March 25, 2022

GREAT FLUIDIC SOLUTIONS

Measure inline liquid flow rates

Determine inline flow rates in any mode of liquid chromatography without interfering with the system. The Biotech Liquid Flow Meter is the perfect tool for high-precision, continuous measurement of flow rates ranging from 0.001 to 5 mL/min. Compatible with most solvents, a wide pH range, and pressures up to 3 MPa (435 psi).

Learn More

Perfect connection every time

MarvelXACT UHPLC connection system use a patented torque-limiting mechanism with “click” feedback to ensure a perfect leak-free connection with minimum dead volume. Built from sturdy, bioinert PEEK and stainless steel, this fitting can be reconnected more than 100 times even at the most demanding positions such as column inlet.

Learn More

Degasser for organic solvents

DEGASi® PLUS GPC is the right choice of degasser if you are working with 100% organic solvents in your fluidic line. Perfect for Gel Permeation Chromatography (GPC), Normal Phase Chromatography and other modes of HPLC. Many other degassers for other fluid compositions are also available.

Learn More

Let us help you

Biotech Fluidics has more than 20 years experience in providing innovative fluid transfer components to analytical, biotech and life science users all over the world. We and our distributors are on a mission to ensure great design of every fluidic system and we are most happy to guide you to the most suitable components for your setup.

Contact Us

BIOTECH LIQUID FLOW METER

Measures continuous flow rates without interference in your fluidic systems

Biotech Introduces a Unique Pocket-Sized High Resolution Liquid Flow Meter

The new Biotech Liquid Flow Meter can continuously and accurately determine in-line flow rates in any mode of liquid chromatography without system interference.

It is compatible with all HPLC and GPC solvents, conveniently sized and powers itself from a USB connection.

It is very easy to use, small enough to fit in your hand or lab coat pocket – weighing less than your cell phone!

The Biotech Liquid Flow Meter comes pre-calibrated and can be connected inline in any orientation to continuously measure flow rates.

Improved Results
Supplied digitally calibrated, the AB-40010 delivers high-precision and accuracy across a wide measurement range.
Validate your system and get pump performance diagnostics at the same time!

Ease of Use
Specially designed app for easy interaction.
- Save the data to your system
- Set the integration time - from continuous reading up to 10 seconds
- Choose between 5 different pre-calibrated solvents, or add your own!

Reliable Trouble-free Operation
The ultra-reliable AB-40010 is suitable for virtually any flow application and compatible with all standard GPC/HPLC solvents.

Application Are
- Chromatography – validation & diagnostic purpose
- Peristaltic pump monitoring
- Flow chemistry
- Process flow applications

Technical Data

The Biotech Liquid Flow Meter is specifically designed for continuous measurement of flow rate without interference in liquid chromatography systems. Being compatible with most solvents, a wide pH range, and pressures up to 3 MPa (435 psi), it is the perfect tool for high-precision measurement of flow rates ranging from 0.001 to 5 mL/min.

Via its USB interface and modern PC application, data is recorded as time series, which is helpful when troubleshooting pumps, check valves or other malfunctioning components in liquid chromatography equipment.

The app allows the user to select the integration interval for average flow rate or pump performance. Current flow rate is displayed on the Flow Meter's integral high-resolution OLED display while recording and storing the measured flow rates. Extraordinary high resolution and wide dynamic range make the Biotech Liquid Flow Meter the perfect flow monitoring tool for the most demanding HPLC and GPC systems.

Measuring Range	0.001 ml/min to 5.000 ml/min
Maximum resolution	>0.0005 ml/min
Accuracy	>0.2 % FSD
Precision	>0.2 % FSD
Integration Time Factor	78, 312 (Default), 1172, 5781, 9844 (Milliseconds)
Maximum Pressure	3MPa (435 psi)
pH operating range	1 to 11
Measuring Cell Volume	94µl
Cell Diameter	1.8mm
Cell Length	37mm
Pressure Drop	0.12millibar at 5ml/min of water
Sensor Module	Robust, thermal- and chemical-resistant borosilicate glass capillary (Quartz) and PEEK
Display	High-resolution OLED Display with online flow rate, status & settings information
Control	Easy to use with USB-powered plug-and-play functionality
Calibration	• Water Validated • MeOH, THF, EtOH/Water, ACN/Water Pre-set • Customer chosen alternative
Dimensions	40 x 20 x 70 mm (W x H x D)
Weight	0.2 kg

Portable robust Unit with 1µl Resolution. → Easy Time Factor Selection → Unit connects to any Chromotograph → Perfect for IQ, OQ, & PQ Validation

PACKING LIST

Qty	Content	P/N
1	Liquid Chromatography Flow Meter	
1	USB Cable, 1 m	
2	Plug, PFA, 1/4"-28 Flat-Bottom	P-316
2	Tubing, FEP, 1/16" OD x 0.75 mm ID x 0.4m Long	
3	Nut, One-piece Super FlangelessTM, PEEK, Flat-Bottom, 1/4"-28, 1/16" ID	P-249
1	Coned Fitting, One-piece, PEEK, 10-32, 1/16" ID	F-120
2	Stickypads	
1	User Manual	
1	White Case with Blue Caps	

Ordering Information

AB-40010 Biotech Liquid Flow Meter

BIOTECH

MARVELXACT™

READ ABOUT OUR PRODUCTS

HPLC Filters and Frits

Sensors

Pumps

Smart Saver – USB Solvent Recycler

KOT – Tubular Coils

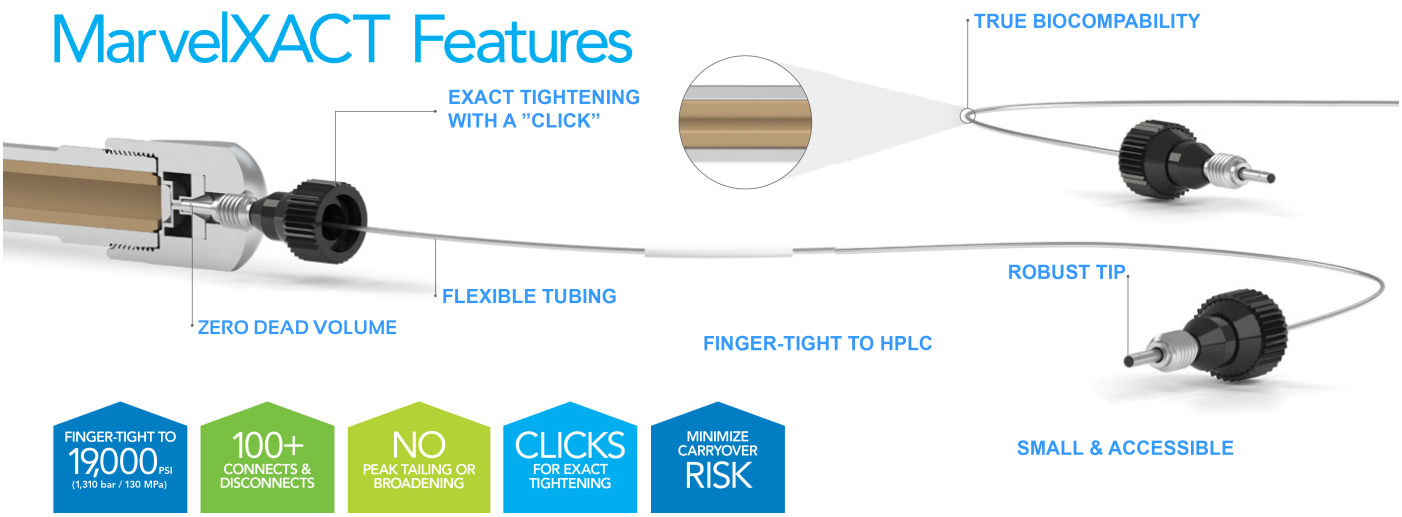
Technical Resources

Valves

Volumetric Precision Dispenser

MARVELXACT™ UHPLC CONNECTION SYSTEMS: FINGER-TIGHT WITH A "CLICK" FEEDBACK

ENSURE A PERFECT CONNECTION EVERY TIME WITH THE NEW MARVELXACT™ FITTING SYSTEM FOR TROUBLE-FREE LIQUID CHROMATOGRAPHY



Film MarvelXACT-8103473_1

from **Biotech Fluidics**

VIDEO Ask for Link

02:04

Download Brochure

DEGASi® PLUS GPC

is the right choice of degasser if you are working with 100 % organic solvents in your fluidic line. Example of application areas where this degasser is successfully used are GPC (Gel Permeation Chromatography) and Normal Phase Chromatography.

