LIQUI-FLOW

L13V12

Digital Thermal Liquid Mass Flow Controller

Bronkhorst®

Technical specifications

Measurement & control

Type of media	liquids water-like
Flow range	min. 0,25…5 g/h max. 5…100 g/h (liquid, flow based on H_2O)
Accuracy	±1% FS
Repeatability	< 0.2% FS (typical H2O)
Turndown ratio	up to 1:20
Settling time (in control, typical)	< 2 sec.
Control stability	±0.1% FS/°C
Response time (sensor)	≤ 2 sec.
Operating temperature	5...50 °C
Fluid temperature	5…50 °C
Temperature sensitivity	±0.1% FS/°C
Leak integrity, outboard	< 2 x 10^{-9} mbar l/s He
Max. Kv-value	2.37×10^{-3}
Mounting	in any position
Warm-up time	30 minutes
Storage/transport conditions	0...50 °C, max. 95% RH (non-condensing)

Approvals

Marking	CE

Mechanical specs

Pressure rating (PN)	100
Ingress protection	IP40
Material wetted parts	stainless steel 316L or comparable
Housing material	stainless steel 1.4404 or comparable (body), ABS/stainless steel 1.4404 or comparable (cover)
Sealing material	FFKM/Kalrez®-6375
Sensor inner diameter	0.2 mm (10S); 0.8 mm (30S)
Process connections	compression type or face seal male couplings
Purge connection	1/16" OD compression type
Max. ΔP	10 bar(d)
Weight	0.6 kg

Electrical properties

Power supply	15…24 Vdc ±10%
Power consumption	3.5 W typical at 24 V for fieldbus: add 0.9 W
Analog output	0…5 (10) Vdc or 0 (4)…20 mA (sourcing)
Analog setpoint	0…5 (10) Vdc or 0 (4)…20 mA (sinking)
Digital communication	standard: RS232; options: DeviceNet™, CANopen®, PROFIBUS DP, Modbus RTU/ASCII, FLOW-BUS, EtherCAT®, PROFINET, Modbus/TCP, EtherNet/IP, POWERLINK

Electrical interfaces

Power (main connector)	9-pin D-sub (male)
Function (main connector)	Analog, RS232, RS485
PROFIBUS DP	9-pin D-sub (female)
CANopen / DeviceNet	5-pin M12A (male)
Modbus RTU/ASCII/FLOW-BUS	RJ45
Modbus TCP / EtherNet/IP / EtherCAT®/ PROFINET / POWERLINK	2x RJ45