

Modular-Lab

Module Diversity

■ Valve Modules



Solenoid Valve Module (SVM; Dimensions: 130 x 130 x 78 mm)

With 4 valves (3-way or 2-way) for liquid transport. Standard UNF connectors at front. Easy to access for mounting of "finger tight" fittings. Optional one valve (barbed fitting) at back for gas transport.

Valve: Bürkert 6604, max. 3 bar, dead volume 45 µl, body: PEEK, sealing: FFKM



Valve: SMC LVM155, max. 6 bar, dead volume 10 µl, body: PEEK, sealing: FFKM (Kalrez), certified for clean room use.

Other valves upon request.



Stopcock Manifold Module (SMM; Dimensions: 130 x 130 x 78 mm)

Holder and adapter for quick mounting of stopcock manifold. Standard stopcock manifold with Luer connectors for medical application (one way, sterile) is used. Stopcocks are driven by servo motors.



Single Stopcock Module (SSM; Dimensions: 130 x 130 x 78 mm)

Holders and adapters for quick mounting of 3 single stopcocks (driven by servo motors). Stopcocks of different material and size can be used on the same module. Adapters for disposable sterile, plastic, Luer stopcocks, Teflon PTFE valves with UNF threads and metal stopcocks are available.



Pinch Valve Module (PVM; Dimensions: 130 x 130 x 78 mm)

Module with 3 servo motor driven pinch valves for high pinching pressure (70 N/cm). Excellent for isolation type applications. Only tubing has liquid contact. Tubing diameter from 0.5 to 4 mm (with adapters). Various tubing material can be used.



Vial Holder Module (VHM; Dimensions: 130 x 130 x 78 mm)

Holds up to 3 vials or cartridges. Holders for different vials and cartridges are available. The holders can easily be adjusted in their position and fit with the respective handles of all modules coming with the Modular-Lab. Can be equipped with an internal activity detector.



Vial Holder Plate (VHP)

Holds up to 3 vials or cartridges. The holders can easily be adjusted in their position and fit with the respective handles of all modules coming with the Modular-Lab.



Multi Position Valve Module (MVM; Dimensions: 130 x 130 x 78 mm)

The 7-port 6 position rotary valve is driven by a servo motor into 6 different positions and has no dead volume. From the seventh position liquids can be distributed to 6 ports or liquids from 6 different locations can be collected into one reservoir via the seventh position. Optional solenoid valve at the front to close the system when switch is rotating.



Flex Module

Module can easily be stacked underneath, between or on top of other modules to provide more space. It enables to turn other modules by 90° and it can also be used for vial storage on top of the system.



Single Syringe Module (SYM; Dimensions: 130 x 130 x 234 mm)

A single syringe with a volume of 1, 2, 5 or 10 mL can be fixed via holder and is operated by a linear transfer axis. Customer specific syringes can be adapted on request.



Peltier Reactor Module (PRM; Dimensions: 130 x 230 x 156 mm)

Heating and cooling with 8 double thermoelectric Peltier elements from -40°C to +150°C (heat exchanger, no liquid nitrogen needed for cooling). Includes activity detector, camera, stirrer, thermo sensor inside the reactor block. Additional temperature and pressure measurement inside reaction vial is possible. Can be equipped with a lift. Vials from 1 to 24 mL can be used with different adapter rings. Connection by needles via septum of vial or with standard UNF fittings via reaction vial head.



Heater Reactor Module (HRM; Dimensions: 130 x 220 x 78 mm)

Heating with heating-foil from room temperature to 180°C/220°C. Lead-shielding of activity detector and electronics is included. Additional external thermo sensor, stirrer and pressure sensor is available. Vials from 1 to 10 mL can be used with different adapter rings. Connection by needles via septum of vial or with standard UNF fittings via reaction vial head.



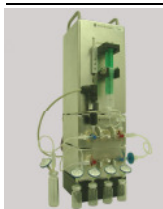
HPLC Module (HPLC; Dimensions: 130 x 130 x 314 mm)

The HPLC-module is designed to clean the reaction product of a PET-tracer synthesis by semi-preparative HPLC. Integrated parts of the module are an HPLC-column, an injection valve, a sample loop, a fluid detector and an activity detector. Additional components are HPLC-pump and the UV-detector from Knauer, which are not integrated in the module itself.



Vial Dispensing Module (VDM; 130 x 130 x 234 mm)

The Vial Dispensing Module is equipped with a lift for needles and a manually moveable vial holder. The vial holder can be made of acryl or tungsten shielding and is adjusted to customer specific vials. Two needles are placed in the automated lift – one for transporting the liquid and the other for venting. To assure that the liquid is wholly removed from the vial, the vial holder remains in a slant position during the withdrawal process.



Syringe Dispensing Module (SDM; 130 x 130 x 390 mm / 130 x 130 x 78 mm)

Combination of two Stopcock Manifold units together with a Single Syringe Module and Flex Module for precise dispensing and filling of liquids. Unit can either be combined with the Modular-Lab system or run by itself using PLC, laptop and Modular-Lab Software. A single syringe with a volume of 1, 2, 5, 10 or 20 mL can be fixed via holder to the Single Syringe Module and is operated by a linear transfer axis.



Carbon-11 Trapping Module (CTM; 130 x 130 x 234 mm)

Trapping of $^{11}\text{CO}_2$ is achieved by a molecular sieve (60-80 mesh) at room temperature. The column for heating is supplied by VICI with following attributes: 1/4"x5cm and 1/16" tube fitting. Compressed air influx through 4mm tubing and 2/2 way valve. Gas distribution is performed by a valve manifold with two types of connectors: 1/16" tube fitting to waste, reactor and column; 1/8" tube fitting for $^{11}\text{CO}_2$ and Helium gas. The gases are distributed by 3/2 way valves. The Helium flow is especially controlled by an integrated Helium flow controller ranging from 0 to 150 ml/min (max. pressure: 3 bar).

For more detailed information on each module please see individual module fact sheets.

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