

# Massflow

Precise gas flow measurement  
and control

LAMBDA 



## MASSFLOW – PRECISE GAS FLOW MEASUREMENT AND CONTROL

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 CO<sub>2</sub>, 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 H<sub>2</sub>O) 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% per 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. A fully digital control uses RS485 connection.

### 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 totaliser:

MASSFLOW generates impulsions after every 5 ml of gas flow. These impulsions can be totaled by an INTEGRATOR (cat.no: 4803), measured as a voltage, recorded on a recorder or on a PC (fermentation program FNet). 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.

## SPECIFICATIONS

Flow rates:	0–5.0 l/min
Calibration:	nitrogen/air
Accuracy:	±3 % reading or one digit
Repeatability:	±0.5 % reading or one digit
Operating ambience:	0 to 50°C
Maximum system pressure:	0.2 MPa
Dimensions (not including fitting):	105 × 80 × 170 mm
Weight:	800 g
Connections:	8 pole cable with two DIN connectors
Power supply:	primary 100–240 V / 50–60Hz secondary +12 V / 6 W

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