



QMIX MICRO REACTION COMPONENTS

Description

The modular QMIX (micro) reaction system represents the basic experimental equipment to improve your synthetic & analytic tests in various fields of application (from analytical and synthetic flow chemistry to nano-technology).



Advantages

The modular concept of a system with a variety of available elements offers great flexibility to the user and various application scenarios. By using micro reaction technology, sample consumption will be reduced, control of process parameters improved and safety increased during chemical analysis and synthesis.



In combination with our NEMESYS pumps, the QMIX module family helps to transfer conventional methods (in particular, batch reactions) into flow conditions, to investigate or upgrade existing processes, and develop novel chemical reactions.

Electrical Data

Power Supply Voltage.....90 – 264 V AC
Power Supply Frequency.....47 – 63 Hz
Basic System Power (Power Extension Module).....120 / 600 (600) W

Interfaces

USB1.1 and 2.0

Operating System

Win XP / Vista / 7 / 8.....32 / 64 bit

Equipment Configurations

Standard Wetted Materials:

Reactors.....Glass / SST
Tubing..... PTFE / PEEK / Glass/ SST
Fittings..... PTFE / PEEK / SST
Syringes.....Glass / SST
Others.....PPS GF40

High Performance Materials:

Reactors..... Glass / Ceramics / Hastelloy / Alloys
Tubing..... PTFE / Glass / Alloys
Fittings..... PTFE / Alloys
Syringes..... PTFE / Glass / Hastelloy
Others..... PPS GF40

Pressure Resistance.....up to 100 bar*

*...selected modules may be used at higher pressures, customizations available

Common Control Software - QMIXELEMENTS

The graphical Windows-based QMIXELEMENTS provides full access to the wide array of features of your QMIX components via an easy-access common interface.



QMIXELEMENTS is a plugin-based and modular software solution for the control of various cetoni devices. Laboratory automation becomes a breeze – from NEMESYS syringe pumps, positioning systems, and control devices, etc. to external and pre-existing equipment.



For automation purposes, QMIXELEMENTS features a powerful graphical scripting system. This helps to achieve the desired automation results in a short time without special programming skills!

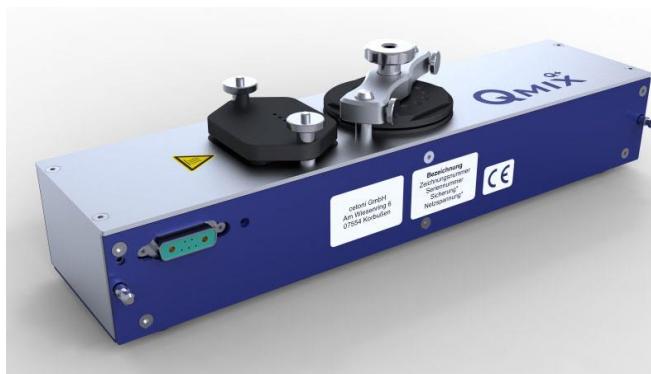


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Heating Module

Q MIX Q+

The Q+ module features an independently heated capillary zone next to the standard heated reactor area. The reactor area is compatible with different off-the shelf microfluidic reactors (glass, stainless steel, etc.) but may be fully customized to fit your specific reactor needs. The reaction loop features a ratchet to wind up a user-defined length of tubing for pre- or post-incubation steps.



For prolonged incubation tasks, we offer a Q+ module with a capillary tower that may hold tens of meters of tubing.

Power Consumption	90 W
Dimensions (L x W x H)	310 x 75 x 89 mm
Heating Temperature	200°C
Reactor Area	
Dimension (L x W)	40 x 40 mm
Fluidic Connection (Standard Holder)	flanged capillary
Suitable Chips (L x W)	35 x 35 mm max.
Capillary Zone	
Length of Capillary (Ratchet / Tower)	1 m / 15 m (1/16" OD)
Type of Capillary	PTFE / PEEK / Metal (1/32" - 1/8")

Cooling & Heating Module

Q MIX Q-

The heart of the Q- module is a controlled thermoelectric Peltier element for the precise cooling and heating of the reactor area. To get the maximum cooling performance it is possible to connect the module to an external cooling fluid.



Power Consumption	80 W
Dimensions (L x W x H)	310 x 98 x 91 mm
Reactor Area (L x H)	40 x 40 mm
Suitable Chips (L x H)	35 x 35 / 16 x 12.5 mm
Fluidic Connection (Standard Holder)	flanged capillary
Heating Temperature	100°C
Cooling Temperature	20 – 30°C Below Ambient*
Coolant Ports	1 Inlet, 1 Outlet

*...Peltier only, without pre-cooling

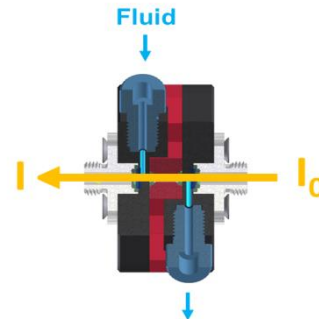


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Spectrometer Module

Q MIX λ

The spectrometer module houses a fast and precise online spectrometer for UV, VIS, or NIR applications (200 – 1100 nm). Besides the pre-configured version that covers most basic needs for a broad application range, we also offer a customizable version to be tailored to your specific requirements.



