CO2Meter.com

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CO2 Sample Draw Device Manual

Available in 1%, 30%, and 100% CO2 concentration ranges with optional data logging

Introduction

Thank you for your purchase of the AQ500 CO2 Sampler. Please read this manual carefully before using your new sampler to ensure correct operating procedures are followed. The procedures outlined in this manual are vital to the accuracy, longevity, and correct usage of this product.

Warnings

PAY SPECIAL ATTENTION TO BATTERY POLARITY WHEN INSERTING INTO UNIT. INSERTING THE BATTERIES BACKWARDS MAY CAUSE PERMANENT DAMAGE TO THE UNIT. ONLY USE THE PROVIDED POWER SUPPLY WITH THE UNIT.

IF POWERED BY BATTERIES IT IS RECOMMENDED THAT ONLY STANDARD ALKILINE BATTERIES ARE USED. "SUPER HEAVY DUTY" BATTERIES NOT UTILIZAING ALKILINE CHEMISTRY CANNOT PROVIDE PERFORMANCE NECCESARY FOR READINGS AND SENSOR ACCURACY MAY BE DEMINISHED AS A RESULT.

Package Contents

Please verify the contents of your package before using the product.

- 1- Sampler with Boot
- 1- 6' USB Cable
- 1- Power supply
- 1- 10' length 1/8 tubing
- 2- 1/8" Barb tubing bulkhead fitting
- 2- 1/8" Barb-10-32 fittings
- 2- Inline filters for input side of unit, 1 is spare

Sampler Components

Your device's appearance may vary slightly from the pictured device.

LCD Display
Displays the current CO2 concentration

Removeable Protective Boot
Gently peel boot from top of unit to access batteries and USB connector for software

Power Switch
Turns the unit and the sampling pump ON and OFF

Barb Connections
Connect provided tubing to these connections for closed loop sampling.

Minimum System Requirements

To utilize our software your Windows-PC must meet the following requirements:
- Windows XP SP3 or higher
- Microsoft .Net Framework 3.5 SP1
- Pentium 4 2.4Ghz or higher processor
- 1GB of RAM
- Sufficient disk space for logs and application files (20MB minimum, 200MB+ recommended)

Software is compatible with 64-bit operating systems and is fully tested under Windows 7.

Specifications

- Sensor type: non-dispersive infrared (NDIR)
- Measurement Range:
  - K33 ELG: 0-10,000 ppm (1%)
  - K33 BLG: 0-300,000ppm (30%)
  - C20 0-1,000,000ppm (100%)
- Sampling Method: Tube sampling
- Sensor Life Expectancy: > 15 years
- Maintenance Interval: No maintenance required
- Size: 5.75×5.6×1.3in (146×91×33mm)
- Tubing sizes: 3/32" or 1/8"

Initial Setup

To initially setup your unit please follow the procedure below. Depending on your specific configuration the procedure will very slightly.

1. Install the Software FIRST.

Visit CO2Meter.com and go the downloads page (http://www.co2meter.com/pages/downloads). Download and install the DAS - Data Acquisition Software package. By installing this package first you will ensure the drivers and software to use your unit is properly installed on your computer before connecting it.

2. Configure your Device

Sampling-Only Model

For sampling of closed-loop CO2 systems and collection of real-time data.

0-1%, 0-30%, 0-100% Sampling-Only

There is no initialization required for these models. Units may be powered by the AC Adapter or batteries.

Data Logger Model

These products feature internal memory capable of reading and storing data when not attached to a personal computer.

0-1%, 0-30% Data Logger

Insert 4 AA batteries into this unit. **In order to data log the unit MUST be connected to the computer with data logging off, and DAS software started.** Once the unit has been connected click on the "Configure Sensor" button in DAS, set the data logging period and desired pump interval. We recommend leaving the pump interval to the default 10 second period.

The unit's real-time clock (RTC) is powered by the 4-AA batteries. Every time the device's batteries are changed it must be attached to the computer with DAS running and data logging disabled to sync the real-time clock. Failure to do so will result in logs with erroneous date stamps.

