

# GREYSTONE ENERGY SYSTEMS INC

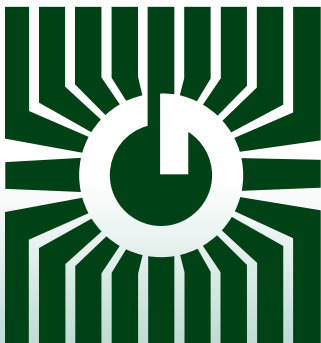
## RELATIVE HUMIDITY TRANSMITTER RH Series



### Precision humidity control/sensing

#### FEATURES:

- Highly stable RH sensor element
- Humidity range: 0-100%
- Accuracy available 2%, 3%, & 5%
- Choice of precision temperature sensors
- LCD display available
- Field selectable outputs
- AC/DC operation
- Custom logo available



*Peace of mind  
through reliable  
humidity monitoring*

**DESCRIPTION:**

The RH series of humidity transmitters are designed for use in environmental monitoring and control systems where high performance and stability are demanded. It's state-of-the-art design combines digital linearization and temperature compensation with a world class capacitive sensor for reliability and accuracy in even the most critical applications. Various models cover many aspects of RH measurement and several optional features are available to meet virtually all HVAC applications.

**SPECIFICATION:**

Sensor Type:.....	Thermoset Polymer based capacitive
Accuracy at 25°C:.....	±2, 3, or 5% RH, (5% to 95% RH)
Measurement Range:.....	0 to 100% RH
Temperature Dependence:.....	±0.05% RH/ °C
Hysteresis:.....	±1.5% RH maximum
Repeatability:.....	±0.5% RH typical
Linearity:.....	±0.5% RH typical
Sensor Response Time:.....	15 seconds typical
Stability:.....	±1% RH typical at 50% RH in 5 yrs.
Operating Temperature:.....	0° to 70°C (32° to 158°F) for RH100 -40° to 85°C (-40° to 185°F) for RH200/RH300
Operating Humidity:.....	0 to 95% RH non-condensing
Power Supply:.....	18 to 35 Vdc, 15 to 26 Vac
Consumption:.....	22 mA maximum
Input Voltage Effect:.....	Negligible over specified operating range
Protection Circuitry:.....	Reverse voltage protected and out limited
Output Signal:.....	4-20 mA current loop, 0-1, 0-5 or 0-10 Vdc (jumper-selectable)
Output Drive at 24 Vdc:.....	550 ohms max for current output 10K ohms min for voltage output
Internal Adjustments:.....	Clearly marked ZERO and SPAN pots
Wiring Connections:.....	Screw terminal block (14 to 22 AWG)
Optional LCD Display:.....	RH200A Only 3 digit for 00.0 to 99.9% RH, 24 x 11mm (0.95" w x 0.45" h)
Optional Temperature Sensor:...	Various RTDs and thermistors available as two-wire resistance output (See Ordering Chart)
Enclosures:.....	RH100B (Designer), IP20 (Nema 1), 70x114x30mm, (2.75" w x 4.5" h x 1.2" d) RH200A (ABS), IP61 (Nema 2), 114x84x53mm (4.5" w x 3.3" h x 2.1" d) RH200E (Round), IP65 (Nema 4X), 91mm (3.6") diameter x 53mm (2.1") deep RH200M (Metal), IP50 (Nema 1), 102x63x58mm (4" w x 3.3" h x 2.1" d) RH200W (Metal WP) IP64 (Nema 3X), 115x72x56mm (4.5" w x 2.8" h x 2.5" d) RH300A (ABS WP) IP65 (Nema 4X), 122x112x63mm (4.8" w x 4.8" h x 2.5" d)
RH200 Probe:.....	230 mm (9") probe length x 12.7 mm (1/2") diameter stainless steel with porous filter

# PRODUCT ORDERING INFORMATION

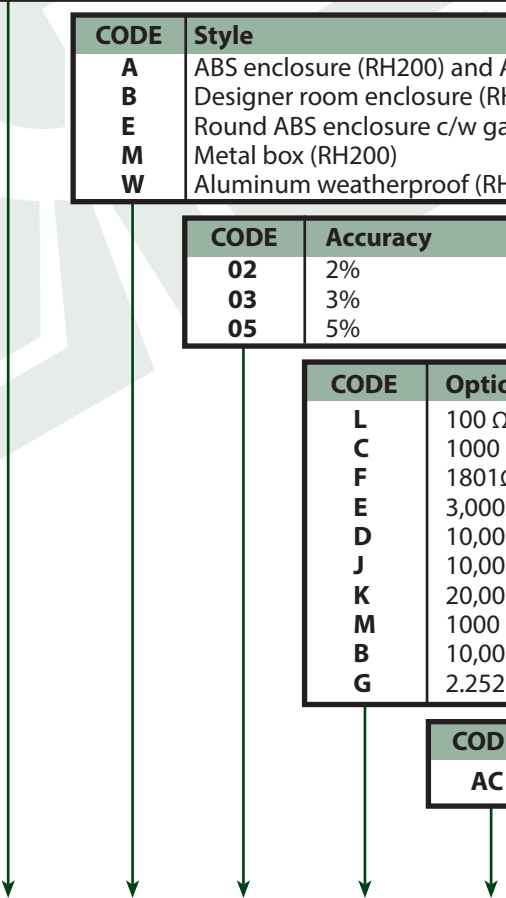
MODEL	Product Description
RH100	Room
RH200	Duct
RH300	Outside Air

