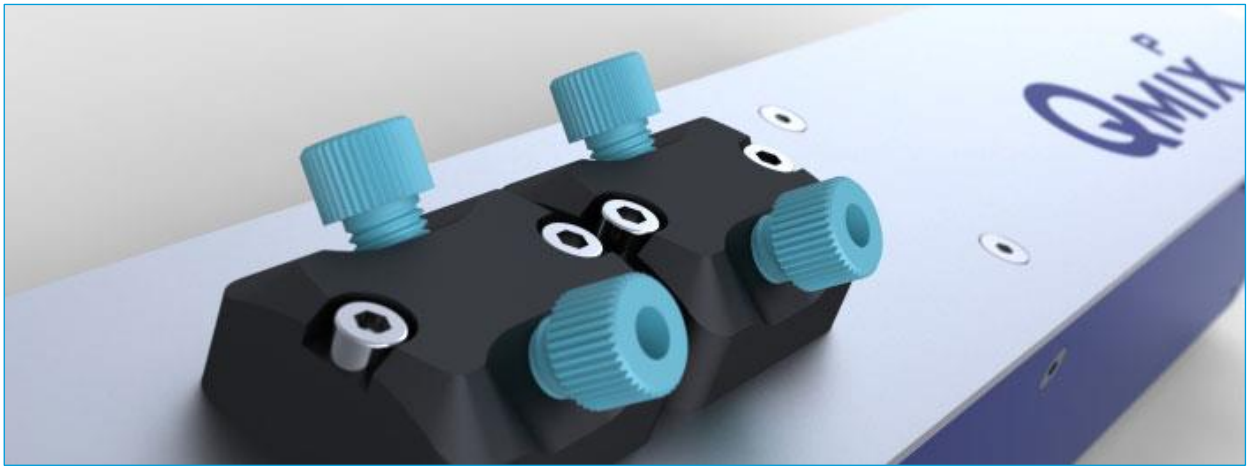
CETONI

CE QMIX P

Hardware Manual



ORIGINAL INSTRUCTIONS 2.02 – MARCH 2016

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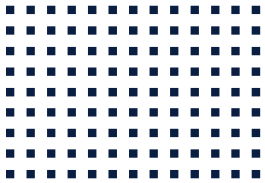


1 Overviews and Indexes

1.1 Content

1.2 Change History

REV	DATE	CHANGE
1.00	01.06.2012	First version of Qmix hardware manual
1.01	05.02.2013	Various minor changes
1.10	12.09.2013	Added Qmix BaseXT and TC, power consumption Q+
1.11	21.08.2014	Adaptation of the maximum heating temperatue of the Reaction module Q+ heating column and the High temperature T-mixer due to material changes.
2.00	31.03.2015	Thematic splitting of the manual “Qmix hardware”
2.01	21.08.2015	Updating the pressure equipment directive of 97/23/EG to 2014/68/EU
2.02	11.03.2016	New corporate design

2 Technical Data

2.1 Performance

2.1.1 Mechanical Data

DIMENSIONS (L X W X H)	310 x 55 x 70 mm
WEIGHT	≈750 g
PRESSURE SENSORS	20, 50, 100 und 200 bar pressure overload max. 100% (max. 1min)
INTERNAL VOLUME	≈115µl @ ≤50bar, ≈60µl @ ≥100bar

2.1.2 Electrical Data

SUPPLY VOLTAGE	24VDC
POWER CONSUMPTION	1W

2.1.3 Interfaces

CONNECTIONS	¼“-28 UNF

2.1.4 Environment

OPERATING TEMPERATURE	0°C to 50°C
STORAGE TEMPERATURE	-20°C to 75°C
OPERATING HUMIDITY	20% to 90%, non condensing
STORAGE HUMIDITY	20% to 90%, non condensing

2.1.5 Wetted Parts

SENSOR	AI2O3
SENSOR HOUSING	PPS GF40
SEAL	FKM

3 Application Purpose

3.1 General Description of the Device

The Qmix pressure measurement module is a part of the Qmix micro reaction and analysis system. It allows the measurement of the pressure at various points in the microfluidic system.

3.2 Intended Use

The Qmix pressure measurement module is used for measuring pressures in microfluidic systems. It is intended for use in a Qmix micro reaction system from CETONI. Application usually takes place in laboratory-like rooms.

