

ML206 Gas Analyzer

Instruments

Description

The ML206 Gas Analyzer is an easy-to-use, stand-alone CO₂/O₂ analyzer that is suitable for use in respiratory or chemical gas analysis. It can be used in conjunction with a PowerLab data acquisition system or any meter or analog data recorder.



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There are no complex controls, with a pump on/off switch, a gas sampling port and a turn dial for variable pump sampling rates (approx. 35 to 200 mL/min). Two analog signal outputs (BNC connections) are located at the rear of the unit to provide the corresponding voltage outputs from the O₂ and CO₂ analyzers.

Operation

The ML206 Gas Analyzer includes a mains power supply to operate the sampling pump and communicates with the PowerLab data acquisition system via an I²C connection. ADInstruments recommend the use of MLA0343 Drying Tube (Nafion) in conjunction with an In-line Filter (0.45 micron hydrophobic membrane: MLA0110) for connection of the sampling line to the sampling port of the Gas Analyzer. This nafion tubing and filter are necessary to prevent moisture damage to the analyzers as well as removing damaging particulates. The filters are not viral/bacterial filters.

The ML206 Gas Analyzer comprises an infra-red CO₂ and an visible spectrum O₂ (760 nm) transducer with 10 - 90% response times of 440 ms and 430 ms at the 200 mL/min gas sampling rate, respectively (measured with MLA0343 Drying Tube and MLA0110 In-line Filter attached). The Gas Analyzer does not incorporate a desiccant tube and should be used in conjunction with a MLA6024 Desiccant Cartridge when performing heavy exercise studies or in very humid environments.

A single exhaust port is provided on the rear panel of the ML206 Gas Analyzer to expel sampled air. The sampling port, exhaust port and cooling fan outlet (rear of the Gas Analyzer) should not be obstructed under any circumstances. **The Gas Analyzer is designed for passive sampling only. It should NOT be directly connected to a high pressure source such as a gas cylinder.**

Applications

The ML206 Gas Analyzer is suitable for a range of applications including metabolic studies, whole body plethysmography, pulmonary function testing and more. It may be used to indicate CO₂ and O₂ trends in exercising humans and small animals. It is only suitable for measuring gas concentrations in air and is NOT suitable for liquids.

LabChart software is used to record, display and analyze O₂ and CO₂ concentrations on separate channels with a variety of analysis functions allowing for the determination of inspired/expired levels, respiratory rate and more. LabChart automatically recognizes and calibrates the O₂ and CO₂ transducers of the Gas Analyzer, however the user may choose to conduct a manual calibration of the transducers using a concentration of CO₂ and O₂.

Specifications

Sampling System:	One CO ₂ (Servomex Model 15050) and one O ₂ (Oxigraf X2004) transducer fed from a damped, micro-vacuum pump.
Gases:	Must be non-corrosive and non-flammable. A moisture removal scheme must be employed before the sampling inlet.
Sampling Flow Rates:	Approx. 35 to 200 mL/min (user variable)
Internal Damping Volume:	75 mL
Gas Connector:	Plastic Luer
In-line Filter:	Ten In-line 0.45 micron (µm) hydrophobic filters (MLA0110) are included to protect against moisture and particulate damage.
Materials in contact with gas:	316 stainless steel, Sapphire, Nylon 66, Silicon Rubber, epoxy varnish
Operating Temperature Range:	+5 to 40°C
Humidity:	0 to 90% non-condensing
Warm-up time:	10 mins @ 20°C

CO₂ System

Type:	Infrared, optical
Range:	0-10% CO ₂
Linear Output:	0-1V (0-10% CO ₂)
Resolution:	0.1% CO ₂
Linearity:	± 0.1% CO ₂
Drift:	0.1% CO ₂ over 8 hours
10-90% Response Time:	440 ms (200 mL/min)
Temp Coeff:	Zero: <0.01% CO ₂ /°C Span: <0.02% CO ₂ /°C

O₂ System

Type:	Visible spectrum (760 nm) absorption
Range:	0-100% O ₂
Linear Output:	0-1V (0-100% O ₂)
Resolution:	0.01% O ₂
Linearity:	± 0.2% O ₂
10-90% Response Time:	430 ms (200 mL/min)
Cross-Sensitivity:	± 0.2%