0-100% Data Logger

Insert 4 AA batteries into this unit. **In order to data log the unit MUST be connected to the computer with data logging off, and DAS software started.** Once the unit has been connected click on the "Configure Sensor" button in DAS, set the data logging period and desired pump interval. We recommend leaving the pump interval to the default 10 second period.

The 0-100% model has an internal coin cell CR-2032 3V battery backup for the real-time clock. This battery is inserted in the factory for your convenience and should last the lifetime of the product.

3. Connect Sampling Hoses

Connect the sampling hoses to the front of the device. Attach the inline filter on the input side to filter any particles out of the air stream. For proper operation ensure that the pressure coming into the system is approximately at atmospheric pressure. Differentials between the sampling pressure and atmospheric pressure will result in pressure-dependent measuring errors and leakage of sample within the device which may be undesirable for closed systems.

Powering the Unit

The unit can be powered with 4 AA batteries or via the USB cable and wall power supply including in the package.

Battery Power

Batteries can solely power the device and are needed for portable measurement. The battery compartment is located on the rear of the unit and it slides to open. Install 4 good quality AA alkaline batteries.

Wall Power

The unit can be operated from the provided wall power supply as well. Batteries are *required* at all times in 0-1% and 0-30% data logging products for the device to maintain its internal clock operation. The USB plug is located on the top of the unit.

When using the wall power supply, the life of the batteries are extended, as the USB wall power functions as the main power source.

Note: The yellow boot must be removed to access the battery compartment and the USB plug.
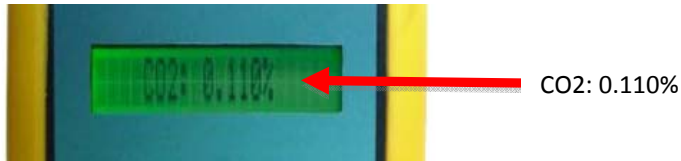
Using Sampling Units

Depending on your unit the exact display configuration may vary. Usage is straight-forward, the unit is calibrated at the factory for your convenience and should be ready to take data out of the box.

1 Move the red switch to the ON position

2 The unit will power up and momentarily display the serial number on the LCD

3 The internal sample draw pump begins to run

4 CO2 concentration of the sample is displayed on the LCD as a percentage

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CO2: 0.110%

Data Logging Units

For data logging units, the red switch on the front panel starts the logging mode. The display will alternate between current CO2 levels and the current logging settings to provide visual indication of the status of the unit. The unit will always be on, as long as power is supplied to the unit.

To collect data with the desktop application, connect the unit via the USB cable and click the "Collect Realtime" button from the DAS software.

To collect logs, connect the unit to a personal computer and launch DAS. Click on the "Manage Logs" button to download and save data from the unit.

Care, Maintenance, and Calibration

Our units typically do not require calibration during standard use. Calibration for units can be performed through our desktop software, but generally will not be required.

As long as the correct operating procedure is followed, the unit will continue to operate maintenance free. Ensure that the unit does not become wet, is not exposed to harsh conditions including extreme heat or extreme cold, and is not exposed to liquids like solvents. Failure to follow these instructions can result in reduced accuracy and even damage the unit. Ensure that at all times only air is drawn through the sample inlet. Drawing water into the sensor chamber can cause permanent damage.

Warranty

This unit comes with a 90 day warranty.

CO2Meter.com warrants our products to be free from defects in materials and workmanship when used for their intended purpose, and agrees to fix or replace (at our option) any part or product that fails under normal use. To take advantage of this warranty, the product must be returned to CO2Meter.com at your expense. If, after examination, we determine the product is defective, we will repair or replace it at no additional cost to you.

This warranty does not cover any products that have been subjected to misuse, neglect, accident, modifications or repairs by you or by a third party. No employee or reseller of CO2Meter.com's products may alter this warranty verbally or in writing.

Support

The quickest way to obtain technical support is via email. Please send all support enquires to support@co2meter.com. In your email please include a clear, concise definition of the problem and any relevant troubleshooting information / steps for so we can duplicate the problem and quickly answer any questions.

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