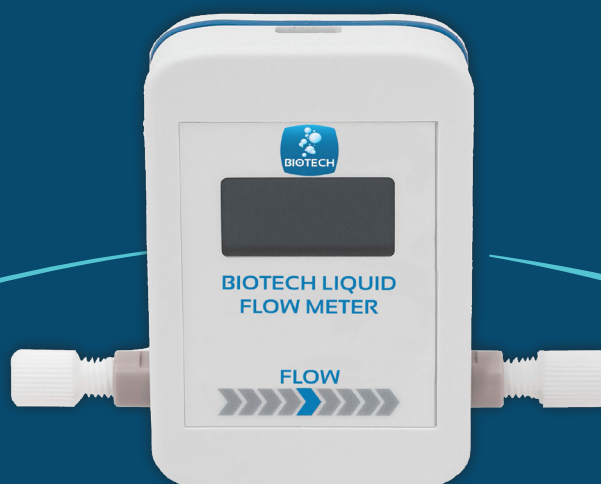


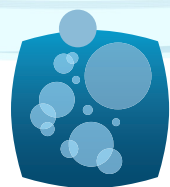


BIOTECH LIQUID FLOW METERS

Continuous in-line
monitoring and control of
flow rates without fluidic
interference



**BIOTECH
FLUIDICS**



BIOTECH FLUIDICS

Continuous High Precision Flow Monitoring with the Biotech Liquid flow Meters

Measuring of liquid flow rate has traditionally been slow and elaborative. Still today volumetric flow meters are common even though the significant limitations. High-Resolution Flow Measurement (HRFM) has now been made easy, continuous and integrated by the series of Biotech Liquid Flow Meters. Flow data is continuously and accurately accumulated and stored in an App providing full flow control and documentation. The measuring principle, heat dispersion, allows for unprecedented time resolution and provides a new insight into flow variation and inconsistency. The in-line measurement is made without any interference of the flow path and the flow cell has a minimal volume.



MICRO FLOW METER

With a measuring range from 10 nL to 80 μ L/min and a 5 μ L flow cell made of quartz glass and PEEK this unit provides unprecedented insights into nano fluidics.

HPLC FLOW METER

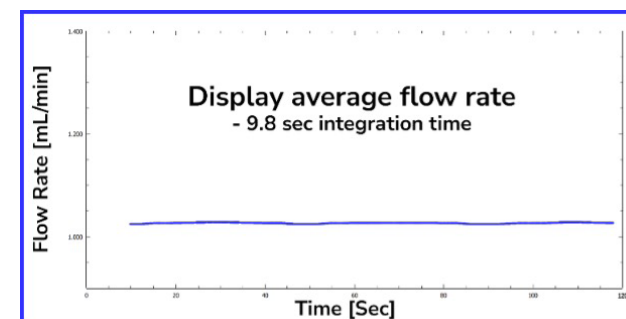
Optimised for flow rates of 10 μ L-5 mL/min typical of modern HPLC and UHPLC and similar systems with a very robust flow sensor made of quartz glass and PEEK.

PREP FLOW METER

Ranging up to 40 mL/min with the same high precision, accuracy and time resolution as the smaller ones the Prep Flow meter fills a role in scaling up to fully preparative systems

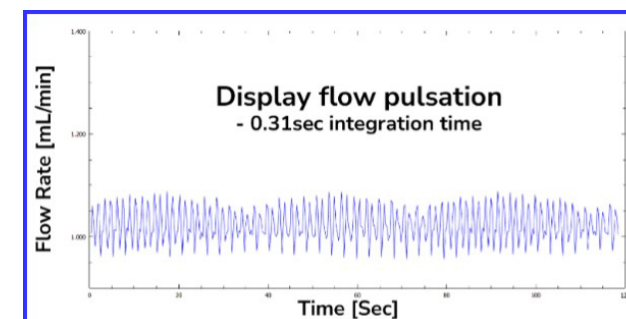
HIGH FLOW FLOW METER

Based on the same technology the High Flow provides full flow data up to 650 mL/min without sacrificing precision or accuracy.

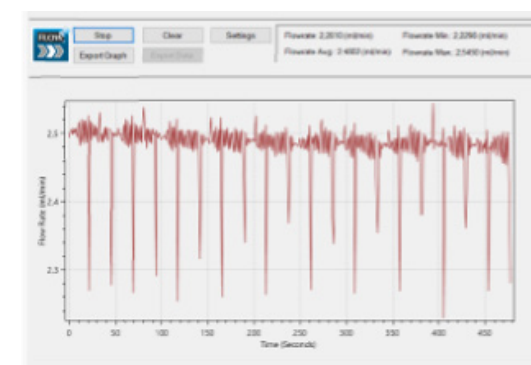


TIME RESOLVED FLOW MEASUREMENT.

