

Multi Pump Modules

4-fold and 8-fold Parallel Fluid Transfer

Technology

The multi pump modules MP4 and MP8 provide controlled high-precision pumps for multiple fluid transfer while occupying little lab space.

■ Parallel and Highly Precise

Each of the peristaltic pumps can be operated independently. Pump head speed and therefore media flow rates can be controlled digitally for highest precision.

■ Wide Range of Continuous Flow Rates

The pump heads take various tubing sizes. Combined with continuously variable speed drives, flow rates between 0.01 and 5 L/h can be achieved with the MP4 and between 0.3 and 420 mL/h with the MP8. The pump heads can be operated via continuous mode or via selectable flow rates within the dispense mode.

■ Integrated Design for Powerful Control

Multi pump modules are tried and tested components of the DASGIP Parallel Bioreactor Systems for cell culture and microbial fermentation. Up to 16 vessels can be operated in parallel with the DASGIP Control software.

One or more modules can be operated as stand-alone systems, using the DASGIP EasyAccess Software, delivered with every module.

Digital and analog* interfaces allow perfect integration of 3rd party systems.

Applications

The multi pump modules have been developed for applications in research and development focusing on lab and pilot scales.



DASGIP's MP8

Various flow rates and pump sizes cover working volumes from 35 mL to 50 L and more.

■ Microbiology and Cell Culture

The parallel design makes the multi pump modules perfect for all applications where several liquid media have to be dispensed with high precision at a multitude of flow rates. DASGIP's multi pumps always guarantee adequate substrate feed. The modules not only satisfy the nutrient addition to – even fast – growing cells, but also perfusion rates and pH control can be optimized.

■ Laboratory, Production, Quality Assurance

Whether used in laboratories, production or as part of quality assurance - the multi pump modules easily exceed highest demands. DASGIP products address industry programs such as the FDA's "Quality by Design" approach.

Benefits

"By providing customers with reproducible results in lab and pilot scale our multi pump modules help to economize up-scaling processes", says Dr. Matthias Arnold, CSO DASGIP. The following features contribute:

Modules MP4 - MP8

Quality System certified by DQS ■ DIN EN ISO 9001 ■ Reg.-No. 63431

Multi Pump Modules

4-fold and 8-fold Parallel Fluid Transfer

■ Highest Precision on Minimal Lab Space

Highest precision on 4 channels for each of 4 or 8 outlets leads to excellent scalability and reproducible results. The parallel, modular design requires only a minimum of lab space.

■ Easy System Integration and Automation

Easy integration into all DASGIP bioreactor systems is guaranteed.

The DASGIP Control software provides a concise depiction of all or single reactors, intuitive handling and added automation features.

All data can be continually logged on the PC* and thus are available for quality assurance and comprehensive documentation. The included programming libraries

support established programming languages. Labview®, the leading product of the lab automation, is supported. The saved data is immediately accessible for evaluation using e.g. Microsoft Excel®.



DASGIP's MP4

Modules MP4 - MP8

Technical Data

	Common Features	MP8	MP4
MODULE			
Dimensions (WxDxH)	300 x 320 x 190 mm		
Ambient Conditions	5°C to 40°C; max. 80% rH; no outdoor		
Power Supply	110 to 240 V _{AC} , 50/ 60 Hz, 20 V _{AC}		
Weight	Approx. 8 - 10 kg		
Interface	RS232/RS485; anal. Interface: 0-10 V _{DC}		
PUMPS			
Count		8	4
Type	Spring loaded tube bed	Pump with 4 rollers	Pump with 2 rollers
Drive	Speed controlled with planetary gear		
Operating Modes	Continuous and Dispense		
TUBES			
Material	Bioprene, Pharmed, Marprene, Silicone		
Wall Thickness		0.8 – 1.05 mm	1.6 mm
Inner Diameter in mm,		0.25 (0.3 - 9.5) mL/h	0.5 (0.01 - 0.07) L/h
(Flow rates)		0.5 (1.3 - 42) mL/h	0.8 (0.02 - 0.22) L/h
		1.0 (4.0 – 122) mL/h	1.6 (0.06 - 0.74) L/h
		2 (13 – 420) mL/h	2.4 (0.13 - 1.57) L/h
			3.2 (0.23 - 2.72) L/h
			4.8 (0.43 - 5.04) L/h
*The PC and the analog interface are optional.			