3.3 Reasonably Foreseeable Faulty Application

A use for applications distinct from the intended purpose can lead to dangerous situations and is to be omitted.

CAUTION. The unit must not be used as a medical device or for medical purposes.

3.4 Safety Advice

For the safe operation of Qmix P pressure measuring module it is necessary to observe the safety measures from the general section of the manual for the Qmix micro reaction module.

Take into account in particular the information regarding the European Pressure Equipment Directive 2014/68/EU.

IMPORTANT. Please read this manual as well as the related software manual carefully and completely before putting your Qmix system into operation.
Additionally please read the general parts of the manual carefully and completely before putting your Qmix system into operation.

4 Transportation and Storage

The individual modules must not be lifted or transported plugged-together. Transportation of plugged-together devices is only allowed in the original packaging.

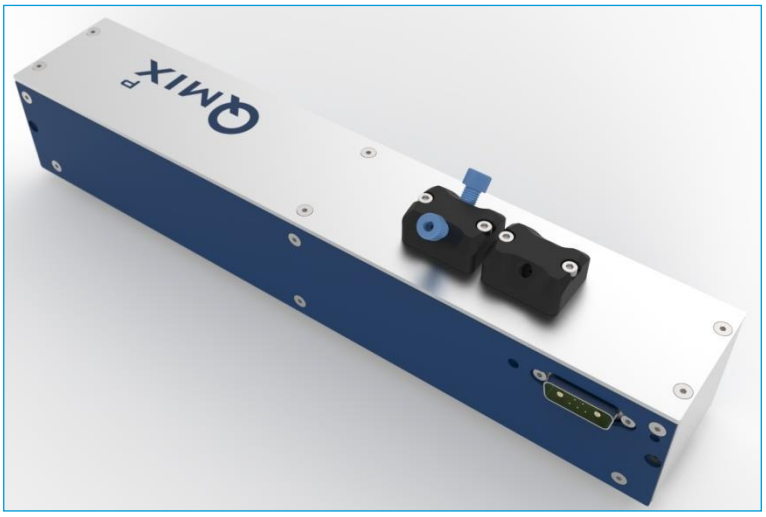
Use the original packaging for transportation or shipping of the module.

Concerning the storage conditions, please observe the data from chapter “Technical data”.

CAUTION. Transportation, storage or operation of the modules below 0°C with water in the fluid passages may cause damage to the module.

CAUTION. Risk of damaging the device. Do not transport the modules plugged-together.

5 Hardware



The Pressure Measurement Module P provides two independent pressure sensors. Different sensors can be equipped to cover different pressure ranges. The operation concerning the software is treated in the related software manual.

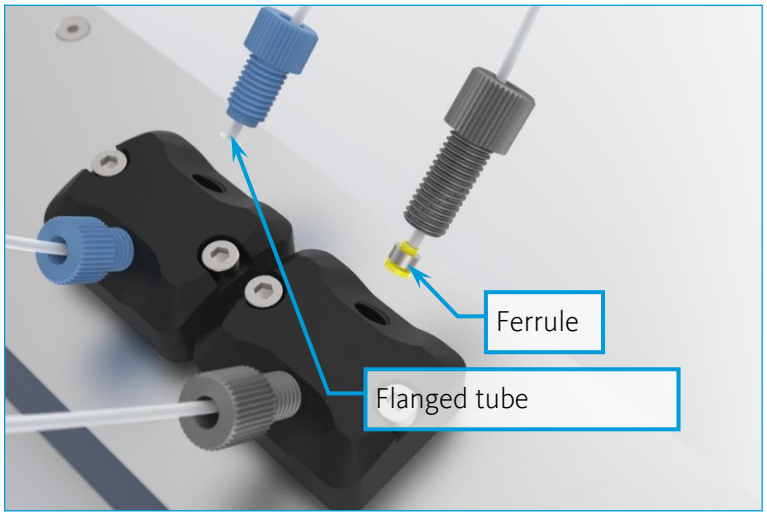
The pressure sensors are connected to the application with ¼”-28UNF fittings. Pay attention that the fittings and tubes of your choice withstand the pressure to be expected during application.