"when you are using 100 % organic solvents in your fluidic line..."

WHAT IS UNIQUE

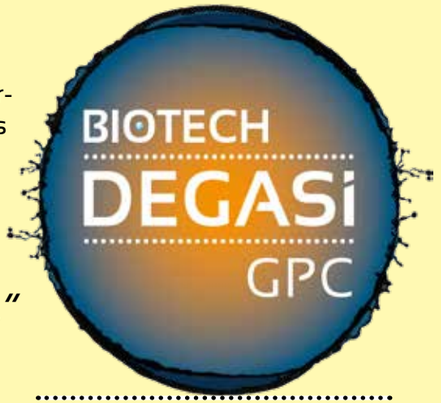
DEGASi® GPC uses the same 480 µl Systec AF™ degassing membrane as used in DEGASi® Classic. The main difference compared with the DEGASi® Classic is that we use a stented version of the vacuum chamber in the DEGASi® GPC.

The stent is a short piece of a stainless steel tube placed inside the ends of the degassing membrane, in order to make the internal ferrule in the bulkhead to get a better grip. This solution makes an even more secure internal connection when working with 100 % organic solvents in the fluidic line.

Part Number	Number of Channels	Internal Volume
0003-6621	1	480 µl
0003-6622	2	480 µl
0003-6623	3	480 µl
0003-6624	4	480 µl
0003-6625	5	480 µl
0003-6626	6	480 µl

PRODUCT FEATURES

- Ultra-high degassing efficiency
- Fits every system
- Long life expectancy 5+ years continuous (24/7) running capacity
- Easy to prime
- Almost silent
- Closed loop vacuum control means constant vacuum (variable RPM)
- ZHCR® patented control eliminates baseline fluctuations
- Excellent chemical compatibility flow path
- Continuous vacuum system monitoring to ensure optimum operational conditions are maintained
- Advanced error and leak checking functions
- CE & RoHS compliant



GENERAL SPECIFICATIONS

Degassing Channel Tubing:
Systec AF™ (0.045" ID)
Maximum Channel Pressure:
70 PSI
Wetted Materials:
Systec AF™, PPS, Glass-filled PTFE
Stainless Steel
Liquid Connection:
1/4"-28 UNF threaded flat-bottom port
Size (L x H x W):
245 x 111 x 59 mm

POWER REQUIREMENTS USING SUPPLIED AC ADAPTER

24 V Power supply included.
Required input to power supply:
110-240 V 50/60 HZ

Wall Sockets: 4 supplied with AC Adapter, Interchangeable: North America,Japan, U.K., Continental Europe, Australia

DEGASi® PLUS GPC

READ ABOUT OUR PRODUCTS

BIOTECH DEGASi PLUS SERIES

THE RIGHT CHOICE

Visit our Shop

"WHEN YOU ARE USING 100 % ORGANIC SOLVENTS IN YOUR FLUIDIC LINE..."

THE DIFFERENCE BETWEEN THE NEW AND OLD DEGASI® GPC

Fittings

Tubing

HPLC Columns

HPLC Filters and Frits

Sensors

Pumps

Smart Saver – USB Solvent Recycler

KOT – Tubular Coils

Technical Resources

Valves

Volumetric Precision Dispenser

-
-
-

WHAT IS UNIQUE

FEATURES

DEGASi® Classic

DEGASi® Classic

Download our Brochure

MARVELXACT™

READ ABOUT OUR PRODUCTS

HPLC Filters and Frits

Sensors

Pumps

Smart Saver – USB Solvent Recycler

KOT – Tubular Coils

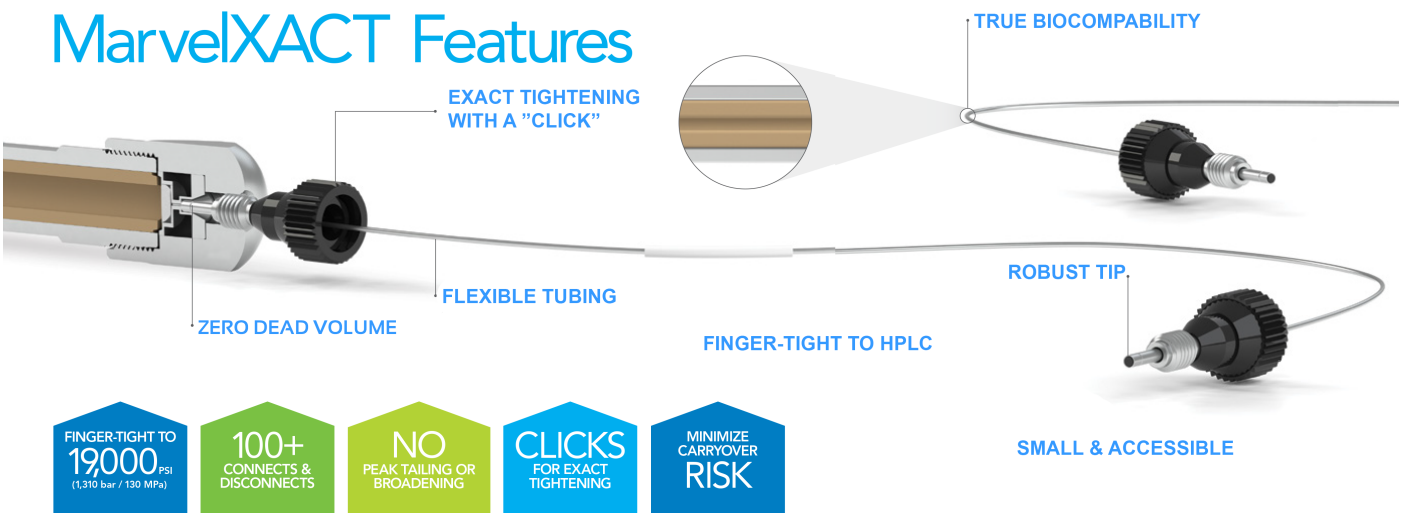
Technical Resources

Valves

Volumetric Precision Dispenser

MARVELXACT™ UHPLC CONNECTION SYSTEMS: FINGER-TIGHT WITH A "CLICK" FEEDBACK

ENSURE A PERFECT CONNECTION EVERY TIME WITH THE NEW MARVELXACT™ FITTING SYSTEM FOR TROUBLE-FREE LIQUID CHROMATOGRAPHY



Film MarvelXACT-8103473_1

from **Biotech Fluidics**

02:04

Download Brochure

MarvelXact Fittings

MARVEL XACT™

A Complete Kit with Tubing and Fittings

- Fits Every 10 - 32 Coned Port
- 1300 bar Pressure Rating

Trouble-Free UHPLC Connections for Exact Performance Every Time

HEALTH & SCIENCE

BIOTECH

Intelligent Solutions for Life™

Fluidics | Optics | Consumables | Assemblies

Ensure a Perfect Connection Every Time with Our New MarvelXACT™ Fitting System for Trouble-Free Liquid Chromatography

Our expertly designed MarvelXACT connection system takes the guesswork out of your process by eliminating the risk of under- and over-tightening, with our patented torque-limiting mechanism. This unique feature provides a haptic "click" feedback when it reaches the optimum torque, assuring a perfect connection every time. Built with sturdy, bioinert PEEK and stainless steel, MarvelXACT can be connected and disconnected more than 100 times. MarvelXACT also incorporates our advanced MarvelX™ Sealing Technology to deliver precise face sealing (sealing at the port bottom), which eliminates additional internal volume, and minimizes carryover risk, peak tailing, and peak broadening. The MarvelXACT connection system incorporates flexible 1/32" OD tubing to easily route through your system, is compatible with 10-32 coned receiving ports, and is absolutely finger-tight — no tool required. Additionally, MarvelXACT utilizes our exclusive next-generation patented technology to auto-adjust to various port depths.