CODE	Style
A	ABS enclosure (RH200) and ABS hinged enclosure (RH300)
B	Designer room enclosure (RH100)
E	Round ABS enclosure c/w gasketed cover (RH200)
M	Metal box (RH200)
W	Aluminum weatherproof (RH200)

CODE	Accuracy
02	2%
03	3%
05	5%

CODE	Optional Temperature Sensor
L	100 Ω Platinum, IEC 751, 385 Alpha, thin film
C	1000 Ω Platinum, IEC 751, 385 Alpha, thin film
F	1801Ω, NTC Thermistor, ±0.2°C
E	3,000Ω, NTC Thermistor, ±0.2°C
D	10,000Ω, Type 3, NTC Thermistor, ±0.2°C
J	10,000Ω, Type 2, NTC Thermistor, ±0.2°C
K	20,000Ω, NTC Thermistor, ±0.2°C
M	1000 Ω Nickel, Class B, DIN 43760
B	10,000Ω Type 3, NTC Thermistor, ±0.2 C c/w 11K shunt Resistor
G	2.252KΩ Thermistor, ±0.2 C

CODE	Options
AC	LCD display (RH200A only)



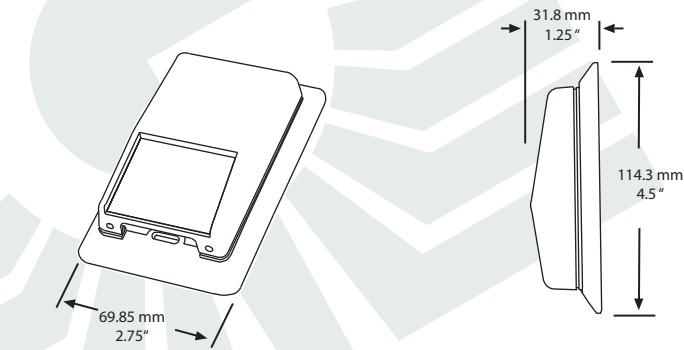
<b>RH200</b>	<b>A</b>	<b>03</b>	<b>C</b>	<b>-</b>
--------------	----------	-----------	----------	----------

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

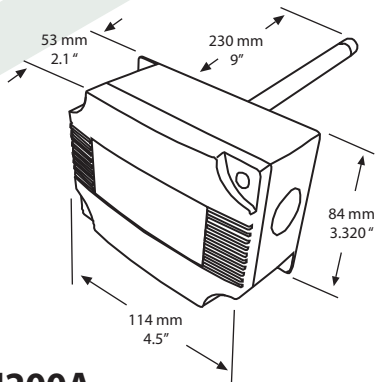
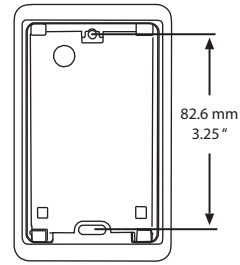
### EXAMPLE:

