

The FerMac 368 for measurement of microbial activity



Measurement of microbial activity - that most important of high value parameters

The Electrolab FerMac 368 Gas Analyser has been specifically designed for fermentation use to provide a cost effective method of measuring gaseous oxygen and carbon dioxide. At Electrolab, we realise that the best method of determining metabolic rate is by analysis of off-gas O₂ and CO₂.

When a fermentation is carried out, the proportions of off-gas oxygen and carbon dioxide are good indicators as to the efficiency of the reactor process and the current status within the fermenter.

Whilst existing bioreactor instrumentation maintains stability of the process parameters, it is not ideally suited to the determination of metabolic rate within the vessel. The mass spectrometer has been used for the analysis of bioreactor exhaust gases but this is an expensive option and it is often multiplexed which can result in missed results as each individual bioreactor is cycled.



Just as with a dissolved oxygen probe, the dedicated FerMac 368 Gas Analyser is the best solution.



With its own LED displays and calibration controls, the FerMac 368 can be used with any size or make of bioreactor. It does not require complex installation and can be used either as an independent instrument or through existing fermentation software.



The FerMac 368 incorporates a flow meter and pump which ensures a constant flow of gas through the analyser, independent of varying air sparge rates through the fermentation vessel.



Measurement Systems

The high stability CO₂ measurement system utilises infrared absorption technology. By using a physical measurement technique, the sensor offers high selectivity, fast response and is virtually immune to poisoning. Careful design of the electronics and optics provides a stable sensor capable of accurate and reliable measurement, giving long periods between recalibration.

The O₂ measurement system utilises an electrochemical sensor which has been specifically designed for this application. Featuring long life operation with easy, economical replacement, the cell is inherently stable and unaffected by CO₂ or other gases and can be calibrated using ambient air.



- Low cost gas analysis which was formerly the preserve of more expensive equipment.
- Independent on-line measurement designed specifically for fermentation use.
- Easy to install and transfer between bioreactors.
- Low maintenance costs with easy replacement of the oxygen cell which can be calibrated using air.
- Space saving designed stainless steel case which will fit neatly into the laboratory environment.
- Analogue outputs can be connected to existing fermentation software.
- Internal pump keeps the flow rate through the analyser constant and independent of the fermentation sparger rate.
- Connected outside the sterile environment eliminating contamination and making it easier to incorporate in your GMP procedure.

SPECIFICATION

	<i>O₂</i>	<i>CO₂</i>
Range <i>(Other ranges available)</i>	<i>0-50%</i>	<i>0-10%</i>
Resolution	<i>0.1%</i>	<i>0.01%</i>
Calibration	<i>Calibration Gases or Air</i>	<i>Calibration Gases</i>
Sensor Type	<i>Electrochemical Cell with temperature compensation</i>	<i>Near Infrared Absorption</i>
Internal Sampling Pump	<i>40-240 ml/minute</i>	
Dual Analogue Outputs <i>(4-20 milliamps available as an option)</i>	<i>0-5 or 0-10 volt outputs for recorder, fermenter controller, computer etc</i>	
Power	<i>115/230 VAC 50/60 Hz 50 Watt</i>	
Dimensions	<i>190mm wide x 190mm high x 330mm deep</i>	
Weight	<i>6 kgs</i>	

Low cost data logging software is available as an option.

To discuss your specific requirements, arrange a demonstration or obtain further information and pricing, contact us:

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