With an adjustable sampling speed the user can select how to monitor the flow. This enables the user to monitor the average flow rate alone or the full flow profile including any pump pulsation on a previously unprecedented level. You might detect pulsation that can explain unexpected results and deviations.

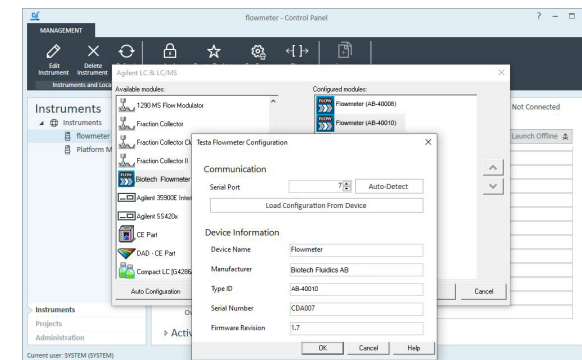


Higher pulsation could indicate for example a leaking pump seal or leaking check valve. This means the Biotech Flow Meters will be a diagnostic tool for your fluidic system. All data is continuously saved in the enclosed app.



CALIBRATION AND PUMP VALIDATION PROTOCOL

Every flow meter comes delivered with a Certificate of Conformity verified by a 4+1 point test routine. For regulated industry we offer a traceable 10-point calibration with Certificate and a Pump Validation Protocol. This provides easy evaluation and validation of your pump performance including statistics of pulsation with a test protocol output.



CHROMATOGRAPHY SYSTEM INTEGRATION

A unique accessory driver enable integration of the flow meters to most of the leading Chromatography Data Systems (CDS) (OpenLab, Empower, LabSolutions, Clarity, WinGPC etc). By integration to your CDS you collect and document the actual flow profile of each chromatogram directly into your database. No more guess work! The flow meter is simply added as a detector enabled by an additional RC.net/ICF protocol.

Chromato-
graphy QA
validation

Peristaltic
pump
monitoring
and control

Flow
Chemistry
process control

Process control
and validation

TECHNICAL DATA

The Biotech Liquid Flow Meter is specifically designed for continuous measurement of flow rate without interference in fluidic systems. The four different models covers flow range from 10 nL/min to 650 mL/min. With a USB interface the unit is powered and controlled by the included PC application that record data as time series. The flow rate displayed on the Flow Meter's integrated display should be seen as indicative. Each unit comes with 4+1 default calibration and with calibration factors for 4 solvents. The dimensions are 44x71x25 mm, weight 54 g. Power and data exchange by USB-C (RS-232 available on request).

Model Part number	Micro Flow AB-40008	HPLC Flow AB-40010	Prep Flow AB-40040	High Flow AB-40650
Measuring range	10 nL-80 µl/min	10 µL-5 mL/min	0.1-40 mL/min	0.1-650 mL/min
Maximum resolution	1 nL/min	1 µL/min	0.1 mL/min	0.1 mL/min
Accuracy	>0.2% FSD	>0.2% FSD	>0.2% FSD	>0.2% FSD
Precision	>0.5% FSD	>0.2% FSD	>0.2% FSD	>0.2% FSD
Integration time	78, 312 (default), 1172, 5781 or 9844 milliseconds			
Maximum pressure	3 MPa(435 psi)	3 MPa(435 psi)	1.2 MPa(174 psi)	0.3 MPa(43 psi)
pH operating range	1 to 11	1 to 11	1 to 11	1 to 11
Cell volume	5 µL	94 µL	58 µL	276 µL
Cell diameter	0.43 mm	1.8 mm	1.4 mm	4 mm
Cell length	37 mm	37 mm	22 mm	22 mm
Fluidic connectors	Female 1/4"-28 flat bottom	Female 1/4"-28 flat bottom	Female 1/4"-28 flat bottom	8 mm Babed end with tubing
Pressure drop	1 mbar	0.12 mbar*	<4 mbar	<4 mbar
Sensor Module	Quartz glass (borosilicate) and PEEK		PPS, SS-316 and epoxy resin	
Control	USB-powered plug-and-play software			
Calibration	Validated with water. Calibrations factors included			

*@ 5 mL/min with water ** THF is not tolerated
Temperature range 10-50 oC

ADDITIONAL PRODUCTS AND SERVICES

AB-02001 Biotech Flow Meter App (included when purchasing a flow meter)
AB-11002 Flow Meter 4+1-Points verification (included when purchasing a flow meter)
AB-11003 Flow Meter 10-Points Traceable Calibration (with water)
AB-11001 Pump Validation Form (included in AB-11003)
AB-12001 CDS Software Connectivity Driver (ICF/rc.NET Technology)

For ordering and technical support, please contact:

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