GasLab Pro Multi Gas Sampling Data Logger

Operating Instructions
CM-1000

Product Overview

Thank you for selecting the CM-1000 multi gas sampling data logger. The CM-1000 is designed to simultaneously measure multiple gas concentrations through sampling methods. With long-term data storage, the user can assess the previous records. When the CM-1000 measures the gas concentration reaching the alarm setting or higher, the data display and alarm functions are activated. The CM-1000 is equipped with an RS485 interface for connecting to a computer for remote monitoring. The Multi Gas Sampling Data Logger can be used in a wide range of industries and applications.

Features:
- Options for CO2 measurement range: 1%, 5%, 10%, 20%, 30%, and 100%
- Measure CO, CO2, CH4, RH, AMB, DP, ALT1
- Large LCD for easy reading of gas concentration and temperature and humidity.
- Audible alarm
- Data logging with SD card
- Through the RS485 interface connection, multiple CM-1000 units can be connected to the back-end computer system as a security monitoring application.
- Built-in LCD backlight for easy reading in the dark.
- This device is supplied with Li-ion 18650 3.7V rechargeable batteries, can be used for a long time.

![Diagram of CM-1000 device](image)

**Operation Instructions**

1. **Power on:**
   - Switch the Power Key (D) on.

2. **Measurement:**
   - After power on, the device starts to measure and update the data every second.
   - Press Enter key (I) to select zone. The selection order is: Zone 1 > Zone 2 > Zone 3. The selected zone will display a red frame. Press Left (J) / Right (K) key to select the parameter or sensor to be adjusted.
   - The selected parameter or sensor displays the red background color, press Right (K) to proceed the setting and then press Up (I) / Down (J) key to edit the parameter value.
   - Zone 1 sensor display: CO2, CO, CH4, RH, AMB, ALT1
   - Zone 2 sensor display: CO2, CO, CH4, RH, AMB, ALT1
   - Zone 3 sensor display: CO, CH4, AMB, DP, ALT1

3. **Display all sensor readings:**
   - Press and hold Enter key (I) to display all sensor readings. Press Mode key (I) to return to the main screen.

4. **Press and hold Mode key (I) to enter the setup menu, then press Mode key (I) to continue to the next page. Press Up (I) / Down (J) key to select options or change parameter values. And then press Enter key (I) to confirm it. Press and hold Mode key (I) to return to the main screen.**

5. **Power off:**
   - Switch the Power Key (D) off.
   - Note: When the device is charged with USB, it cannot be turned off.

6. **Calibration:**
   - (1) Single-point calibration:
     - After entering the setup menu, then press Mode key (I) to continue to the next page.
     - Press Down (J) to select “Sensor calibration [ ▲ ] ▼” and press Enter key (I) to confirm it. Press Up (I) and Down (J) keys at the same time to proceed the calibration. Then, press Enter key (I) to enter the sensor settings.

   - (2) Two-point calibration (calibrate by professional):
     - After entering the setup menu, then press Mode key (I) to continue to the next page. Firstly, press and hold Up (I) key. Then press Down (J) key. “I” will appear next to “Sensor calibration [ ▲ ] ▼”. Press Down (J) key to select “Sensor calibration [ ▲ ] ▼” and press Enter key (I) to confirm it. Press Up (I) and Down (J) keys at the same time to proceed the calibration. Then, press Enter key (I) to enter the sensor settings.
Battery message:

- **Battery OK**: Measurements are possible
- **Battery Low**: The battery needs to be recharged, measurements are still possible
- **Battery Exhausted**: Measurements are not possible

Battery installation:

This device is supplied with Li-ion 18650 3.7V rechargeable battery *3 pcs. Please confirm whether batteries + polarity are Li ion18650 positive bump specification and install batteries in the correct polarity. If the battery polarity is reversed, the capacity will be insufficient and the battery life will be shortened.

Battery charging:

During battery charging, the temperature of the device will rise by 5°C~10°C. At this time, the measurements of temperature and humidity will be affected by temperature rise. Cause an impact on the accuracy of the CO sensor. Please use a fan to blow toward the Temperature & Humidity Sensor (ii) directly in order to get a compensated balance of temperature and humidity between temperature sensor and surrounding area. (5V/1A USB adapter charger)

Safety Instructions

Warning: Your safety is very important to us. To ensure use of the device correctly and safely, we would like to draw your attention to read the warning and entire User Manual before using the device. These are important safety information and should always be observed ,

1. Please handle the device lightly, do not subject the device to impact or shock.
2. Do not immerse the device in water. Water can cause electric shock, fire or malfunction which may result in damage.
3. Do not keep the device under the hot and moisture environment. Keep the device away from the heat source or near water.
4. Please use a standard USB power supply (such as PC’s USB port, universal AC adapter with USB port). Improper power supply can cause serious damage to the device, or result in injury or death to the user.

Product Care

To ensure you receive the maximum benefit from using this device, please observe the follow guidelines.

1. The maximum capacity of the SD card is 16G.
2. During battery charging, the temperature of the device rises. The temperature and humidity sensors are affected. At this time, measurements are only for reference. After batteries are fully charged and the device cools down, measurements are reliable.
3. Repair – Do not attempt to repair the device or modify the circuitry by yourself. Please contact with the local dealer or a qualified repairman if the device needs servicing.
4. Caution – The CO sensor must be replaced every 3 years.
5. Cleaning – Disconnect the power before clean. Use a damp cloth, do not use the liquid cleaning agent, such as benzene, thinner or aerosols.
6. Maintenance – Recommend that the user conducts a comprehensive test and calibration every year to ensure the normal operation of the device.

Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement Range &amp; Accuracy</strong></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>0~1000ppm, ±2% FS / ±0.1%</td>
</tr>
<tr>
<td>CH4, CH₃OH</td>
<td>0~3%, ±2% FS / ±0.1%</td>
</tr>
<tr>
<td>H₂, NH₃, N₂O, C₂H₆</td>
<td>0~10%, ±5%, ±2% FS / ±0.1%</td>
</tr>
<tr>
<td>Temperature</td>
<td>0~50°C, ±0.5°C</td>
</tr>
<tr>
<td><strong>Display Resolution</strong></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>0-10ppm</td>
</tr>
<tr>
<td>CH4, CH₃OH</td>
<td>0-3ppm</td>
</tr>
<tr>
<td>H₂, NH₃, N₂O, C₂H₆</td>
<td>0-100ppm, ±2% FS / ±0.1%</td>
</tr>
<tr>
<td>Temperature</td>
<td>0~50°C, ±1°C</td>
</tr>
</tbody>
</table>

Note: After power on, it would take 20 minutes for the device to stabilize the measurements of temperature and relative humidity.

EMC/RFI: Readings may be affected if the unit is operated within radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.

Contact Details:
Exclusively Distributed & Supported By:
Air Quality Sensors
Ph: 1300 430 928
info@airqualitysensors.com.au
www.airqualitysensors.com.au

Package contents

CM-1000 Multi Gas Sampling Logger
Manual
Batteries
USB 1.5M cable