**RH200A03C** - Duct humidity c/w ABS enclosure, 3% accuracy and 1000 Ω temperature sensor.

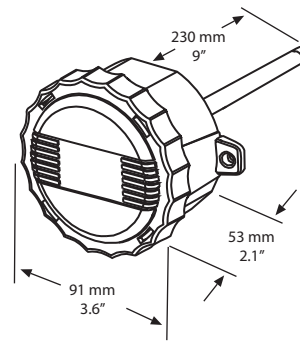
# ENCLOSURE DIMENSIONS



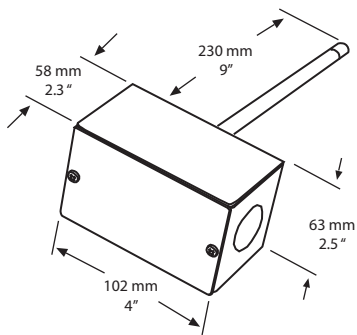
**RH100B**



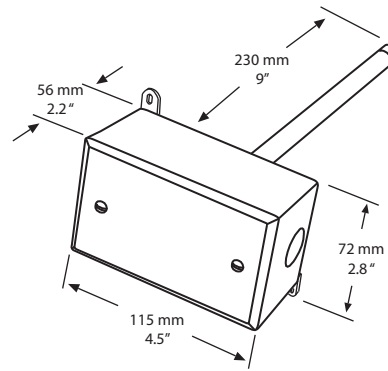
**RH200A**



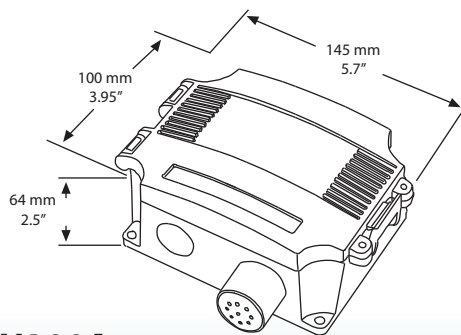
**RH200E**



**RH200M**

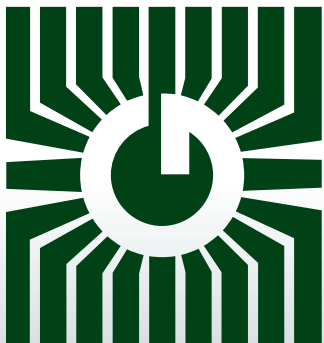


**RH200W**



**RH300A**

# GREYSTONE ENERGY SYSTEMS INC



## HUMIDITY/TEMPERATURE TRANSMITTER RH Series



### Precision humidity/temperature control/sensing

#### FEATURES:

- Highly stable RH sensor element
- Humidity range: 0-100%
- Accuracy available 2%, 3%, & 5%
- Precision Platinum RTD for Temperature
- AC/DC operation
- Custom logo available

*Peace of mind  
through reliable  
humidity monitoring*

**DESCRIPTION:**

The RH series of humidity/temperature transmitters are designed for use in environmental monitoring and control systems where high performance and stability are demanded. It's state-of-the-art design combines digital linearization and temperature compensation with a world class capacitive humidity sensor and platinum RTD for reliability and accuracy in even the most critical applications. Various models cover many aspects of RH and temperature measurement and several optional features are available to meet virtually all HVAC applications.

**SPECIFICATION:**

Humidity Sensor Type:.....	Thermoset Polymer based capacitive
Accuracy at 25°C:.....	±2, 3, or 5% RH, (5% to 95% RH)
Measurement Range:.....	0 to 100% RH
Temperature Dependence:.....	±0.05% RH/ °C
Hysteresis:.....	±1.5% RH maximum
Repeatability:.....	±0.5% RH typical
Linearity:.....	±0.5% RH typical
Sensor Response Time:.....	15 seconds typical
Stability:.....	±1% RH typical at 50% RH in 5 yrs.
Temperature Sensor Type:.....	1000Ω Platinum, IEC 751, 385 Alpha, thin film
Accuracy:.....	±0.1% of span
Operating Temperature:.....	0° to 70°C (32° to 158°F) for RH110 -40° to 85°C (-40° to 185°F) for RH210/RH310
Operating Humidity:.....	0 to 95% RH non-condensing
Power Supply:.....	18 to 35 Vdc, 15 to 26 Vac (RH110B is Vdc only)
Consumption:.....	22 mA maximum
Input Voltage Effect:.....	Negligible over specified operating range
Protection Circuitry:.....	Reverse voltage protected and output limited
Output Signals:.....	<b>RH110B:</b> 4-20 mA output only <b>RH210A/RH310A:</b> 4-20 mA, 0-5 or 0-10 Vdc
Output Drive at 24 Vdc:.....	550 ohms max for current output 10K ohms min for voltage output
Internal Adjustments:.....	Clearly marked ZERO and SPAN pots
Wiring Connections:.....	Screw terminal block (14 to 22 AWG)
Enclosures:.....	RH110B (Designer), IP20 (Nema 1), 70x114x30mm, (2.75" w x 4.5" h x 1.25" d) RH210A (ABS), IP61 (Nema 2), 114x84x53mm (4.5" w x 3.3" h x 2.1" d) RH310A (ABS WP) IP65 (Nema 4X), 145x100x64mm (5.7" w x 3.95" h x 2.5" d)
RH210 Probe:.....	230 mm (9") probe length x 12.7 mm (1/2") diameter stainless steel with porous filter

## RELATIVE HUMIDITY: PRODUCT ORDERING INFORMATION

MODEL	Product Description, Dual transmitter - Humidity and Temperature
<b>RH110B</b>	Designer Space
<b>RH210A</b>	Duct
<b>RH310A</b>	Outside Air

