

The GH Series Greenhouse/Horticulture sensor is designed for a greenhouse or indoor grow facility to monitor and allow control for optimum plant growing conditions. The GH Series is available in 2 models; Temperature & Humidity or Temperature, Humidity & Carbon Dioxide. The GH Series utilizes a highly accurate and reliable dual-channel, non-dispersive infrared (NDIR) sensor to monitor CO₂, a precision thermistor to monitor temperature and a thermoset polymer based capacitance sensor to measure humidity levels. All sensors are encapsulated in filtered sensor pods that are field replaceable. Features include an LCD for configuration and visual indication, various output signal types, optional relays for alarm indication. An IP65 rated enclosure that can be either wall mounted or suspended from the ceiling is provided to protect against moisture penetration.

SPECIFICATIONS:

GENERAL

Power Supply.....24 Vac/dc ±20% (non-isolated half-wave rectified)
 Consumption.....**Current:** 120 mA max @ 24 Vdc, 220 mA max @ 24 Vac
Voltage: 80 mA max @ 24 Vdc, 130 mA max @ 24 Vac
BACnet®/Modbus: 75 mA max @ 24 Vdc, 125 mA max @ 24 Vac
 Protection Circuitry.....Reverse voltage protection, overvoltage protected
 Operating Conditions.....-10 to 50°C (14 to 122°F), 5 to 95 %RH non-condensing
 Storage Conditions.....-30 to 60°C (-22 to 140°F)
 Enclosure.....IP65 (NEMA 4X)
 130mm W x 130mm H x 75mm D (5.12" x 5.12" x 2.95")
 Wiring Connections.....Screw terminal block (14 to 22 AWG)
 Country of Origin:.....Canada

LCD DISPLAY

Size.....35mm W x 15mm H (1.4" x 0.6")
 alpha-numeric 2 line x 8 characters
 Backlight.....Enable or disable via menu or network

ANALOG OUTPUTS

Output Signals.....4-20 mA active (sourcing) or 0-5 Vdc / 0-10 Vdc
 Output Drive Capability...**Current:** 550Ω maximum
Voltage: 5 KΩ minimum

BACnet®

InterfaceMS/TP, 2-wire RS-485
 Baud Rate.....9600, 19200, 38400, 57600, 76800, or 115200
 Address Range0 to 127

MODBUS

InterfaceMS/TP, 2-wire RS-485
 Baud Rate.....9600, 19200, 38400, 57600, 76800 or 115200
 Address Range1 to 255

TEMPERATURE

Sensor.....NTC thermistor
 Accuracy.....±0.2°C (±0.4°F)
 Range.....0 to 50°C (32 to 122°F)

RELATIVE HUMIDITY

Sensor.....Thermoset polymer based capacitive
 Accuracy.....±2 %RH
 Range.....0 to 100 %RH
 Hysteresis.....±1.5 %RH
 Response Time.....15 seconds typical
 Stability.....±1 %RH typical @ 50 %RH in 5 years

CO₂ (GH3 MODEL)

Measurement Type.....Dual-channel, non-dispersive infrared (NDIR),
 diffusion sampling
 Measurement Range0 to 5000 ppm
 Standard Accuracy.....±50 ppm + 3% of reading
 Pressure Dependence.....< 1% of reading / kPa
 Response Time.....2 minutes (T90)
 Sensor Life Span> 10 years

OPTIONAL RELAY OUTPUTS

Contact Ratings.....Form C (NO + NC), 2A @ 140Vac, 2A @ 30Vdc
 Setpoint + Hysteresis.....Programmable via menu or network
 Time Delay.....Programmable via menu or network



PART NUMBER SELECTED

PRODUCT SELECTION INFORMATION:

MODEL	Product Description
GH	Greenhouse/Horticulture Sensor

CODE	Sensors
2	Temperature & Humidity
3	Temperature, Humidity & Carbon Dioxide

CODE	Mounting
WM	Wall Mount

CODE	Enclosure
B	5" x 5" with smoked, transparent cover
C	5" x 5" with solid cover

CODE	Output
I	Analog, 4-20 mA (2x or 3x)
V	Analog, 0-5 or 0-10 Vdc (2x or 3x)
B	BACnet® Communications
M	Modbus Communications

CODE	Relay
XX	None
R1	1 Relay
R2	2 Relay

Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.

