

Replacement 4-in-1 Sensor for Green-X Controller (MBS-GH) User Manual



OVERVIEW

Thank you for choosing the MBS-GH Sensor. This sensor is designed to measure CO₂, temperature, humidity, and illuminance in greenhouse environments. Designed for Green-X Greenhouse controller (GCS-1). It integrates a high-precision CO₂ sensor ($\pm 3\%$ accuracy), SHT31 temperature/humidity sensor, NTC temperature sensor ($\pm 0.5^{\circ}\text{C}$ accuracy), and light sensing. With RS485 signal output, it ensures stable and accurate data transmission over long distances. This manual provides instructions for installation, operation, and maintenance of the MBS-GH sensor.

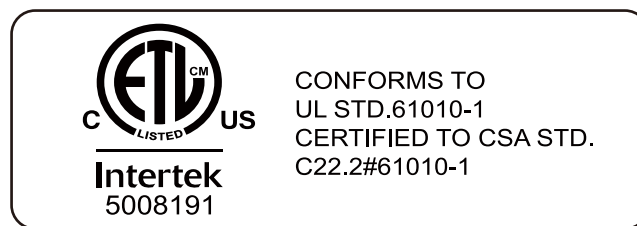
The MBS-GH is suitable for various automated environmental control systems, ensuring precise monitoring to optimize growth conditions in greenhouses and other agricultural applications.

PACKAGE CONTENTS

- 1x Replacement 4-in-1 Sensor for Green-X Controller (MBS-GH)
- 1x 4ft RJ Cable
- 1x T-Shape Splitter

SPECIFICATIONS

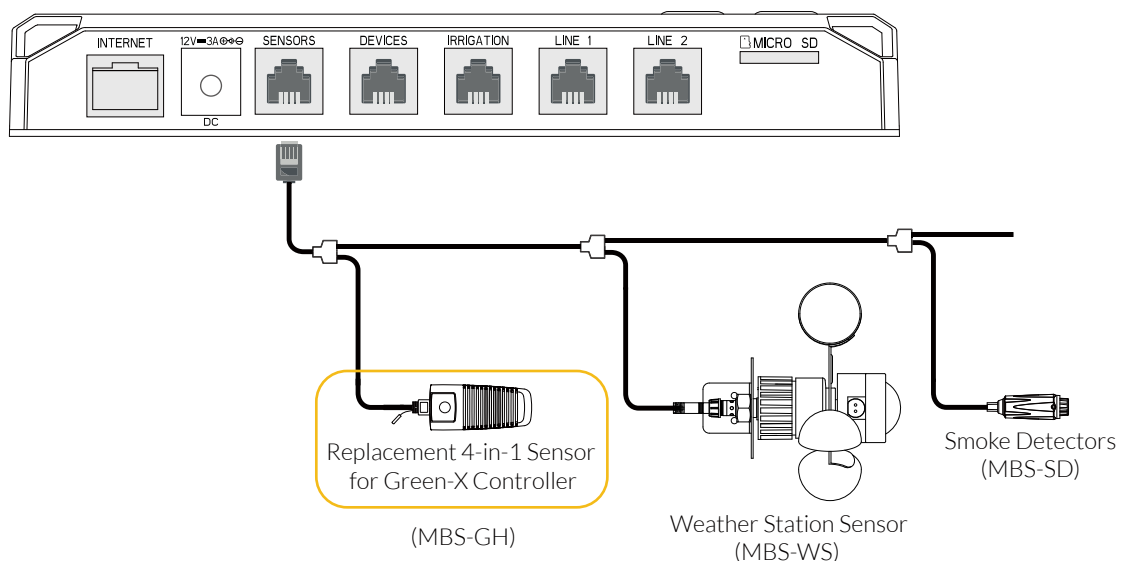
Package Dimensions	187mm (L) x 130mm (W) x 58.5mm(H)
Communication Method	RS485
Input Voltage	12V \pm 0.1A
Power Consumption	<1W
Operating Temperature	32-122°F (0-50°C)
Operating Humidity	≤95%RH



