



BioPAT® Trace

Online Measurement of Glucose | Lactate



- Optimal monitoring and control of bioprocesses via real online measurement of glucose and lactate
- Single-use sensor and fluidic elements
- Compact with full system integration
- Combinable with any bio-fermenter
- Stable bio-sensors
- Linear Measuring range
0.01 to 40 g/l glucose
0.05 to 5 g/l lactate
- No wet chemistry required
- Reliability due to reliable sampling

Description

The BioPAT® Trace analysis system is used for simultaneous online monitoring of the two analytes, glucose and lactate in laboratory or industrial cultivations of microorganisms and cell lines.

Continual analysis

The BioPAT® Trace provides continual analysis independent of the type of cultivation (batch, fed-batch, continual cultivation). Along with the online analysis function, offline analysis of individual samples is also possible.

High process reliability

The BioPAT® Trace ensures a high degree of measurement and process reliability due to its utilization of single-use sensors and fluidic elements.

Reliable sampling

When analyzing substrates in cultivation media, it is necessary for the sample to be removed from the bioreactor (fermenter) under sterile conditions. The reproducibility and relevance of the sample taken must remain intact in this regard. The BioPAT® Trace has three sampling options available: filtration probe, dialysis probe and bypass block. All systems enable sterile removal from the bioreactor.

Easy to use

Due to its structured design and simple operating concept, routine analysis functions can be performed with only a brief introduction.

Innovative measurement system

Analysis functions in the BioPAT® Trace take place in combination with enzymatic reaction and amperometric detection. A 2-channel enzyme electrode coated with oxidase is used as a biosensor.

Wide measuring range

The linear measuring range of the BioPAT® Trace extends from 0.01 to 40 g/l glucose and from 0.05 to 5 g/l lactate. The deviation from the average measurement value is less than 3% for a measurement of 5 g/l glucose and 2.5 g/l lactate.

Fast measurement frequency

The measurement frequency is up to 60 analyses per hour depending on the conditions. The service life of the sensor system ensures 14 days or 5000 analyses depending on the application. The ambient temperature of the BioPAT® Trace can lie between 5 and 35°C due to internal temperature correction. The ambient humidity should not exceed 90%.

Flexible system integration

The BioPAT® Trace has a number of outputs making integration into data recording systems very flexible. Along with a standard analog output for signal ranges from 0 to 20mA, 0 to 10 V or 4 to 20mA, the BioPAT® Trace also has a USB interface, an Ethernet connection as well as a serial output for data recording.

Specifications

Measuring Principle	Enzymatic amperometric
Linear Measuring range (glucose lactate)	0.01 to 40 g/l 0.05 to 5 g/l
Measurement frequency	Up to 60 measurement values/h
Measurement deviation (glucose lactate)	≤ 3% for 5 g/l ≤ 3% for 2.5 g/l
Service life of the enzyme electrode	30 days or 5000 analyses
Ambient temperature	15 to 35 °C
Ambient humidity	10 to 90 %
Interfaces	RS232, Ethernet
Oxidation potential	350 mV
Analog output	0 to 10 V 0 to 20 mA 4 to 20 mA
Input voltage	100 to 120 220 to 240 V ~; 50 60 Hz
Dimensions in mm (W × H × D)	120 × 170 × 200
Weight	1.8 kg

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