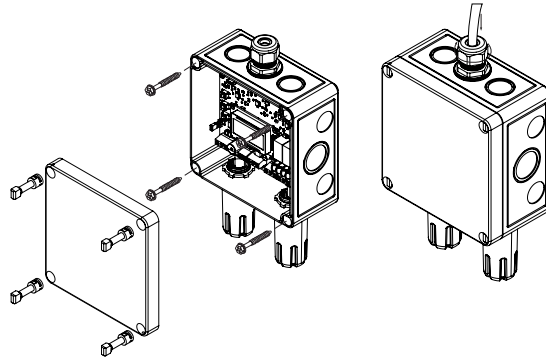
ACCESSORIES:

GHP-RHT: Replacement Temperature & Humidity Sensor Pod
GHP-CO2: Replacement Temperature, Humidity & Carbon Dioxide Sensor Pod

TYPICAL INSTALLATION:

For complete installation and wiring details, please refer to the product installation instructions.

The horticulture sensor can be mounted directly onto any wall or flat surface, or may be suspended from the ceiling using the device cable harness which is secured to the enclosure with a compression style fitting.



BACnet® COMMUNICATION

BACnet® is a data communication protocol for building automation and control networks. The sensor communicates on a standard 2-wire RS-485 MS/TP network designed to run at speeds from 9600 to 115200 baud over twisted pair wiring.

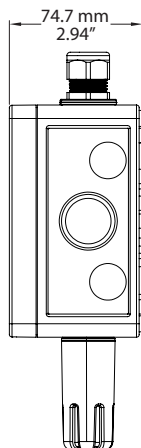
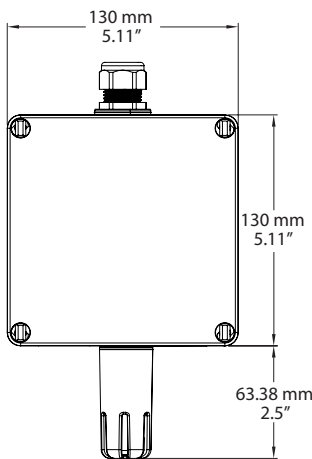
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MODBUS COMMUNICATION

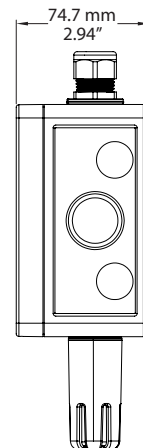
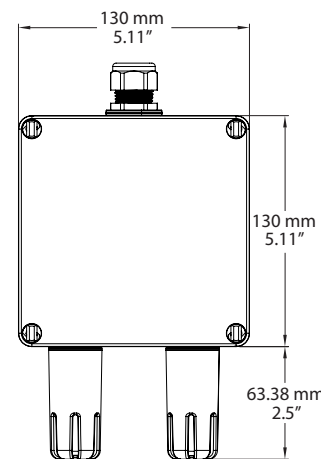
Modbus is a network protocol for industrial manufacturing environments. The sensor communicates on a standard Modbus network using the RTU (Remote Terminal Unit) transmission mode. The hardware interface is RS-485.

DIMENSIONS:

GH2 Model



GH3 Model



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RoHS
COMPLIANT



Greystone Energy Systems Inc. is one of North America's largest ISO registered manufacturers of HVAC/R sensors and transmitters for Building Automation Management Systems.

We have conscientiously established a worldwide reputation as an industry leader by maintaining leading-edge design technology, prompt technical support, and a commitment to on-time deliveries. We take pride in our Quality Management System which is ISO 9001 certified, assuring our customers of consistent product reliability.

GREYSTONE HAS AN ISO 9001 REGISTERED QUALITY SYSTEM