MarvelXACT Features

EXACT TIGHTENING WITH A "CLICK"

Achieve a perfect connection every time with built-in patented technology that delivers a haptic "click" when optimum torque is achieved through finger-tightening.

FLEXIBLE TUBING

Our special 1/32" OD tubing prevents kinking and allows considerable flexibility to route throughout your instrument. Tubing is usable in any Liquid Chromatography application.

ZERO DEAD VOLUME

Proprietary sealing technology eliminates extra internal volume.

FINGER-TIGHT TO 19,000 PSI (1,310 bar / 130 MPa)

100+ CONNECTS & DISCONNECTS

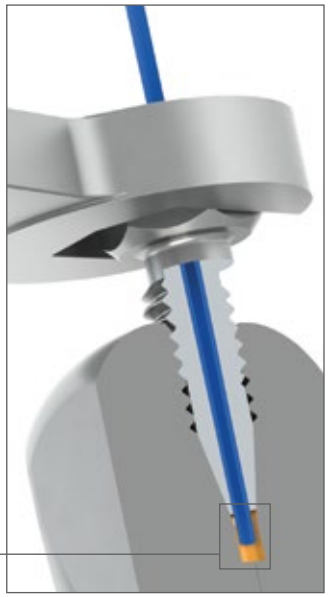
NO PEAK TAILING OR BROADENING

CLICKS FOR EXACT TIGHTENING

MINIMIZE CARRYOVER RISK

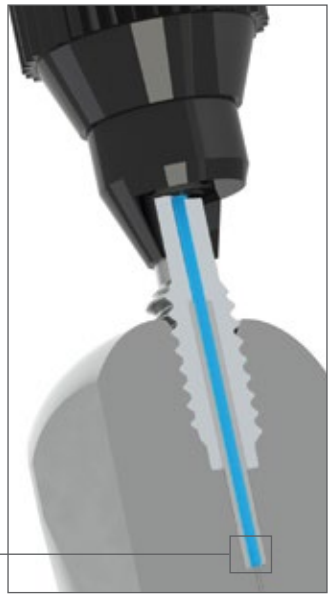
MarvelXACT vs. Conventional Coned Fittings

Conventional coned fittings require a ferrule in conjunction with a fitting for proper sealing. They depend on complex techniques, including tools, to improve sealing performance, which significantly increases probability of extra internal volume and poor chromatography results. The excessive force needed for tightening increases wear of expensive components and the likelihood of replacement, adding to overall costs.



EXTRA INTERNAL VOLUME

MarvelXACT fittings do not depend on ferrules. They seal at the bottom of the port, without complex techniques, which significantly reduces required torque and enables many more connects and disconnects. MarvelXACT significantly reduces wear on your hardware, increasing product life. An enhanced proprietary tip design also ensures zero dead volume (ZDV) and better chromatography results.



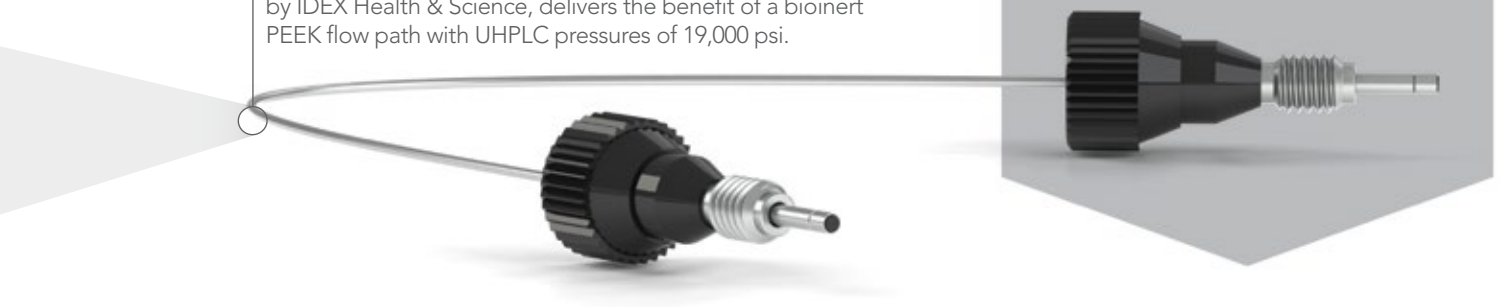
ZERO DEAD VOLUME

FOR ORDERING AND TECHNICAL SUPPORT, VISIT:

idex-hs.com/MarvelXACT

TRUE BIOCOMPATIBILITY

PEEK-Lined Stainless Steel tubing technology, developed by IDEX Health & Science, delivers the benefit of a bioinert PEEK flow path with UHPLC pressures of 19,000 psi.

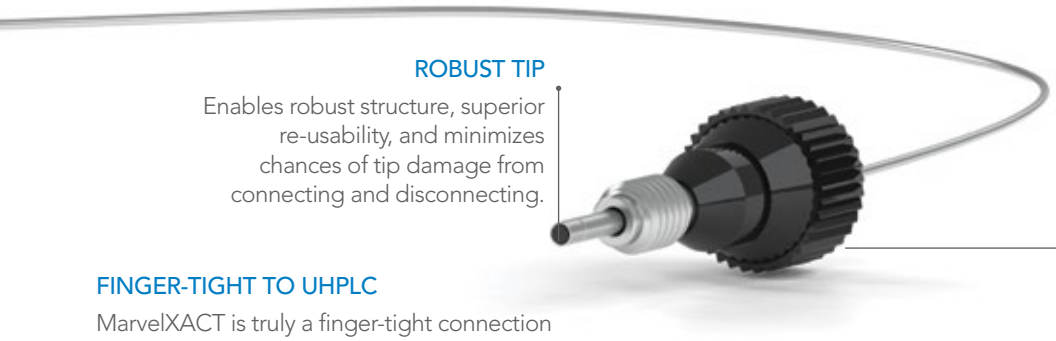


ROBUST TIP

Enables robust structure, superior re-usability, and minimizes chances of tip damage from connecting and disconnecting.

SMALL & ACCESSIBLE

Fittings are small enough to fit in tight spaces, yet allow for finger-tightening at UHPLC pressures.



FINGER-TIGHT TO UHPLC

MarvelXACT is truly a finger-tight connection system that has a patented torque-limiting mechanism for exact tightening every time, and seals up to 19,000 psi (~1,310 bar) for routine use.

