

Massflow

Precise gas flow measurement and control



The gas flow controller LAMBDA MASSFLOW allows a precise and automatic control of the pH in cell cultures without the need of any other gas station:

- Allows the **control of pH of cell cultures** by controlled addition of gaseous CO₂, N₂ or any other gas with a suitable controller
- **High-quality laminar mass flow sensor** with minimal pressure drop
- **Can be used independently** - all functions accessible from the front panel
- **Flow rate regulation by a proprietary proportional needle valve** controlled by a microprocessor
- **Programmable flow rates** from 0 – 500 ml/min or 0 – 5 l/min
- **RS-485 interface and control software** (optional)

LAMBDA MASSFLOW – PRECISE GAS FLOW MEASUREMENT AND CONTROL

The LAMBDA MASSFLOW is a new mass flow controller system especially designed for use with LAMBDA laboratory bioreactors and fermentors. For example, it allows control of the pH of a cell culture by the controlled addition of gaseous CO₂, the control of dissolved oxygen by regulation of the airflow or any other gas with a suitable controller. However, it can also be used independently, since all its functions can be controlled from the front panel of the MASSFLOW.

The flow rate is measured by high quality laminar mass flow sensor tubes and is displayed on a digital display. The mass flow cell has a very low-pressure drop (less than 1 cm of H₂O) and a linearity error of less than ±3% reading (which is much better than the precision expressed as a percentage of full scale used by some manufacturers). The repeatability is better than ±0.5% reading. The flow rate is regulated by a specially developed proportional needle valve controlled by a microprocessor.

MASSFLOW can be operated manually with the buttons on the front panel or using the remote control. The analogical remote control includes ON/OFF and 0 to 10 V full-scale control of the flow rate. Digital control can be achieved by the optional RS-485 interface.

Programming:

Up to 50 pairs of flow rates and times can be programmed. This allows the flow to be switched on and off or the setting of any flow rate for a desired time interval.

Gas volume totalizer:

MASSFLOW generates impulsions after every 5 ml of gas flow. These impulsions can be totalled by the LAMBDA INTEGRATOR (art. no: 4803), measured as a voltage, recorded on a recorder or on a PC (e.g. fermentation program FNet or SIAM). In this way exact volume information can be obtained.

Zero setting:

MASSFLOW is equipped with an automatic zero setting which further improves the precision of the flow rate reading. This function allows precise calibration when other gases are used.

Technical specifications:

Flow rates:	MASSFLOW 5000: 0 – 5.0 l/min in 100 ml steps MASSFLOW 500: 0 – 500 ml/min in 1 ml steps
Calibration:	nitrogen/air
Accuracy:	±3% reading or one digit
Repeatability:	±0.5% reading or one digit
Operating temperature:	0 to 50°C
Maximum system pressure:	0.2 MPa
Dimensions (not including fitting):	105x80x170 mm (WxHxD)
Weight:	800 g
Connections:	8 pole cable with two DIN connectors
Power supply:	90-240 V / 50-60Hz, output 12 V DC, CE conform
Remote control:	0-10 VDC (full scale); ON/OFF; RS-485 or RS-232 (option)
Warranty:	2 years

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