub HD15	Pin	Assignment	
		Analogue Control	Bus control
	1	Set value input +	N.C.[5]
	2	Set value input GND	N.C.
	3	Actual value output +	N.C.
	4	Binary input 2	
	5	12 V-Output (only for internal company use)	
	6	RS232 TxD (direct connection to computer)	
	7	Binary input 1	
	8	GND (for binary 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	N.C.
	14	RS232 RxD direct connection to computer)	
	15	DGND (for RS232-interface)	

[5] N.C.: not connected (not used)

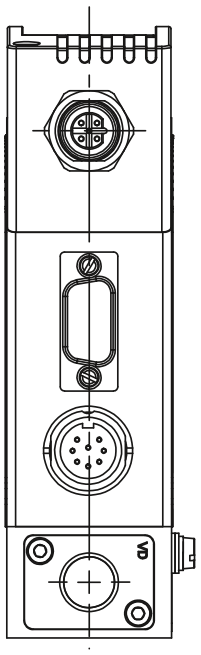
Note:
- Optional Pin 1 and 2 with bus version as transmitter input possible
- The cable length for RS232/ Setpoint and flow value signal is limited to 30 meters.

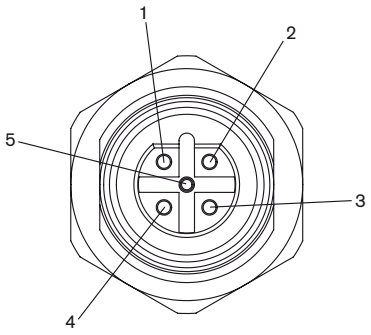
Socket M16, round, 8 pin	Pin	Assignment
	1	24 V-Supply +
	2	Relay 1 – reference contact
	3	Relay 2 – reference contact
	4	Relay 1 – normally closed
	5	Relay 1 – normally opened
	6	24 V-Supply GND
	7	Relay 2 – normally opened
	8	Relay 2 – normally closed

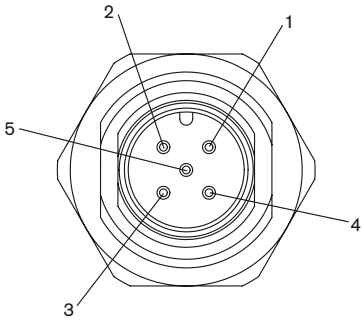
Socket D-Sub 9 pin (only with fieldbus version)	Pin	Assignment	
		PROFIBUS DP	DeviceNet/ CANopen
	1	Shield	Shield
	2	N.C.	CAN-L data line
	3	RxD/TxD - P (B-line)	GND
	4	RTS (control signal for repeater)	N.C.
	5	GND	N.C.
	6	VDD (only for termination resistor)	N.C.
	7	N.C.	CAN-H data line
	8	RxD/TxD - N (A-line)	N.C.
	9	N.C.	N.C.

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Pin Assignment *(continued)*



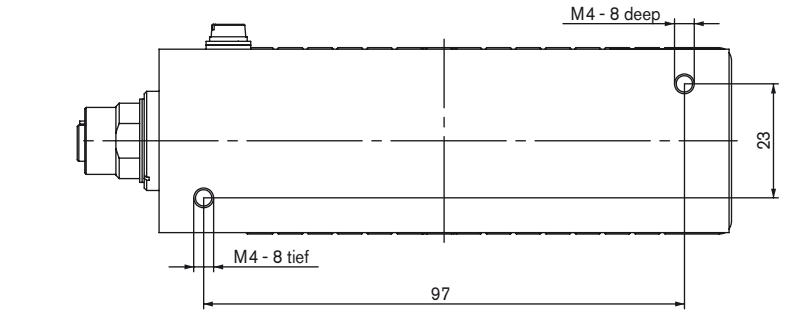
PROFIBUS DP – socket B-coded M12 (DPV1 max. 12 Mbaud)	Pin	Assignment
	1	VDD (only for termination resistor)
	2	RxD/TxD – N (A-line)
	3	DGND
	4	RxD/TxD – P (B-line)
	5	N.C.