MARVELXACT™

MarvelXACT™ Technical Specifications

Length:	150 mm	250 mm	350 mm	500 mm	600 mm
PEEK-Lined Stainless Steel Assemblies*					
25 µm ID	UPFP-7025150	UPFP-7025250	UPFP-7025350	UPFP-7025500	UPFP-7025600
50 µm ID	UPFP-7050150	UPFP-7050250	UPFP-7050350	UPFP-7050500	UPFP-7050600
75 µm ID	UPFP-7075150	UPFP-7075250	UPFP-7075350	UPFP-7075500	UPFP-7075600
100 µm ID	UPFP-7100150	UPFP-7100250	UPFP-7100350	UPFP-7100500	UPFP-7100600
Stainless Steel Assemblies*					
100 µm ID	UPFS-7100150	UPFS-7100250	UPFS-7100350	UPFS-7100500	UPFS-7100600
125 µm ID	UPFS-7125150	UPFS-7125250	UPFS-7125350	UPFS-7125500	UPFS-7125600
254 µm ID	UPFS-7254150	UPFS-7254250	UPFS-7254350	UPFS-7254500	UPFS-7254600

**Product availability and lead times may vary depending on the configuration.*
Contact Customer Service at +1 800 426 0191 or email CustomerService.hs@idexcorp.com for details.

Product Specifications

Pressure Capability	19,000 psi (~1,310 bar, 131 MPa) for routine use.
Installation Method	Finger-tighten until the first "click" feedback is received.
Tubing Type	1/32" OD flexible 316 Stainless Steel with 1/16" OD rigid tube ends
Fitting Type	10-32 threaded, PEEK fittings with 316 Stainless Steel threads
Wetted Materials	**PEEK-Lined versions:** PEEK | **Stainless Steel versions:** PEEK and 316 Stainless Steel
Maximum Use Temperature	120 °C

NOTE: The above performance specifications apply to use with appropriately-designed receiving ports under optimal conditions, using water for the testing process. If different conditions are used, the expected pressure threshold will be different.

IMPORTANT NOTES

- MarvelXACT tubing includes a sleeve to assist in product identification, containing details for ID, length, and part number:

- Minimum recommended bend-radius with MarvelXACT tubing is 1/4" (~6.35 mm).

REGULATORY COMPLIANCE

As of the date of publication, MarvelXACT is compliant with current RoHS and REACH regulations.

INSTALLATION INSTRUCTIONS

Finger-tighten until the first "click" feedback is received.

Learn more at idex-hs.com/MarvelXACT

DEGASi® PLUS GPC

is the right choice of degasser if you are working with 100 % organic solvents in your fluidic line. Example of application areas where this degasser is successfully used are GPC (Gel Permeation Chromatography) and Normal Phase Chromatography.

"when you are using 100 % organic solvents in your fluidic line..."

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DEGASi® GPC uses the same 480 µl Systec AF™ degassing membrane as used in DEGASi® Classic. The main difference compared with the DEGASi® Classic is that we use a stented version of the vacuum chamber in the DEGASi® GPC.

The stent is a short piece of a stainless steel tube placed inside the ends of the degassing membrane, in order to make the internal ferrule in the bulkhead to get a better grip. This solution makes an even more secure internal connection when working with 100 % organic solvents in the fluidic line.

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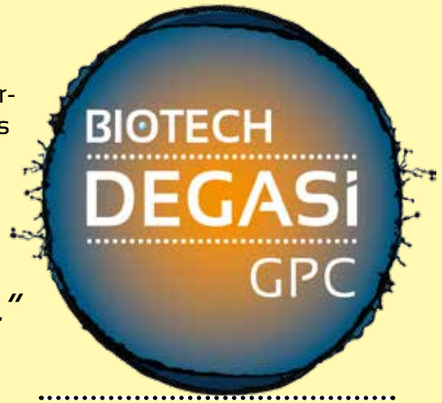
0003-6624	4	480 µl
0003-6625	5	480 µl
0003-6626	6	480 µl

PRODUCT FEATURES

- Ultra-high degassing efficiency
- Fits every system
- Long life expectancy 5+ years continuous (24/7) running capacity
- Easy to prime
- Almost silent
- Closed loop vacuum control means constant vacuum (variable RPM)
- ZHCR® patented control eliminates baseline fluctuations
- Excellent chemical compatibility flow path
- Continuous vacuum system monitoring to ensure optimum operational conditions are maintained
- Advanced error and leak checking functions
- CE & RoHS compliant



GENERAL SPECIFICATIONS

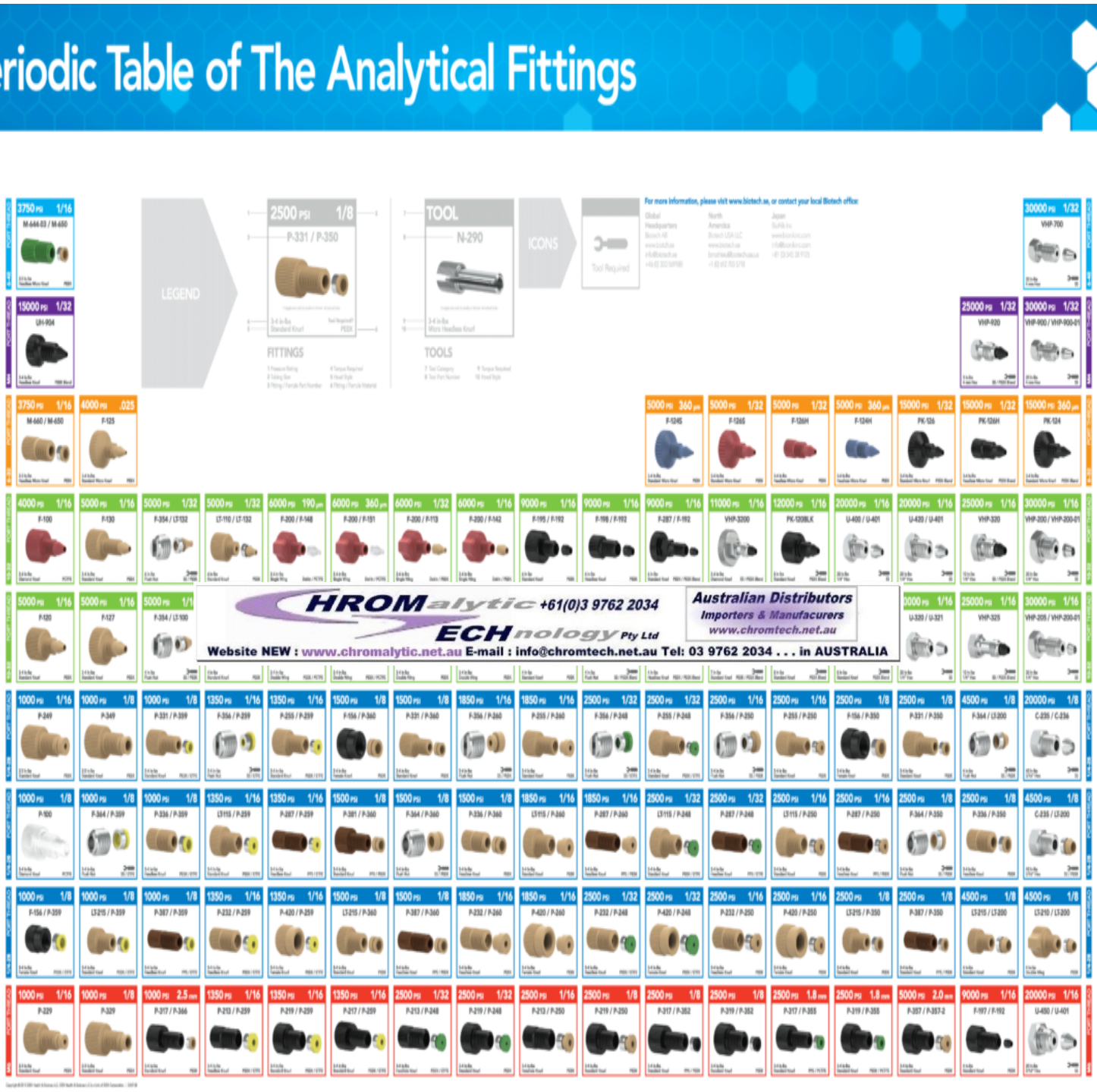
Degassing Channel Tubing:
Systec AF™ (0.045" ID)
Maximum Channel Pressure:
70 PSI
Wetted Materials:
Systec AF™, PPS, Glass-filled PTFE
Stainless Steel
Liquid Connection:
1/4"-28 UNF threaded flat-bottom port
Size (L x H x W):
245 x 111 x 59 mm