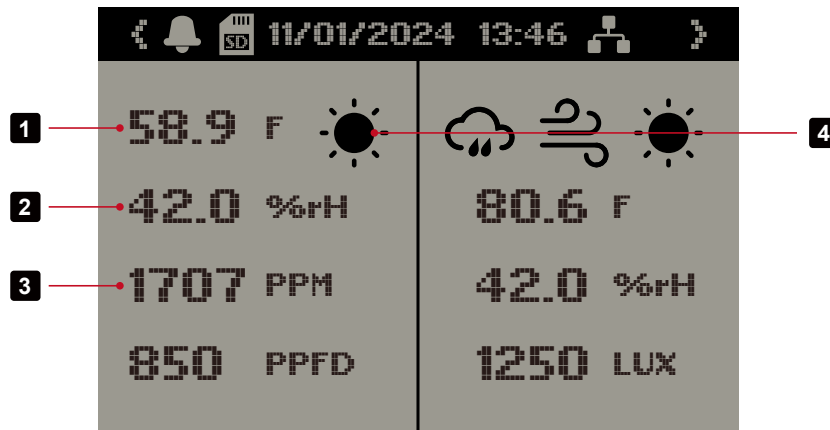
INSTALLATION INSTRUCTIONS

Connect to the Controller

- Attach the RJ12 Connector Cable to the controller’s sensor port, or attach to RJ12 Splitter Hub with cable (SPH-1), then attach SPH-1 into GCS-1 controller.
- Confirm the connections are tightly secured to prevent data loss or interference.
- Let the MBS-GH hang naturally after connecting



OPERATION INSTRUCTIONS



This interface indicates greenhouse and outdoor status, Left side indicates greenhouse status and right side indicates outdoor status.

Greenhouse Status

1 Indoor Temperature **2** Indoor Humidity **3** Indoor CO2 Level **4** Day / Night Status

- Once installed, the MBS-GH sensor will automatically measure CO2 concentration, temperature, humidity.

Measurement Ranges:

- **CO2 Concentration:** Accurate within $\pm 70\text{ppm} \pm 3\%$.
- **Temperature:** 0-50°C, accuracy $\pm 0.5^\circ\text{C}$.
- **Humidity:** $\leq 90\%RH$, accuracy $\pm 3\%RH$.

SAFETY AND MAINTENANCE

Safety Precautions:

- Disconnect the sensor from power before installation or maintenance.
- Avoid exposing the sensor to extreme mechanical shock or impacts.
- Do not use or store the sensor in environments exceeding its rated temperature or humidity range.

Maintenance:

- Periodically inspect the sensor for damage or wear.
- Clean the sensor housing using a soft, dry cloth. Avoid cleaning with solvents or water.
- If the sensor exhibits erratic behavior, contact technical support.

Storage:

- Store the sensor in a dry, temperature-controlled environment when not in use.

TROUBLESHOOTING

ISSUE	POSSIBLE CAUSE	SOLUTION
No data transmission	Loose connection or no power	Check cable connections and power
Inaccurate CO2 readings	Sensor blocked or damaged	Inspect and clean the sensor
Incorrect illuminance data	Lens dirty or obstructed	Clean and ensure proper alignment
Controller not receiving data	Signal interference or cable issue	Verify RS485 connection integrity

WARNING: **DO NOT** allow the MBS-GH to be exposed to water or excessive heat, **DO NOT** open or attempt to repair or disassemble the controller, as there are no user-serviceable parts inside. Opening the controller will void the warranty. If the surface of MBS-GH is dirty, wipe it with a dry towel. The MBS-GH operates under natural ventilation conditions.

AVERTISSEMENT: **N'exposez PAS** le régulateur de zone MBS-GH à de l'eau ou à une chaleur excessive. **NE l'ouvrez PAS**, NE tentez PAS de le réparer ou de le démonter, car il ne contient aucune pièce réparable par l'utilisateur. Louverture du régulateur entraîne l'annulation de la garantie. Si la surface du MBS-GH est sale, essuyez-la à l'aide d'un chiffon sec. Le MBS-GH fonctionne sous des conditions de ventilation naturelle.

The MBS-GH sensor comes with a 3-year warranty. For any issues or concerns with our products, **DO NOT** return them to the store. Please contact our tech support department at support@trolmaster.com or call **877-420-9876**.

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