DeviceNet/ CANopen – Plug A-coded M12	Pin	Assignment
	1	Shield
	2	N.C. [7]
	3	DGND
	4	CAN_H
	5	CAN_L

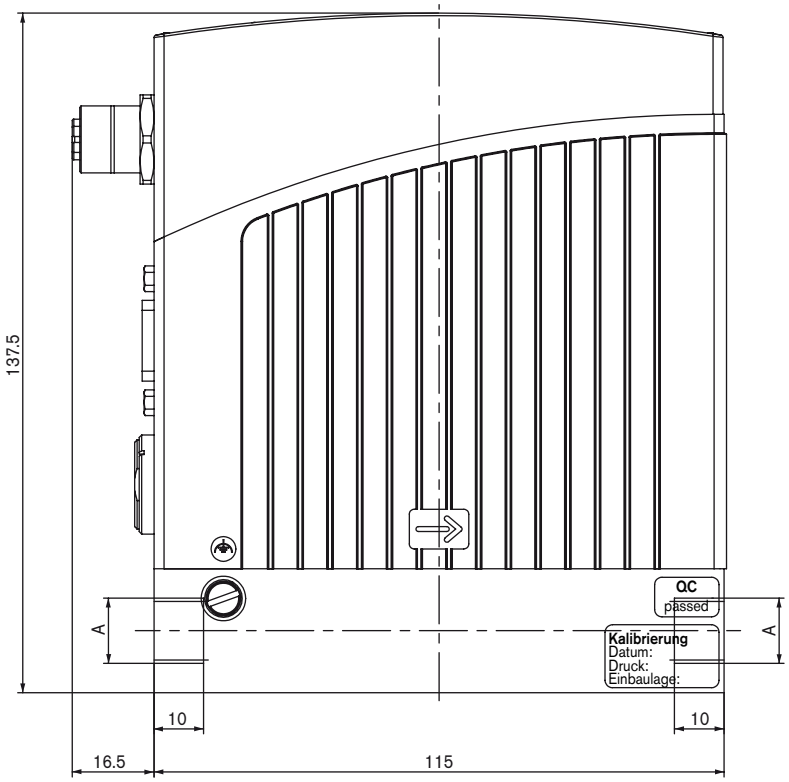
[6] Optional configuration with 24 V DC possible for power supply via fieldbus connector. With this no power supply connection on round M16 plug needed.

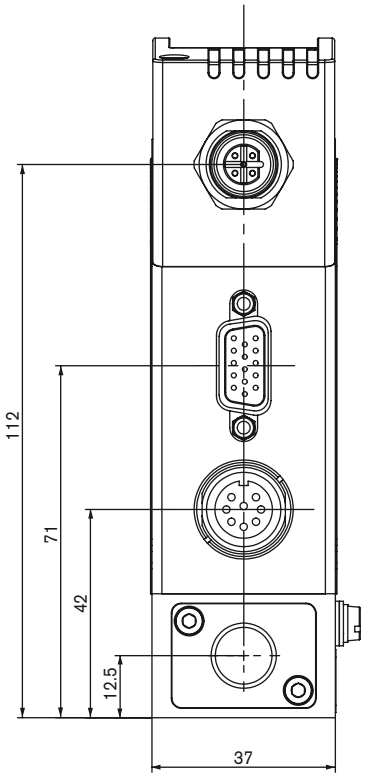
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Dimensions [mm]



Size A	
G ⅛	G ¼
NPT ⅛	NPT ¼





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

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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
- ☐ ⅛ G-thread
- ☐ ¼ G-thread (DIN ISO 228/1)
- ☐ ⅛ NPT-thread
- ☐ ¼ 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 ☐

Material data

Body material ☐ Stainless steel

Seal material ☐ FKM ☐ EPDM ☐ Other: _____

Electrical data

Output/Input Signal

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

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

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In case of special application conditions, please consult for advice

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