POWER REQUIREMENTS USING SUPPLIED AC ADAPTER

24 V Power supply included.
Required input to power supply:
110-240 V 50/60 HZ

Wall Sockets: 4 supplied with AC Adapter, Interchangeable: North America,Japan, U.K., Continental Europe, Australia

Periodic Table of The Analytical Fittings



IDEX HEALTH & SCIENCE | BIOTECH

Fluidics for Life

Fluidic Connections | Valves | Pumps | Degassers | Column Hardware | Manifolds

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Australian Distributors
Importers & Manufacurers
www.chromtech.net.au
Website NEW : www.chromalytic.net.au E-mail : info@chromtech.net.au Tel: 03 9762 2034 . . . in AUSTRALIA

Biotech Liquid Flow Meter

QuickStart™ Modular Sensing Solutions

Unparalleled Control for System Flow & Pressure

IDEX HEALTH & SCIENCE BIOTECH

Intelligent Solutions for Life™

Fluidics | Optics | Consumables | Assemblies

Quickly monitor and control your fluid flow and pressure to achieve accurate instrument output and maximized system capabilities with QuickStart™ Sensors from IDEX Health & Science

Now you can easily manage flow and pressure across your entire fluidic system, and save crucial problem-solving time by using our dynamic family of in-line sensors. Our experts have applied decades of knowledge, and over five years of extensive life testing and innovation, to deliver the most advanced transducer technology inside compact, plug-and-play sensors. A fusion of modularity, multiplexing, and intelligent sensing make demanding tasks effortless, giving you exceptional control over every region of your flow path. Each sensor automatically monitors and provides accurate, real-time data with digital output, allowing you to predict failure, mitigate risk of damage, and optimize your system to maintain maximum performance with ease. Super responsive yet small, our modular sensors are simple to integrate into instruments of any size, and can be installed in arrays to deliver essential data in real time.

PRESSURE SENSORS

Immediately detect blockages and mitigate risk — *before* important samples are compromised — with QuickStart™ Pressure Sensors from IDEX Health & Science. Meticulously engineered and broadly tested for precision sensing, our premium QuickStart Pressure Sensors continually monitor system parameters to provide you the information you need to keep your instrument operating reliably. QuickStart Pressure Sensors connect in-line to your system easily, with minimal solution carryover and bubble trapping.

PRESSURE RANGE
.25 – 14 bar absolute

OPERATING TEMPERATURES
+5 °C – +50 °C

SMALL FOOTPRINT
1.1 x 1.5 in
Smaller than most other models on the market.

APPLICATIONS
IVD, BIO & POC
Chemically compatible with most reagents.

OUTPUT
DIGITAL

MONITOR PRESSURE
DETECT BLOCKAGES
PREVENT FAILURE

SMALL DEVICES, HUGE RESULTS

MODULAR FLOW-THROUGH DESIGN

Each sensing device has been engineered with an adaptive flow-through design to reduce carryover and prevent bubble trapping with a fully swept sensor flow path. Routine maintenance and replacement is fast too, significantly reducing your instrument downtime.

HIGH ACCURACY

Each sensor is fully calibrated, with verified performance, for high-precision plug-and-play applications.

LOW POWER CONSUMPTION

Expertly designed with proprietary processing architecture, our sensing devices deliver a high level of performance with an efficiency that maintains lower temperatures and reduces overall power consumption.

ARRAY CAPABILITIES

Built-in intelligence allows you to receive fluidic information across your entire instrument when using multiple sensing devices connected simultaneously.

STANDALONE OR MANIFOLD MOUNT

Sensors are available as a stand-alone inline component, or can be integrated with a manifold using 4 in-lbs of assembly torque.

SMALL FOOTPRINT

Optimized to make the most of a compact design, our sensors work with any instrument, large or small.

REAGENT COMPATIBILITY

Made from chemically inert materials, our sensors allow you to operate with the majority of reagents used in IVD, BIO and POC applications.

FLOW SENSORS

FLOW RATES
-1,000 – 1,000 µl/min

OPERATING TEMPERATURES
+5°C – +50° C

SMALL FOOTPRINT
1.6 x 1.0 x 1.2 in
Smaller than most other models on the market.

APPLICATIONS
IVD, BIO & POC
Chemically compatible with most reagents.

OUTPUT
DIGITAL

- CONTROL FLOW
- MITIGATE RISK
- MEASURE PERFORMANCE

Easily manage your flow rates and receive accurate, instantaneous data on system performance — saving critical analysis time — with IDEX Health & Science QuickStart Flow Sensors. Extensively designed and thoroughly tested for demanding fluid sensing applications, our superior QuickStart Flow Sensors identify flow rate variances to keep you informed of system sensitivities and potential problems that may require immediate attention. QuickStart Flow Sensors are easy-to-mount with a quick in-line connection, and are optimized for real-time analysis.

QuickStart™ Pressure Sensors

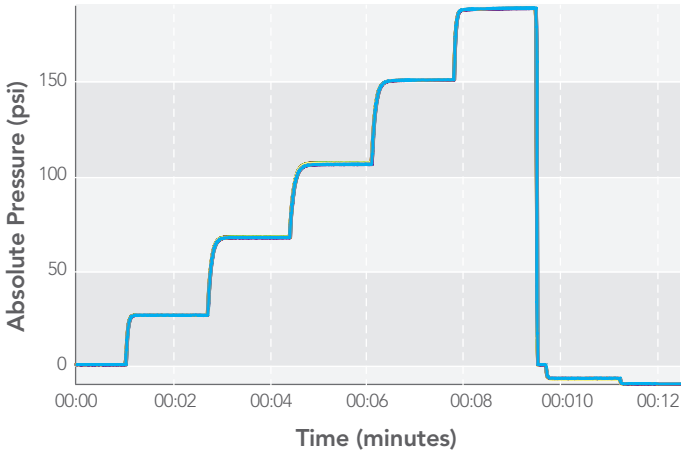
PART NUMBERS AND ACCESSORIES

Part #	Description
I2C PS200F	200 psi Pressure Sensor Standalone Fitting Option
I2C PS200M	200 psi Pressure Sensor Manifold Option
I2C PS200F EVAL	200 psi Pressure Sensor Evaluation Kit
PSCK-I2C	Pressure Sensor I²C Connection Kit

SPECIFICATIONS

Parameter	Specification
Output Signal	Digital
Operating Voltage	5.0 V
Digital Communication Bus	I²C
Full Scale Pressure Range	0.25 – 14 bar absolute
Accuracy Below Full Scale	< 1% full scale
Repeatability Error from Zero to Full Scale	1% of measured value or 0.05% of full scale (whichever error is larger)
Pressure Detection Response Time	67 ms
Operating Temperature	+5 °C – +50 °C
Ambient Storage Temperature	-30 °C – +100 °C
Proof Pressure	400 psi
Burst Pressure	800 psi

TYPICAL PRESSURE SENSOR OUTPUT



This graph shows the overlaid output from ten pressure sensors monitoring the same fluidic channel. High reproducibility and the capability for simultaneous reading of multiple sensors make the units extremely valuable for instrumentation applications. In this plot, the sensors are responding to a series of pressure increases over the sensor range.

