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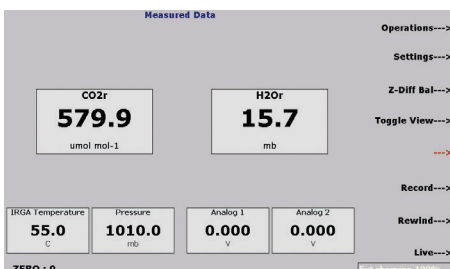
CIRAS-3 SC
CO_2/H_2O Gas Analyzer
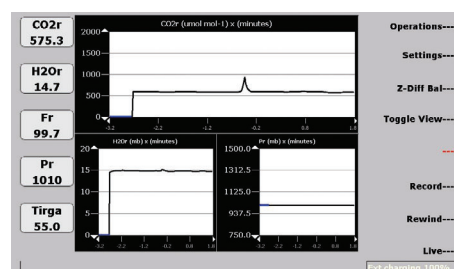
Product Features

- High precision instrument featuring 2 independent, non-dispersive infrared gas analyzer for both CO_2 and H_2O (Absolute Analyzer)

- CO_2 measurement range: Up to 10000 umol mol^{-1}

- H_2O measurement range: 0-75 mb

- Fast response and long term stability with built-in Auto Zero

- Fully compensated for changes in temperature, pressure and foreign gas broadening

- Large, full color 7" transflective LCD with optimized viewing angle (30°)

- Large numeric and graphical presentation of data

- Unlimited data storage (internal memory and USB flash drive)

- Analog and digital (USB) output

- Built-in sampling pump with mass flow controller

- Powerful, intuitive user interface and software

- On-line Help

- Remote display capability

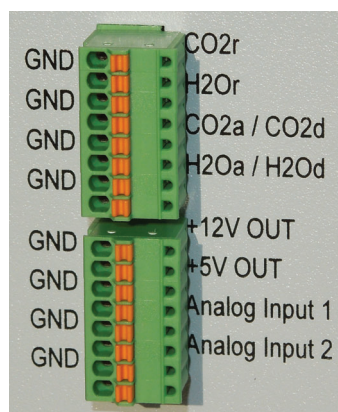- Internal 7.2V Li-Ion rechargeable battery (optional) for portability

Applications

- Plant physiology

- Soil CO_2 efflux

- Whole canopy assimilation

- Growth cabinets and environmental control rooms

- Global change studies

- CO_2 sequestration

- Forest & agricultural meteorology

- Air-sea surface exchange (pCO_2)

- Animal/insect respiration

- Environmental toxicology

- Volcanology

- Bioremediation

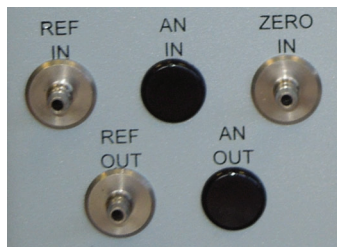## Numeric Display

Graphical Display

Powerful Software

Simple, intuitive and menu-driven software is designed into the system for system setup, operation, recording and data management. On-line help is available throughout the software to guide you every step of the way.

Convenient, pluggable terminal block for analog signals.

GND — CO2r
GND — H2Or
GND — CO2a / CO2d
GND — H2Oa / H2Od
GND — +12V OUT
GND — +5V OUT
GND — Analog Input 1
GND — Analog Input 2

Gas connections for direct connection to gas analyzers

REF IN AN IN ZERO IN
REF OUT AN OUT

For further information, please contact us at:

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Technical Specifications

Analysis Method	Non-dispersive infrared, configured as an absolute absorptiometer with micro-processor control of linearization. Two independent gas analyzers simultaneously measure absolute CO_2 and H_2O from a single gas stream. All measurements corrected for temperature and pressure.
CO_2 Measurement Range	0-10000 µmol mol^{-1}
CO_2 Precision	• 0.2 µmol mol-1 at 300 µmol mol^{-1} • 0.5 µmol mol-1 at 1750 µmol mol^{-1} • 3.0 µmol mol-1 at 10000 µmol mol^{-1}
H_2O Measurement Range	0-75 mb
H_2O Precision	• 0.015 mb at 0 mb • 0.020 mb at 10 mb • 0.030 mb at 50 mb
Bandwidth (CO_2 and H_2O)	10 Hz (sampling rate). Sample data is averaged and output every 1.6 seconds.
Pressure Range	65-115 kPa
Air Sampling	User adjustable from 50-100 cc min^{-1} using integral DC pump with mass flow controller.
Auxiliary Port	For connection to external sensors.
Terminal Block	Two 8 pin terminal blocks for simple connection to external devices.
Digital Output	• USB-Mini b (Host) • 2 Ea. USB for use with external devices (Memory stick, USB Mouse, etc.).
Analog Output Channels	4 Analog output channels available. Users can configure system to output CO_2 reference, CO_2 analysis, CO_2 differential, H_2O reference, H_2O analysis and H_2O differential.
Analog Output Range	0-2.5V or 0-5V
Analog Input Channels	2 Analog input channels available for use with external sensors
Analog Input Ranges	0-1V or 0-5V
Data Storage	512 MB flash memory for programming and data storage. Unlimited data storage using USB thumb drives (memory sticks).
Microprocessor Speed	800 MHz
Display	7.0" WSVGA transflective, color LCD
User Input	27 key tactile keypad
Power Supply (Optional)	Internal, rechargeable 7.2V Li-ion battery providing up to 10 hours continuous use. Power supply/charger included.
Operating Temperature Range	0-50 °C, non-condensing. In dirty environments, external air filtration may be required.
Enclosure	Rugged, ergonomic, lightweight aluminum with polyurethane base.
Dimensions	28 cm (W) x 14.5 cm (D) x 24 cm (H)
Weight	3.8 kg (without battery). 4.3 kg (with optional battery).

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