

CALT QY-W-CO2



CALT QY-W-CO2 Carbon Dioxide (CO2) Transmitter User Manual

Model: QY-W-CO2 | Built-in Probe, 0-10V Output

1. INTRODUCTION

The CALT QY-W-CO2 Carbon Dioxide (CO2) Transmitter is a high-precision industrial sensor designed for monitoring indoor air quality. This device accurately measures CO2 concentrations within a range of 0 to 5000 ppm and provides a 0-10V analog output signal. It features a built-in probe and an IP65-rated waterproof housing, making it suitable for both indoor and outdoor environments. This manual provides essential information for the proper installation, operation, and maintenance of your CO2 transmitter.

2. SAFETY INFORMATION

- Read all instructions carefully before installation and operation.
- Ensure the power supply voltage (10V-30V DC) matches the device requirements to prevent damage.
- Installation should be performed by qualified personnel in accordance with local electrical codes.
- Do not expose the device to corrosive gases or extreme temperatures beyond its operating range.
- Avoid physical impact or excessive vibration to the sensor.
- Disconnect power before performing any wiring or maintenance.

3. PRODUCT FEATURES

- **High Precision:** Measures CO2 from 0 to 5000 ppm with an accuracy of $\pm(40\text{ppm} + 3\% \text{ F.S})$ at 25°C.
- **Robust Design:** IP65 waterproof wall-mounted housing for versatile indoor and outdoor use.
- **Analog Output:** Provides a standard 0-10V output signal for integration with control systems.
- **Quick Response:** Data update time of 2 seconds.
- **Stable Performance:** Stability less than 2% F.S.

- **Wide Application:** Ideal for agricultural greenhouses, flower cultivation, industrial workshops, and other CO2 monitoring needs.

4. TECHNICAL SPECIFICATIONS

Parameter	Specification
CO2 Measurement Range	0 ~ 5000 ppm
CO2 Accuracy	±(40ppm + 3% F.S) (at 25°C)
Data Update Time	2 seconds
Stability	<2% F.S
Nonlinearity	<1% F.S
Warm-up Time	2 minutes (available), 10 minutes (maximum precision)
Output Signal	0-10V
Supply Voltage	10V-30V DC
Probe Type	Built-in probe
Operating Humidity	95% (non-condensing)
Product Dimensions (L x W x H)	110mm x 85mm x 44mm (4.33"D x 3.35"W x 1.73"H)
Item Weight	0.7 Pounds (approx. 11.2 ounces)
IP Rating	IP65

5. PRODUCT OVERVIEW

The CALT QY-W-CO2 transmitter is housed in a compact, durable enclosure designed for easy wall mounting. The built-in CO2 sensor probe is integrated directly into the unit.



Figure 1: Front view of the CALT QY-W-CO2 Carbon Dioxide Transmitter. The white enclosure features a label indicating 'CO2 Sensor' and the integrated probe extending from the bottom.



Figure 2: Dimensions of the CALT QY-W-CO2 Carbon Dioxide Transmitter. The unit measures 110mm in length, 85mm in width, and 44mm in height.

6. INSTALLATION AND WIRING

6.1 Mounting

The transmitter is designed for wall-mounted installation. Use appropriate screws and anchors for the mounting surface. Ensure the device is mounted in a location representative of the air quality to be monitored, away from direct drafts, heat sources, or areas with stagnant air.

6.2 Wiring

The device requires a 10V-30V DC power supply. The output is a 0-10V analog signal. Ensure correct polarity and secure

connections to prevent damage or inaccurate readings. The sensor input power, sensor probe, and signal output are completely isolated.

- **Red Wire:** Power Supply Positive (10V-30V DC)
- **Black Wire:** Power Supply Negative / Ground
- **Yellow Wire:** 0-10V Output Signal

Refer to the following video for a visual guide on the product and its connections:

Your browser does not support the video tag.

Video 1: Overview of the CALT QY-W-CO2 Carbon Dioxide Transmitter sensor, demonstrating its physical appearance and cable connections.

7. OPERATION

7.1 Power On and Warm-up

Once correctly wired and powered, the transmitter will begin its warm-up sequence. The device will provide available readings after approximately 2 minutes. For maximum precision and stable operation, allow the unit to warm up for 10 minutes.

7.2 Interpreting the 0-10V Output

The 0-10V output signal corresponds to the CO2 concentration range of 0-5000 ppm. A 0V output indicates 0 ppm CO2, and a 10V output indicates 5000 ppm CO2. Intermediate voltage values can be linearly scaled to determine the CO2 concentration.

- **Formula:** $\text{CO}_2 \text{ (ppm)} = (\text{Output Voltage} / 10\text{V}) * 5000 \text{ ppm}$
- For example, if the output voltage is 5V, the CO2 concentration is $(5\text{V} / 10\text{V}) * 5000 \text{ ppm} = 2500 \text{ ppm}$.

8. MAINTENANCE

The CALT QY-W-CO2 transmitter is designed for low maintenance. Regular checks can help ensure optimal performance:

- **Cleaning:** Periodically clean the exterior of the enclosure with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure the sensor probe opening remains clear of dust and debris.
- **Calibration:** The sensor is factory calibrated. Under normal operating conditions, re-calibration is generally not required. If you suspect inaccurate readings, consult the manufacturer for calibration services or instructions.
- **Wiring Inspection:** Annually inspect wiring connections for any signs of corrosion or loosening.

9. TROUBLESHOOTING

If you encounter issues with your CALT QY-W-CO2 transmitter, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
No output signal / Incorrect voltage	- No power supply or incorrect voltage. - Incorrect wiring. - Sensor warm-up period not complete. - Faulty wiring or connection.	- Verify power supply (10V-30V DC) and connections. - Check wiring against the diagram in Section 6.2. - Allow 10 minutes for warm-up after power-on. - Inspect cables for damage and ensure secure connections.
Inaccurate CO2 readings	- Sensor not fully warmed up. - Sensor located in an unrepresentative area (e.g., near a vent, direct sunlight). - Obstruction of the sensor probe. - Environmental interference.	- Ensure the sensor has completed its 10-minute warm-up. - Relocate the sensor to a more suitable monitoring area. - Clean the sensor probe opening. - Ensure stable environmental conditions.
Intermittent signal	- Loose wiring connections. - Power supply instability.	- Check and tighten all wiring connections. - Ensure a stable and consistent power supply.

10. WARRANTY AND SUPPORT

CALT products are manufactured to high-quality standards. For specific warranty details, please refer to the documentation provided with your purchase or contact CALT customer support. If you require technical assistance or have questions not covered in this manual, please contact your supplier or CALT directly.

Manufacturer: CALT
Model Number: QY-W-CO2
UPC: 754191885303

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question