QuickStart™ Flow Sensors

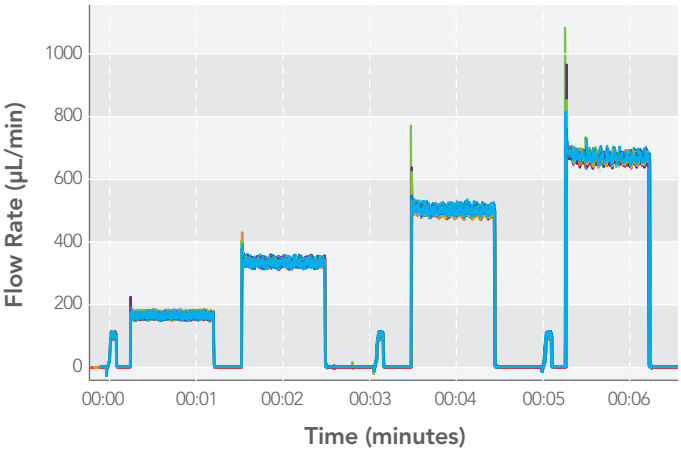
PART NUMBERS AND ACCESSORIES

Part Number	Description
I2C FS1000F	1,000 µL Flow Sensor Standalone Fitting Option
I2C FS1000M	1,000 µL Flow Sensor Manifold Option
UART FS1000F	1,000 µL Flow Sensor Standalone Fitting Option
UART FS1000M	1,000 µL Flow Sensor Manifold Option
I2C FS1000F EVAL	1,000 µL Flow Sensor Evaluation Kit
FSCK-I2C	Flow Sensor I²C Connection Kit
FSCK-UART	Flow Sensor UART Connection Kit

SPECIFICATIONS

Parameter	Specification
Output Signal	Digital
Operating Voltage	3.3 V – 5.0 V
Digital Communication Bus	I²C / UART
Full Scale Flow Rate	1,000 µL/min
Sensor Output Limit	1,500 µL/min
Accuracy Below Full Scale	5% of measured value or 0.25% of full scale (whichever error is larger)
Repeatability Error from Zero to Full Scale	.5% of measured value or 0.025% of full scale (whichever error is larger)
Flow Detection Response Time	40 ms
Operating Temperature	+5 °C – +50 °C
Ambient Storage Temperature	-40 °C – +80 °C
Proof Pressure	40 psi (3 bar)
Burst Pressure	100 psi (7 bar)

TYPICAL FLOW SENSOR OUTPUT



This graph shows the overlaid output from ten flow sensors that are used to monitor the same fluidic channel. In this application, a pump and valve are used to infuse fluid through the fluidic circuit at varying rates. A variety of flow rate changes are observed on the sensors, indicating system response to pump flow and valve switching. Simultaneous monitoring of multiple sensors in such a way can easily show how minute adjustments to system components can affect the measured flow in the fluidic circuit.

IDEX HEALTH & SCIENCE BIOTECH

BIOTECH LIQUID FLOW METER

User Manual
AB-40010

CONTENT

1. NOTICES

Printed in Sweden.

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Råövägen 300
SE-439 92 Onsala
Sweden

Research Use Only.
Not for use in Diagnostic Procedures.

2. WARRANTY

Biotech AB makes no warranty, included but not limited to the common warranty legislation, for Quality and fitness of the product to a determined purpose.
In no event shall Biotech AB be liable for direct, indirect, special and consequent damages connected to the delivery, use or application of the product or its components.
Biotech AB guarantees that the product is free from hardware defects within the Warranty validity time. Should, within this time, a defect occurs, we will correct it free of charge.

All servicing will be handled by:
Biotech AB
Råövägen 300
439 92 Onsala
Sweden
Phone: +46 300 56 91 80
info@biotechfluidics.com

Freight expenses for the safe transport of the product to Biotech AB and back, must be carried by the customer.

Biotech AB grants no warranty for: Routine checks, Maintenance, Repair or Parts Replacement after normal wear; Consumables; Damages caused by total or partial blockage of tubings; Any type of Software; Damages caused by modification of the product without consent of Biotech AB; Warranty repair is void when the damages or errors where caused by: Unqualified or wrong handling like fall or strong Vibration of the Product. Accidents, natural catastrophe and all other causes which cannot be foreseen or controlled by Biotech AB, including but not limited to Storm, Water, Fire, Riot and abnormal Climate conditions.

Warranty validity Time

The validity Time of the Warranty is, if not otherwise agreed, one years from the day of purchase according to the Biotech General Terms, found on www.biotechfluidics.com/general-terms/

Safety

Safety rules according to the Swedish and European guidelines 89/3 92/EWG §1.1.2.b have been taken into account during design of the instrument. All electronic In- and Outputs are very sensitive to electrostatic discharge (ESD). The use of strong electromagnetic sources like Cellular Telephones or Radio Transmitters near the instrument should be avoided.

3. IMPORTANT USER INFORMATION

All users must read this manual to fully understand the safe use of the Liquid Flow Meter.

WARNING!

The WARNING! Sign highlights instructions that must be followed to avoid damage. Do not proceed until all stated conditions are clearly understood and met.

4. CE CERTIFYING

This product meets all requirements of applicable CE-directives. A copy of the corresponding Declaration of Conformity is available on request. The CE symbol and corresponding declaration of conformity, is valid for the instrument when it is:

- used as a stand-alone unit, or
- connected to other CE-marked Biotech AB instruments, or
- connected to other products recommended or described in this manual, and
- used in the same state as it was delivered from Biotech AB except for alterations described in this manual.

5. RECYCLING

This symbol indicates that the waste of electrical and electronic equipment must not be disposed as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer for information concerning the decommissioning of equipment.

6. WARNING!

This is a Class A product. In a domestic environment, it might cause radio interference, in which case the user might be required to take appropriate measures.

7. FEATURES

The AB-40010 is specifically designed for continuous measurement of flow rate without interference in Fluidic systems. Compatible with all HPLC and GPC/SEC solvents, it is conveniently sized and powers itself from a USB connection. A modern PC based app allows continuous recording and storage of the measured flow rates. The current flow rate is also displayed on the Flow Meter's integral high-resolution OLED Display, allowing easy control of current flow value.

Extraordinary high resolution and wide dynamic range makes the BIOTECH AB Liquid Flow Meter the perfect flow monitoring tool for the most demanding HPLC and GPC/SEC systems.

By using the Liquid Flow Meter AB-40010 our tips/ warnings as well as our terms of delivery are accepted.

1. Only use in laboratory! The use for medical purposes, in the food- or beverage processing, plant breeding or something else is expressly required or permitted. Any type of use and the related specific suitability of the product for this purpose is to be checked by the user.
2. **This product may be used only by trained personal.** Correct behavior in the laboratory are presupposed by trained personal. We accept no liability for improper use of the product. If in doubt, ask the competent commissioner for laboratory safety.
3. Notes on environmental and health hazards and also the handling and disposal of the solvent used must be taken from the safety data sheets of the solvent suppliers.
4. We advise the customer orally, writing or by trials, this must be done in good faith but without liability for us, and does not exempt the customer from testing the goods to their suitability for the intended processes and uses.

7.1. SITE SELECTION

The Flow Meter should be installed in an area free of extreme temperature, humidity, sunlight, shocks and vibration. Use delivered Sticky Pads to place the Flow Meter correctly.

7.2. UNPACKING

Please check immediately after delivery the content of the package for transport damages.
Please also check after unpacking if all components are present. Should anything miss, please contact our Support Department.