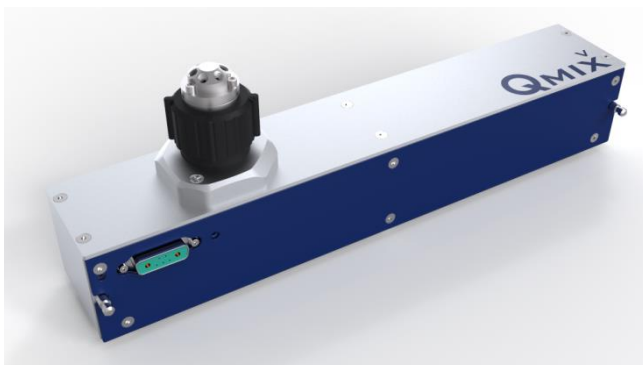
Dimensions (L x W x H).....	310 x 55 x 89 / 100 mm
Measurement Channel Length.....	10 / 25 / 50 mm
Channel Internal Volume	16 / 23 / 34 μ l
Fluidic Connection.....	1/4"-28 UNF
Types.....	UV - VIS / VIS - NIR
Wavelength	200 – 1100 nm / Custom
Optical Res.(FWHM).....	1.5 nm*
Slit.....	25 μ m*
SNR.....	1500:1*

*...preconfigured version, custom versions maybe available on request

Valve Module

Q MIX V

The valve module is a highly versatile solution for intelligent and complex fluid management: whether fluid distribution, diversion, or injection purposes. Consequently, it makes any NEMESYS/Q MIX setup more versatile to cover highly complex fluidic circuits. A wide range of low- and high-pressure rotary valves is available to suit your needs



Power Consumption.....	24 W
Dimensions (L x W x H).....	310 x 55 x 97 mm
Fluidic Connection.....	Fittingless / 10-32 UNF
Position Capability.....	Multi-Position
Actuation Speed.....	100 – 280 ms
Internal Volume.....	0.28 – 32 μ l
Pressure Rating.....	10 – 1000 bar (15000 psi)

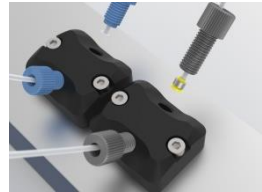
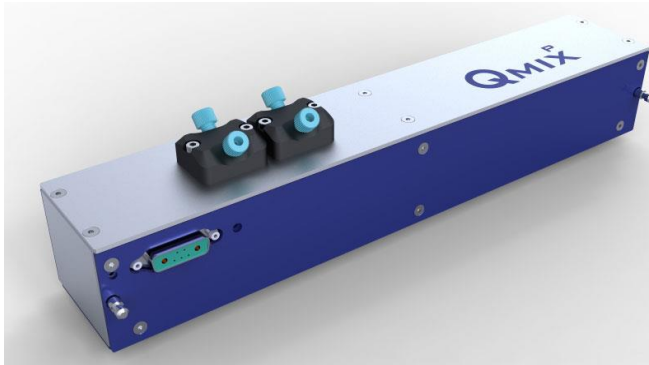


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Pressure Sensing Module

Q MIX P

The pressure measurement module includes two independent and separately configurable ceramic pressure transducers with small swept volumes. The module allows for pressure measurement of two separate fluid channels – from vacuum to 200 bar.

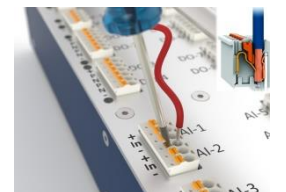
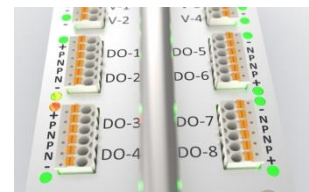


Power Consumption	1 W
Dimensions (L x W x H)	310 x 55 x 69 mm
Fluidic Connections	1/4"-28 UNF
Sensor Material	Ceramics
Internal Volume	60 - 113 µl
Pressure Rating	0.5 – 200 bar (vacuum possible)
Resolution/Accuracy	0.4% Full Scale

Custom Integration Module

Q MIX I/O

The I/O module provides a variety of digital and analogue inputs and outputs for integration of 3rd party devices and sensors in the QMIXELEMENTS software for more automation possibilities.



Power Consumption	max. 120 W (max. 3 A)
Dimensions (L x W x H)	310 x 71 x 112 mm
Pluggable Connector Size	0.2 – 1.5 mm ²

Inputs	
Digital	8 (TTL, max. 0.3 A)
Analog	4 (0 - 10 V, max. 0.3 A)
Analog PT100	2

Outputs	
Digital / Digital-Valve	8 (24 V) / 4 (15 - 24 V, max. 1.1 A)
Analog	2 (0 - 10 V, max. 50 mA)