

L23V12

LIQUI-FLOW™ L23V12

Digital Thermal Liquid Mass Flow Controller

- Fast and accurate measuring signal
- Insensitive to mounting position
- Very small internal volume
- Suitable for liquids with low boiling points
- Analog, RS232 or fieldbus communication



Liquid Mass Flow Controllers for low flow rates

Bronkhorst® model L23V12 Liquid Flow Controllers (LFCs) are suited for precise measurement and control of flow ranges between 2...100 g/h and 20...1000 g/h at operating pressures up to 100 bar. The LFC consists of a thermal mass flow sensor and a microprocessor based pc-board with signal and fieldbus conversion and a PID controller for mass flow control by means of an integrated control valve.

LIQUI-FLOW™ series are equipped with a digital pc-board, offering high accuracy, excellent temperature stability and fast response. The main digital pc-board contains all of the general functions needed for measurement and control. In addition to the standard RS232 output the instruments also offer analog I/O. As an option, an on-board interface can be mounted to provide DeviceNet™, PROFIBUS DP, Modbus, EtherCAT® or FLOW-BUS protocols.

Technical specifications

Measurement/Control system

Flow range, based on H ₂ O (intermediate ranges available)	min. 2...100 g/h max. 20...1000 g/h
Accuracy (incl. linearity) (based on actual calibration)	±1% FS
Turndown	1:50 (2...100%)
Repeatability	< 0,2% FS (typical H ₂ O)
Settling time	< 2 seconds
Max. Kv-value	2,37x10 ⁻³
Max. fluid viscosity	0.1 Pa·s
Operating temperature	5...50°C
Temperature sensitivity	±0,1% FS/°C
Attitude sensitivity	negligible
Warm-up time	30 min. for optimum accuracy; 2 min for accuracy ± 2% FS

Mechanical parts

Material (wetted parts)	stainless steel 316L/320; others on request
Pressure rating	100 bar abs
Max. ΔP	10 bar dif.
Process connections	compression type or face seal couplings
Purge connection	1/16" OD compression type
Seals	Kalrez [®] -6375; others on request
Ingress protection (housing)	IP40

Electrical properties

Power supply	+15...24 Vdc +/-10%		
Max. power consumption	Supply	at voltage I/O	at current I/O
	15 V	285 mA	305 mA
	24 V	250 mA	270 mA
PROFIBUS DP	add 53 mA (15 V supply) or 30 mA (24 V supply)		
EtherCAT [®]	add 66 mA (15 V supply) or 41 mA (24 V supply)		
DeviceNet [™]	add 48 mA (24 V supply)		
Analog output/command	0...5 (10) Vdc or 0 (4)...20 mA (sourcing output)		
Digital communication	standard: RS232; options: PROFIBUS DP, DeviceNet [™] , EtherCAT [®] , Modbus RTU or ASCII, FLOW-BUS		

Electrical connection

Analog/RS232	9-pin D-connector (male)
PROFIBUS DP	bus: 9-pin D-connector (female); power: 9-pin D-connector (male)
Devicenet [™]	5-pin M12-connector (male)
EtherCAT [®]	2 x RJ45 modular jack (in/out)
FLOW-BUS/Modbus-RTU/ASCII	RJ45 modular jack

Technical specifications and dimensions subject to change without notice.

For dimensional drawings and hook-up diagrams please visit the [productpage](#) on our [website](#)

Recommended accessories



E-8000 - DIGITAL READOUT / CONTROL SYSTEMS

Bright, wide angle, 1.8" display (TFT technology)

User friendly operation, menu driven with 4 push buttons



BRIGHT - COMPACT LOCAL READOUT/CONTROL MODULE

Bright, wide angle, 1.8" display

User friendly operation

Indication/operation/configuration



PIPS - PLUG-IN POWER SUPPLY

For lab-style or industrial devices

Interchangeable plugs (Euro, UK, USA, Australian, IEC) for mains connection

Related products



LIQUI-FLOW™ L23

Min. flow 2 ... 100 g/h
Max. flow 20 ... 1000 g/h
Pressure rating 100 bar
Compact, IP40 design
Analog, RS232 or fieldbus I/O



LIQUI-FLOW™ L13V12

Min. flow 0,25 ... 5 g/h
Max. flow 5 ... 100 g/h
Pressure rating 100 bar
Compact, IP40 design
Analog, RS232 or fieldbus I/O



**LIQUI-FLOW™ 'INDUSTRIAL STYLE'
L23I+C2I**

Min. flow 2 ... 100 g/h
Max. flow 2 ... 1000 g/h
Pressure rating 100 bar
IP65 protected
Analog, RS232 or fieldbus I/O



**LIQUI-FLOW™ 'INDUSTRIAL STYLE'
L30C2I**

Min. flow 0,04 ... 2 kg/h
Max. flow 0,4 ... 20 kg/h
Pressure rating 100 bar
Compact, IP65 design
Analog, RS232 or fieldbus I/O



BRONKHORST HIGH-TECH B.V.

Nijverheidsstraat 1A

NL-7261 AK Ruurlo (NL)

Tel. +31 573 45 88 00

info@bronkhorst.com