7.3. PACKING LIST

A complete delivery consists of:

- 1 Biotech Liquid Flow Meter
- 1 Mini-USB cable, 1m
- 2 PFA Plug, ⅓-28 Flat Bottom
- 2 FEP Tubing, 1/16" OD, 0.75 mm ID 0,4m
- 3 P-249 One-Piece Super Flangeless™ PEEK nut 1/4"- 28 Flat Bottom for 1/16" OD
- 1 F-120 One-Piece 10-32 coned PEEK fitting 1/16"
- 2 Sticky pads
- 1 User Instruction Manual
-

PC Connectivity Package, available as download link at https://www.biotechfluidics.com/products-sensors-flow meter/

8. FLUID CONNECTIONS

First, remove the caps.

8.1. LEFT SIDE

Connect the FEP capillary with the Flat Bottom fitting at the left side of the Flow Meter. For the other side of the capillary take the Flat Bottom or the coned fitting, see Figure 1.

Figure 1 Left Side, INLET Port Flow Meter

8.2. RIGHT SIDE

Route the other side of the capillary to a waste bottle or connect it to your fluidic system with a suitable fitting, see Figure 2.

Figure 2 Right Side, OUTLET Port Flow Meter

If everything is connected properly, the Flow Meter should look Figure 3 (descripted picture, color of Fittings may change).

Figure 3 Connection of the Flow Meter

The Flat Bottom fittings may only be tightened finger tight!

9. OPERATING

9.1. POWER-ON AND START

The Flow Meter AB-40010 is easy to use with USB-powered plug. Connect the delivered USB cable to the flow meter and a computer. Upon powering up the instrument the display will shortly presents the Biotech AB logo.

Figure 4 Flow Meter Start Screen

9.2. MAIN SCREEN

Figure 5 Flow Meter Main Screen

Value	Current Flow Rate
H2O	Show calibrated eluent [H2O; MeOH; THF; etcetera]
mL/min	Flow rate unit

9.3. DATA ACQUISITION

Start the app (see Chapter 10) or open a Terminal like HTERM and enter following settings:

Port	COM X -> find at device manager
BaudRate	9600
Data	8
Stop	1
Parity	None
CTS Flow control	No
Newline at	CR+LF

Press the connect button and data acquisition starts automatically.

10. HOW TO INSTALL THE FLOW METER APP

Start the Flowmeter_Vx.x.x.x_Setup.exe and follow the installation menu.

Connect the Flow Meter USB cable to a computer and start the App.

11. USING THE FLOW METER APP

11.1 MAIN SCREEN

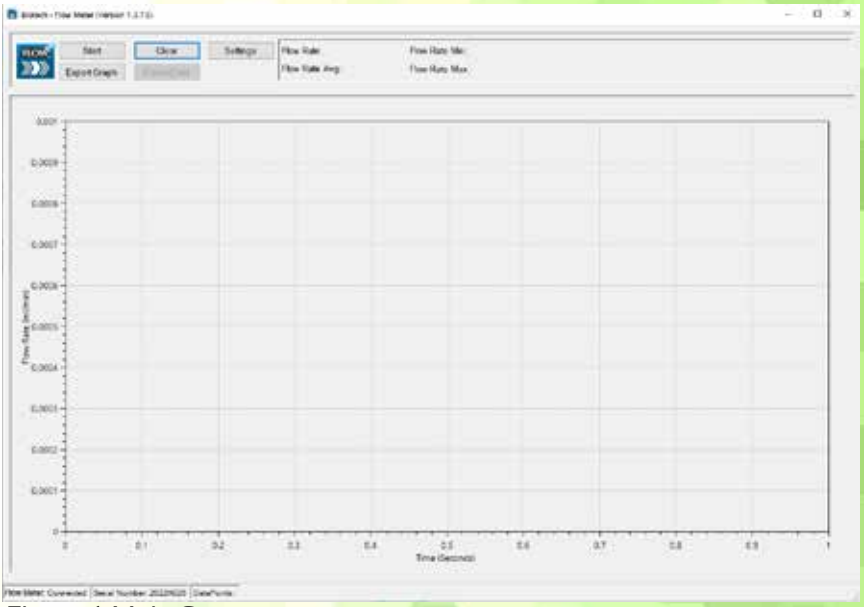

Figure 6 Main Screen

After installing and connecting the Flow Meter, the main screen shows the status connected and the serial number of the connected device.

Press START to begin the data collection.

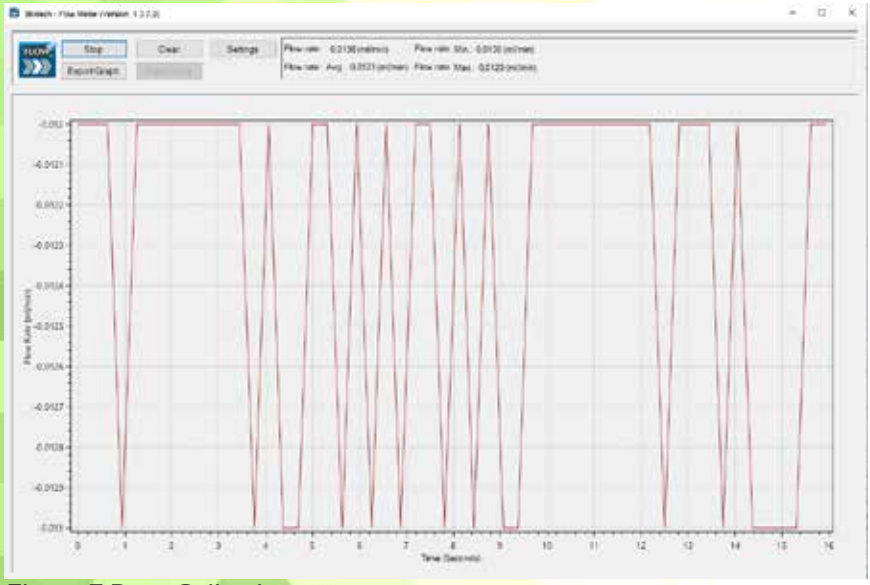

Figure 7 Data Collection

Starting the data collection information about actual Minimum, Maximum and Average Flow Rate. By scrolling the mouse wheel, you can zoom in and out.

Press STOP to discontinue the data collection. The data will be saved automatically (default, change in settings -> logfiles).

To start a new sequence, press CLEAR first and then START.

11.2 SETTINGS

In settings menu are the three registers: Device, Logfiles and About.

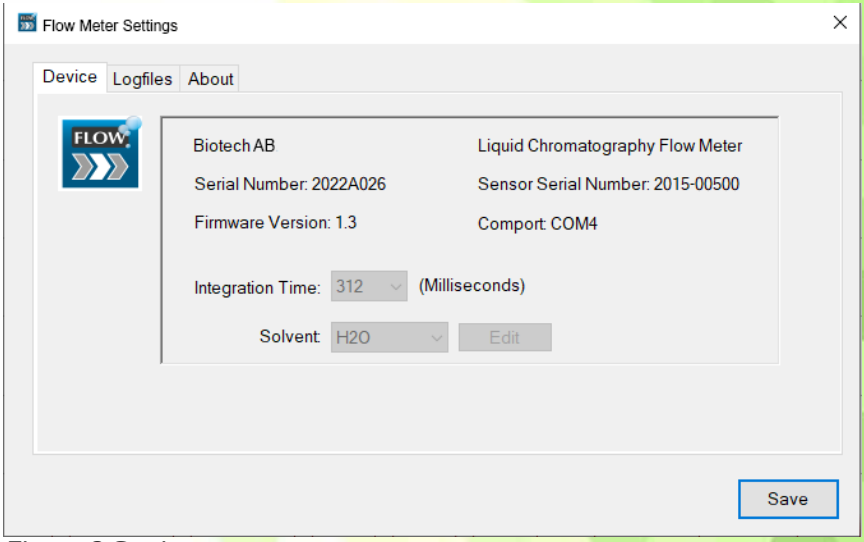

Figure 8 Settings

DEVICE: Provides Information about the Serial Number, Firmware Version and Com port.
Set the Integration Time in Milli Seconds (default 312 ms)

