

Multi-Channel Dispenser

Non-contact high precision dispenser for on-demand liquid addition



Multi-Channel dispenser is a universal, flexible non-contact liquid handling solution for the chemical, biotechnological, and pharmaceutical industry as well as public research facilities.

It consists of a controller and 1-10 dispenser units. Each of these units provides two independent dispenser channels.

Non-Contact Digital Liquid Handling

The core elements of each dispenser unit are two digitally controlled dispenser pumps, which on demand dispense all kinds of chemical or biological liquid as individual droplets each with a constant volume of 0.01 mL (digital liquid handling).

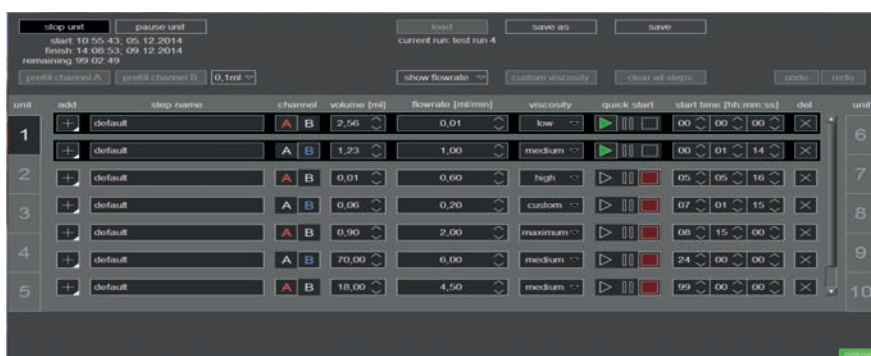
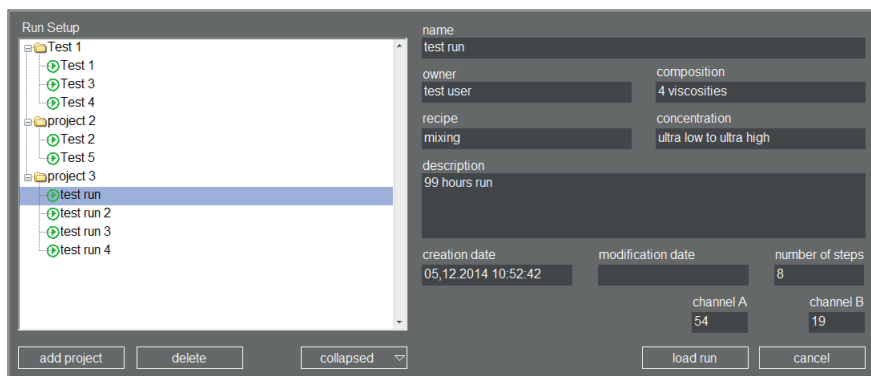
The droplets fly on a straight trajectory through the air towards the target experiment, hence the dispenser tip does not come in contact with the reaction solution (no uncontrolled leakage of liquid into the running experiment before and after the desired additions). Up to 10 droplets can be dispensed per second resulting in a maximum flow rate of 6 mL/min per dispense channel. Higher flow rates can be achieved by combining two or more dispense channels.

- Modular and extendable technology (1-10 dispensing units)
- Minimum configuration: One controller and one dispenser unit (2 dispense channels)
- Maximum configuration: One controller and 10 dispenser units (20 dispense channels)
- Up to 20 different liquids for one experiment
- Up to 10 different experiments in parallel, 10 users using the same instrument the same time
- Digital liquid handling
- Remote liquid addition (the exit tubes of each dispenser unit tube can be up to 1 m long)
- Experiments can be programmed while others are running
- Compatible with a wide range of chemical and biological liquids

Intuitive User Interface

The software employs simple dispense programs consisting of a list of dispense commands. Each dispense command contains information regarding which dispense channel shall be used, delay time after which dispensing starts, the volume to be dispensed and the flow rate or time

period over which it should be dispensed. Generating a new dispense command is simple and requires only a few mouse clicks. By combining a set of commands each liquid can be added many times with constant or different delay times and flow rates.



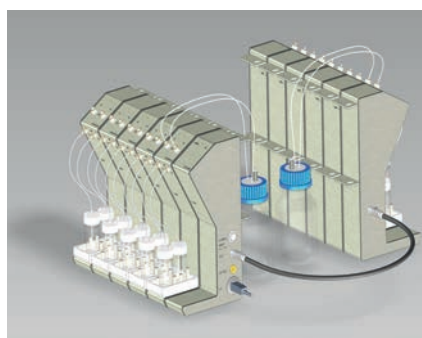
Multi-Channel Dispenser supports a broad spectrum of applications

Our instruments are designed for a broad spectrum of applications

- Initiate on demand chemical or biological reactions.
- Programmable non-contact addition of liquid reagents or solutions to running experiments.
- Programmable non-contact dilution.
- Variation of pH by addition of acidic or alkaline solutions.
- Terminate on demand chemical or biological reactions (e.g., by change of the pH, oxidative or reductive destruction of reactive components, inhibition of enzymes etc.).
- Optimization of chemical and biological reactions by systematic variation of volume, flow rate and time points at which reactive components are added.

Optimize these parameters to maximize the reaction yield and minimize the level of byproduct formations.

- Compensate for solvent evaporation (loss) by continuous solvent addition.
- Combine with an XYZ-axis robot to build an automated liquid filling station or to address many reactions (e.g. performed in MTPs) with one dispense unit.



Two dispense channels are used to transfer aliquots of liquid A and B on demand into a reaction tube.

Technical Data:

This Multi-channel dispenser consists of 1 controller and 1 dispenser unit. Maximum 4 more dispenser units can be attached in one row. A separately available extension controller can extend this capacity to 6-10 dispenser units by adding a second row consisting of the extension controller and 1-5 additional dispenser units.

Dimensions and weight

- One controller or + 1-5 dispenser units:
Width: 112, 162, 212, 262, 312 mm,
depth: 171 mm, height: 262.5 mm
- Minimum/maximum width:
112/312 mm
- Weight Controller: 0.8 kg
- Weight dispenser unit: 1.6 kg

Wetted materials:

Standard version:

- Polypropylene (PP)
- Ethylene-propylene-diene-rubber (EPDM)
- Perfluoroalkoxy polymer (PFA)
- Poly-ethylene-tetrafluoroethylene (Tefzel, Dyneon ETFE, Fluon ETFE)
- Polytetrafluoroethylene (PTFE)

- Borosilicate glass
The provided source vials are made of borosilicate glass. These can be replaced by other vials or bottles (e.g. made of PTFE)

Optional version

(only available upon request):

- Poly-vinyl-difluoride (PVDF) instead of PP
- Perfluorinated natural rubber (FFPM, FFKM) instead of EPDM
- PTFE instead of PFA
- PTFE instead of Tefzel

Electrical supply, connections and PC system requirements

- 24V DC, 1.5 A
- Communication with the PC is realized by USB (1.3-2.0) and a virtual USB to RS232 converter inside the controller
- Minimal requirements: WIN XP, WIN 7, WIN8, 1GHz, 1GB RAM

Contact:

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