CAUTION. Pay attention that the fittings and tubes of your choice withstand the pressure to be expected during application.

CAUTION. Check chemical resistance of the wetted parts against the used chemicals before using the device.

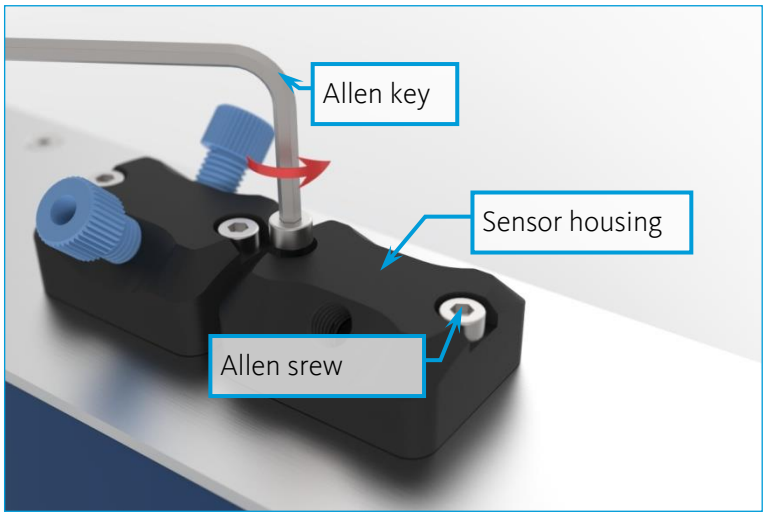
In combination with a 20 bar pressure sensor flanged PTFE tube can be used for instance. A tool kit to make the flanges can be purchased from the CETONI GmbH. For higher pressure ranges we recommend the use fittings with ferrules in combination with PEEK tubes.

The direction of flow through the sensor does not matter. So it is your decision which of the ports you would like to be in- or outlet.

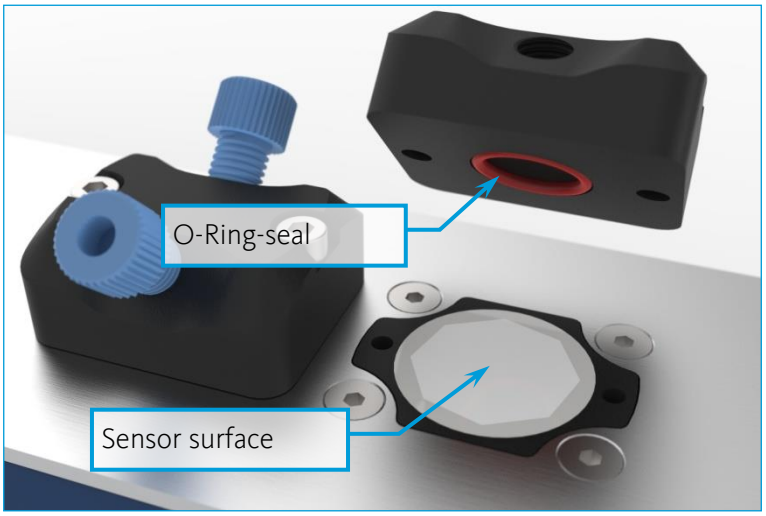


The sensor can be cleaned by simply flushing it with a rinsing fluid.

If the sensor is more heavily soiled you can also dismantle the sensor housing by simply removing the two Allen screws with a 2.5mm Allen key:



After removing it, you can wipe the inside of the housing and the sensor surface carefully. Furthermore you can exchange the o-ring seal.



During reassembly, pay attention that the O-ring seal is placed correctly in the recess of the housing. Then put the housing back on and tighten the two screws evenly.

6 Maintenance and Care

If used in accordance with intended purpose, the device is maintenance-free. Should there be a failure despite this, which you cannot eliminate yourself, or which requires opening the device, please contact CETONI GmbH to coordinate further actions. The device may only be opened by CETONI GmbH or thereby authorized service staff. Otherwise the warranty and guarantee claims are void.

Software-related troubles are dealt with in the Software Manual.

For cleaning it please rub the surface gently with a soft, damp cloth. The cloth must not be wet, so that no fluency can trickle into the device. In case of a heavier soiling you can also use a little bit of detergent or alcohol.