CODE	Accuracy
<b>02C</b>	2%
<b>03C</b>	3%
<b>05C</b>	5%

CODE	Power Supply
<b>1</b>	24 Vdc (RH110B)
<b>2</b>	24 Vac/Vdc (RH210A & RH310A)

CODE	Output Signals (RH and Temperature)
<b>A</b>	4 - 20 mA
<b>D</b>	0 - 5 Vdc (RH210A and RH310A only)
<b>E</b>	0 - 10 Vdc (RH210A and RH310A only)

CODE	Transmitter Span Range
<b>1</b>	0°C - 35°C (32°F - 95°F)
<b>2</b>	0°C - 50°C (32°F - 122°F)
<b>3</b>	0°C - 100°C (32°F - 212°F)
<b>6</b>	-50°C - 50°C (-58°F - 122°F)

RH110B	03C	1	A	1
--------	-----	---	---	---

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

### EXAMPLE:

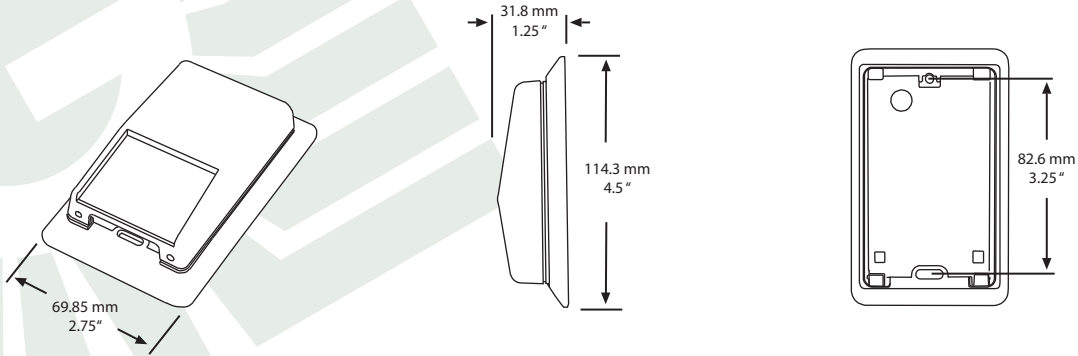
#### RH110B03C2A1

3% Space designer humidity c/w temperature transmitter with 1000Ω RTD, 24 Vdc power supply, 4 - 20mA output over 0°C - 35°C (32°F - 95°F).

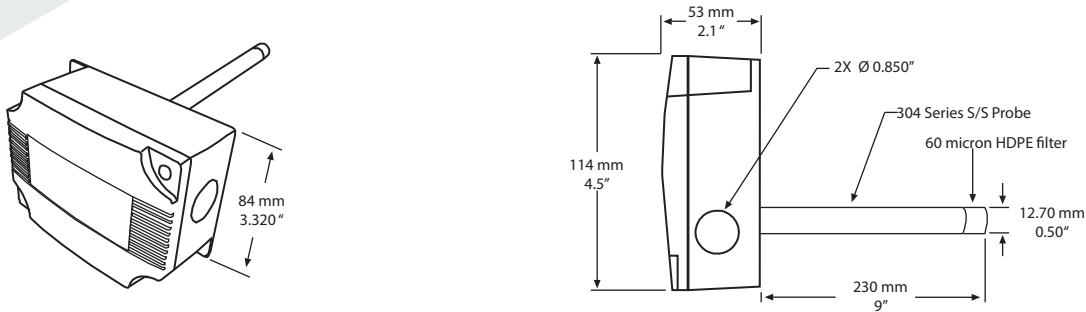
**Note:** Remote display option also available, see Miscellaneous Control Devices data sheet.

# ENCLOSURE DIMENSIONS

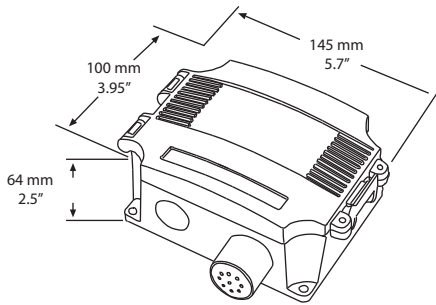
## RH110B



## RH210A



## RH310A



**GREYSTONE**

**ENERGY SYSTEMS INC**

Greystone Energy Systems Inc.  
 150 English Drive, Moncton,  
 New Brunswick, Canada E1E 4G7  
 (506) 853-3057 Fax: (506) 853-6014  
 North America: 1-800-561-5611  
 e-mail: mail@greystoneenergy.com  
 www.greystoneenergy.com



*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.*