Operating Requirements

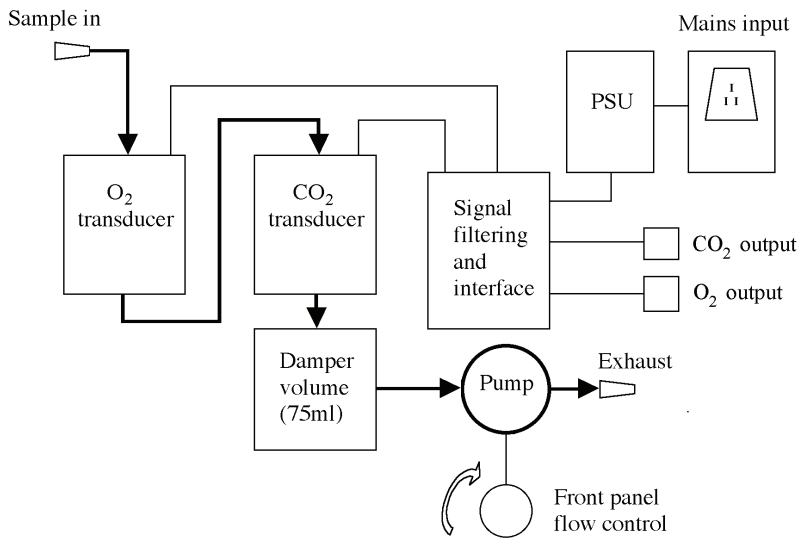
Power Supply:	85-250 VAC 50/60 Hz
Peak Power Requirements:	60 VA
Temperature Range:	5-40°C
Humidity:	0-90% (non-condensing)

Signal Outputs

Analog Output:	BNC connectors
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Physical Configuration

Dimensions:	300 x 60 x 300 mm
Weight:	5 kg

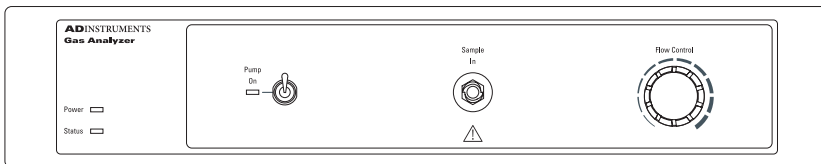


Schematic representation of analyzer connections

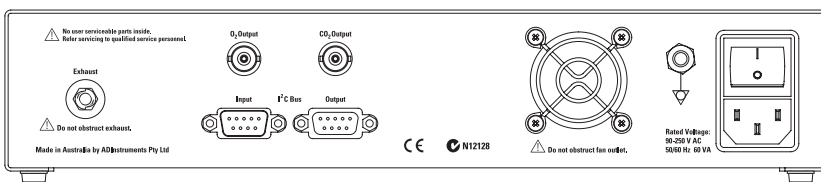
Caution

Read “Statement of Intended Use” on our website or in “Getting Started with PowerLab” before use.

Front and Back Panels



Front panel



Rear panel

Ordering Information

ML206 Gas Analyzer

Includes:
Power Cord
Gas Analyzer Owner's Guide
I°C Cable
2 x BNC-BNC Cables
MLA0343 Drying Tube
MLA0110 In-Line Filters (10/pk)

For use with
MLA246 Gas Mixing Chamber
MLA6024 Desiccant Cartridge



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ISO 9001:2008 Certified Quality Management System

WARRANTY: ADInstruments PowerLab data acquisition units (Product Number Prefix: PL), Front-end Signal Conditioners (Product Number Prefix: FE) are warranted against defects in materials and workmanship for a period of 5 years from the date of purchase. Other PowerLab data acquisition units and ADInstruments manufactured Front-end and Pod Signal Conditioners, and Instruments are warranted of a period of 3 years from the date of purchase. Third party products are covered by the manufacturer's warranty. Warranties are void if the product has been damaged due to negligence. Consumables and electrodes are not covered by a warranty. All questions regarding service and warranty should be directed to your nearest ADInstruments representative.