



LFM Liquid Flow Meter

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

Type 8708 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 8708 is an instrument for liquid flow control in process technology. The actual value supplied by the sensor is transmitted through the digital electronics and over a standard signal output or a field bus interface. In the device two calibration curves can be stored, which the user is able to switch between.

Typical application areas of liquid measurement are:

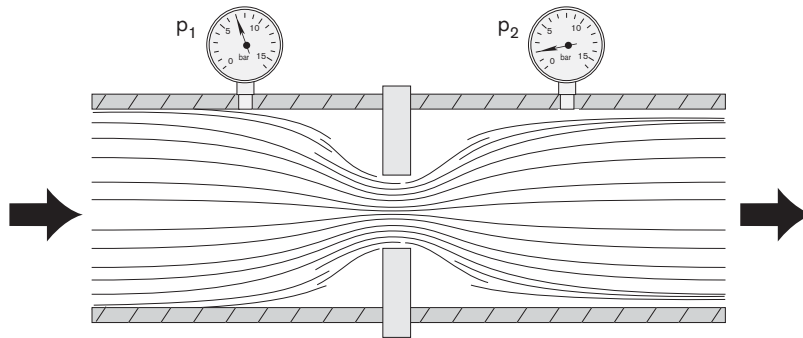
- Heat treatment,
- Machine tools,
- Fuel cell technology,
- Packaging technology,
- Material coating,
- Bio reactors.

The device offers a particularly compact solution.

Technical data			
Full scale range (Q_{nom})	0.6 to 36 l/h (10 to 600 ml/min) re. water	Power consumption	Max. 2.5 W (5 W with fieldbus version)
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. current (voltage output)	10 mA
Max. operating pressure (at inlet)	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 output signal	Digital with fieldbus: <ul style="list-style-type: none"> ▪ PROFIBUS DP V1 ▪ DeviceNet ▪ CANopen
Medium temperature	10 to + 40 °C	Type of protection	IP40
Ambient temperature	0 to + 55 °C	Dimensions [mm] (without compression fittings)	Standard version: 107 x 115.5 x 28 (BxHxT) Sub-base version: 107 x 115.5 x 43 (BxHxT)
Accuracy	± 1.5 % o.R. ± 0.5 % F.S.	Total weight	Approx. 900 g
Repeatability	± 0.5 % F.S.	Installation	Horizontal or vertical
Turn-down ratio	1:10	Light emitting diodes (Default functions, other functions programmable)	Indication for: <ol style="list-style-type: none"> 1. Power 2. Communication (only in fieldbus version) Limit (only in analogue version) 3. Error
Response time ($t_{99\%}$)	< 500 ms	Binary inputs (Default functions, other functions programmable)	Two: <ol style="list-style-type: none"> 1. not assigned 2. not assigned
Body material	Stainless steel	Binary output (Default functions, other functions programmable)	One relay output for: <ul style="list-style-type: none"> Limit (Q_{nom} almost reached) Capacity: max. 25 V, 1 A, 25 VA
Housing	PC (Polycarbonate)		
Sealing material	FKM, EPDM, FFKM		
Port connection	G 1/8, NPT 1/8, G 1/4, NPT 1/4, sub-base		
Control valve	Proportional valve; normally close; depending on flow range and pressure		
Valve orifices			
Electrical Connection	Sub-D 15-pin plug M12 (PROFIBUS) 5-pin socket M12 (DeviceNet, CANopen) 5-pin plug		
Operating voltage	24 V DC ± 10 %		
Residual ripple	< 2 %		

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 out of which the electronics calculates 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

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 barg inlet pressure.

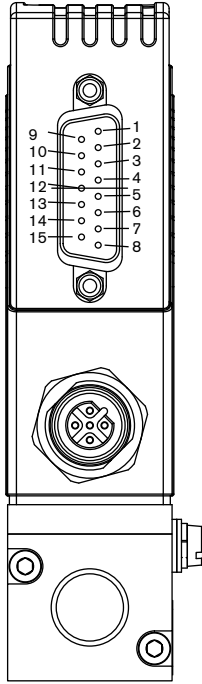
The specification of the inlet pressure, $p_{1,max}$, which can be expected is necessary for the selection of the suitable differential pressure sensor.

