



## Binary Pump Module

High pressure dual reagent delivery module

# Binary Pump Module™

High Pressure Dual Reagent Delivery Module—just add in your reactor!



- Upgrades any FlowSyn continuous flow chemistry system to four-channel operation
- Up to 200 bar maximum pressure and 0.005—50 ml/min per channel
- Comes complete with PC software for stand-alone operation
- Use as a stand-alone reagent delivery module in combination with your own flow reactors

The new Binary Pump Module (BPM™) has been designed to offer the flow chemist maximum flexibility. It may be used either as a **two-channel upgrade** in combination with any FlowSyn system (to give four identical reagent channels in total), or completely independently as a **stand-alone dual reagent delivery module**.

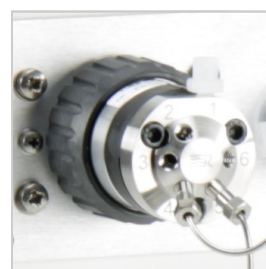
The BPM is solidly engineered using well-established components of proven reliability. Three in-built pressure transducers constantly monitor pressure and system performance so ensuring safety and peace of mind.

The standard unit (**UQ1022**) is plumbed with stainless steel tubing, delivers flow rates from 5 µL/min up to 10 mL/min and can operate at up to 100 bar (1400 psi). A 200 bar (2800 psi) version is also available (**UQ1022-200**). The **BPM Maxi (UQ1023)** delivers flow rates of up to 50 mL/min per channel and is limited to 100 bar.

Alternative configurations are available that offer either all perfluoropolymer or all Hastelloy® flow paths. On request, units can even be supplied with flow paths constructed of two different materials (for specific chemical compatibilities) in the same module.

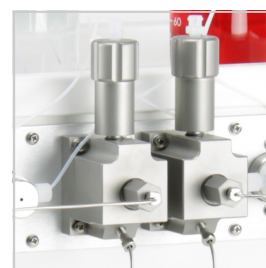
## Features:

- **Integrated in-line mixing module**
- System back pressure regulator and low pressure outlet selection valve (Collect/Waste)
- **Three separate fluidic circuits** - to facilitate pump priming 'on the fly' without the need to cool/depressurise the reactor(s)
- **Robust** - all stainless steel construction.



## Each pumping channel is identical and has:

- A low pressure inlet reagent/solvent selection valve
- A high pressure chemically resistant injection valve with 1.0 mm fluidic channels
- An in-line pressure transducer and priming port
- Automatic air bubble detection (ABD) algorithm.



## Fully Integrated Flow Mode

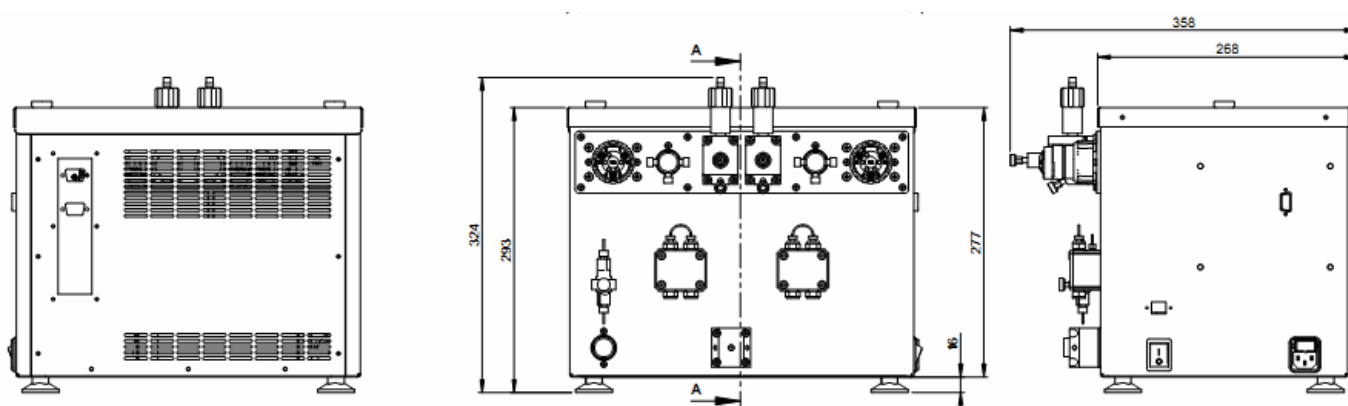
When the BPM is connected to a FlowSyn, basic control of the four identical flow channels can be achieved directly through the FlowSyn user interface.

A new PC-based control interface that allows the user to program combinatorial experiments using all four flow channels will be released shortly.

## Standalone Flow Mode

As a stand-alone reagent delivery module, system control is through dedicated software running on a PC. The BPM is able to control a fraction collector directly and can be used as a hub through which to control a customer's own flow reactor system.

For example, the Uniqsis **BPM Maxi** (2 x 50 ml/min) might be combined with a Uniqsis **Cold Coil** to constitute a flow system suitable for low temperature scale-up work in which the reactor temperature is controlled by an external mechanical heater/chiller.



### UQ1022/UQ1023 Binary Pump Module — Specification

<b>Flow rate (per channel)</b>	0.005 – 10.0 mL/min (UQ1022) 0.05 – 50.0 mL/min (Maxi: UQ1023)
<b>Maximum pressure</b>	1400 psi (100 bar) or 2800 psi (200 bar) - UQ1022 1400 psi (100 bar) - UQ1023
<b>Flow path</b>	316 Stainless steel (PTFE and Hastelloy® available to special order)
<b>Dimensions</b>	360 mm (w) x 260 mm (d) x 300 mm (h)
<b>Power supply</b>	220V 1100VA or 110V 1800VA
<b>Weight</b>	19.2 kg



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