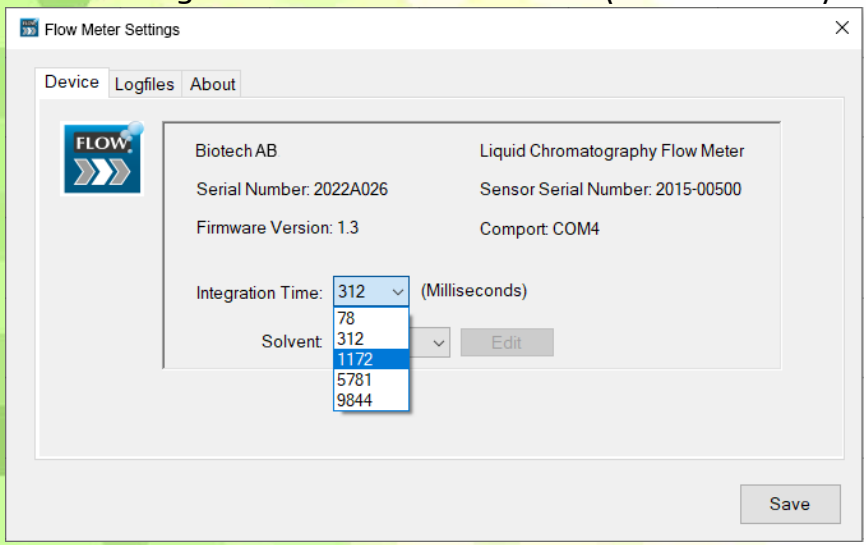

Figure 9 Integration time Settings

Set the solvent in use (default H2O).

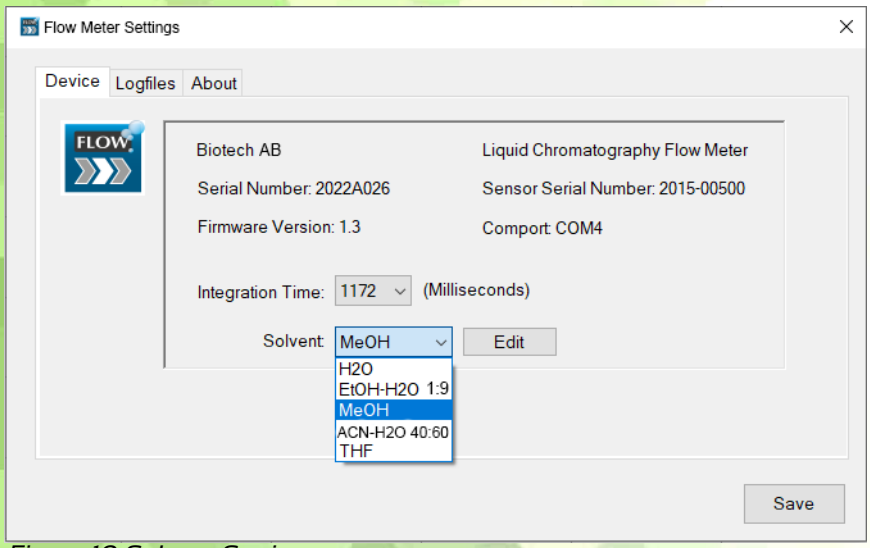

Figure 10 Solvent Settings

 NOTE: All changes are stored in the device itself.

EDIT: Change the Solvent Calibration Factor (make sure to use the correct one)

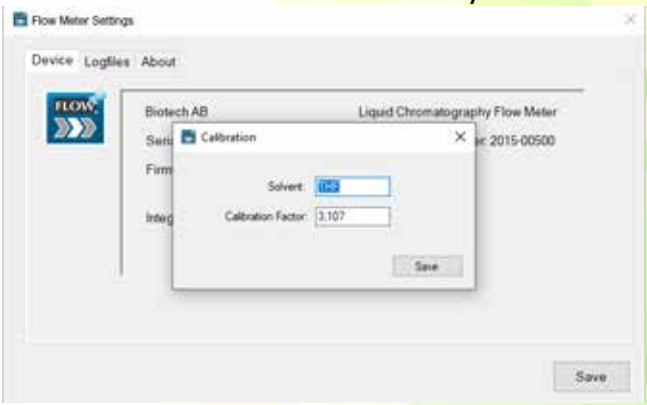

Figure 11 Change THF Calibration Factor

LOGFILES: Provides information about data storage location.

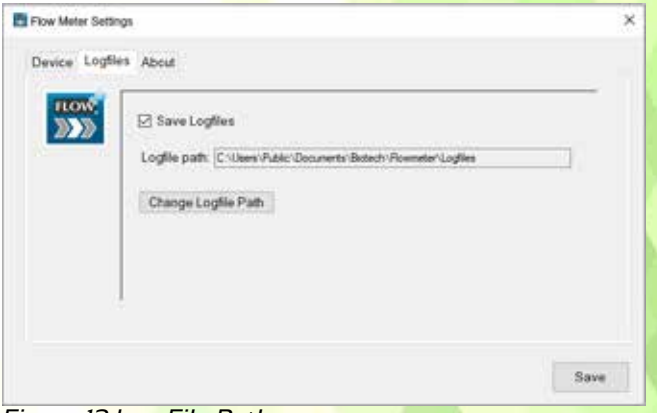

Figure 12 Log File Path

Save Log Files:
Automatically save CSV logfile when measurement stops or at 100 000 data points (then a new sequence starts automatically).

Change Log File Path:
Change path for automatic log file storage.

ABOUT: Provides information about the manufacturer.

11.3 EXPORT GRAPH

Save the measurement as a PNG file.

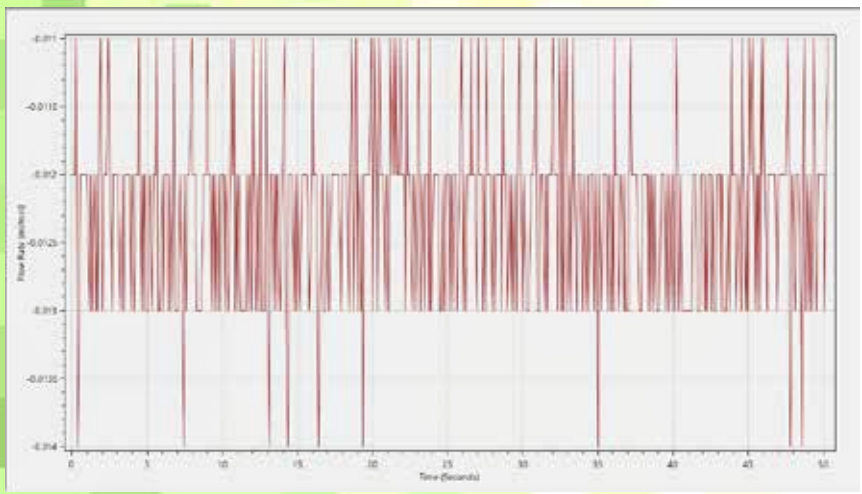

Figure 12 PNG Data

11.4 EXPORT DATA

Export the measurement as CSV data.
Measurements cannot be reloaded into the app.

12. TROUBLESHOOTING

Error	What to do
The Flow Meter initialization failed. Status: Not connected	Check the USB connection with the computer and the Flow Meter
	Make sure that no other software blocked the com-port
	Restart the App
	Make sure that there is no power-safe modus (USB ports) set on the computer

Table 1 Troubleshooting

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