- ▶ 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.
15-pin Electrical Connection	
Sub-D 15-pin socket (solder connection)	918 274
Sub-D cover for Sub-D socket, with screw locking device	918 408
Sub-D 15-pin socket with prefabricated 5m cable on one side	787 737
Sub-D 15-pin socket with prefabricated 10m cable on one side	787 738
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)	654 748
RS485-Adapter	654 538
PC 2m extension cable for RS232, with 9-pin socket/plug	917 039
USB-Adapter	670 639
Communications software MassFlowCommunicator	Download at www.burkert.com

Pin Assignment



Sub-D 15-pin plug

Pin	Connection
1	Relay - NC contact
2	Relay - NO contact
3	Relay - middle contact
4	GND for 24V supply and binary inputs
5	24V Supply +
6	8V Output (only for internal company use)
7	not configured
8	not configured
9	Actual value output GND
10	Actual value output +
11	DGND (for RS232)
12	Binary input 1
13	Binary input 2
14	RS232 RxD (without driver)
15	RS232 RxD (without driver)

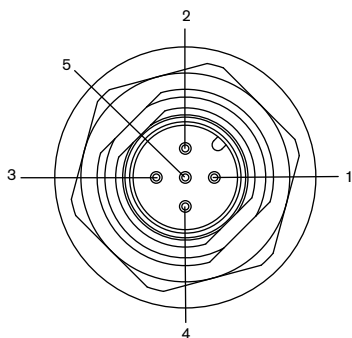
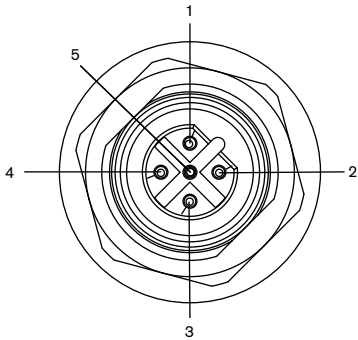
Fieldbus version

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

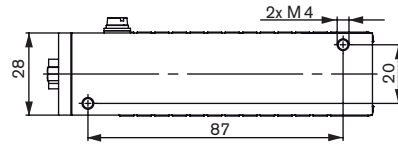
CANopen resp., DeviceNet - M12 Plug

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

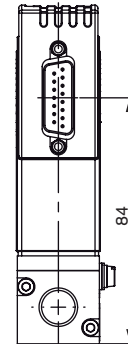
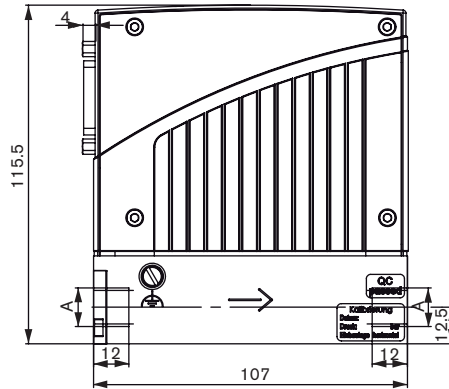


Dimensions [mm]

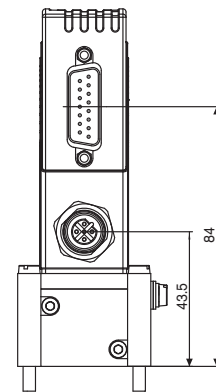
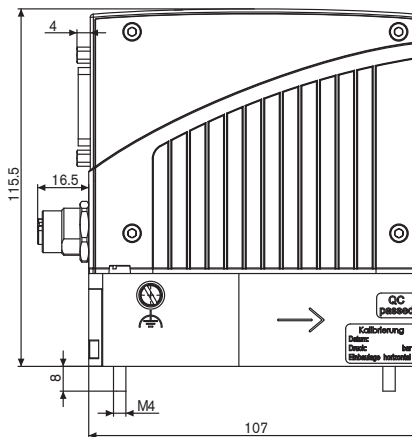
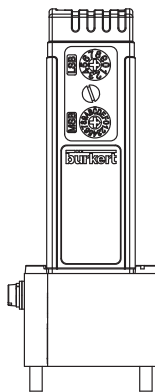
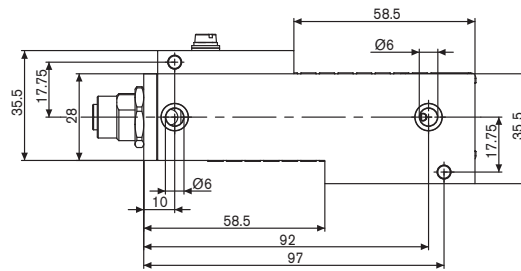
Standard Version



Size A	
G 1/8	G 1/4
NPT 1/8	NPT 1/4



Sub-base Version



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 [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} p₁ = barg ■

Outlet pressure at Q_{nom} p₂ = 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

Sub-base

Installation of LFC/LFM

horizontal, valve upright (standard) horizontal, valve to the side

Ambient temperature vertical, flow upwards vertical, flow downwards

°C

Material data

Body material Stainless steel

Seal material FKM EPDM Other:

Electrical data

Output Signal	with standard signal	with fieldbus
	<input type="checkbox"/> 0-5 V <input type="checkbox"/> 0-10 V <input type="checkbox"/> 0-20 mA <input type="checkbox"/> 4-20 mA	<input type="checkbox"/> PROFIBUS DP <input type="checkbox"/> DeviceNet <input type="checkbox"/> 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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