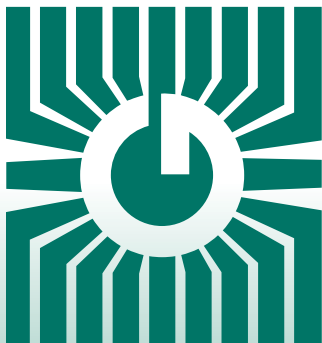


GREYSTONE

ENERGY SYSTEMS INC



ROOM TEMPERATURE SENSORS TSRC Series



Precision temperature control/sensing

FEATURES:

- Thermistor or Precision RTD sensing elements
- Optional LCD display
- Various options: Setpoint Adjustment, Override, etc.
- Custom laser etching available

*Peace of mind
through reliable
temperature monitoring*

GREYSTONE HAS AN ISO 9001 REGISTERED QUALITY SYSTEM

TSRC SERIES - ROOM TEMPERATURE SENSOR:

DESCRIPTION:

The TSRC Series of room temperature sensors incorporate a precision platinum or nickel RTD or a NTC thermistor in an attractive wall mount enclosure. The universal back plate can be mounted directly to several electrical box styles or directly on any wall.

The TSRC has various options available such as setpoint adjustment, manual override, LCD display, etc. that allows for use in a multitude of applications.

SPECIFICATIONS:

Sensor.....	Several available - See Ordering Information
Sensor Accuracy.....	Thermistors: $\pm 0.2^{\circ}\text{C}$ ($\pm 0.36^{\circ}\text{F}$), 0 to 70°C (32 to $^{\circ}\text{F}$)
.....	Platinum RTD's: $\pm 0.3^{\circ}\text{C}$ ($\pm 0.54^{\circ}\text{F}$) @ 0°C (32 $^{\circ}\text{F}$)
.....	Nickel RTD's: $\pm 0.4^{\circ}\text{C}$ ($\pm 0.72^{\circ}\text{F}$) @ 0°C (32 $^{\circ}\text{F}$)
Operating Temperature	0 - 50°C (32 - 122°F), 0 - 95%RH non-condensing
Enclosure.....	White ABS - IP30 (NEMA 1)
.....	84mm W x 117mm H x 29mm D (3.3" x 4.6" x 1.15")
Wiring Connections.....	Sensor only - Pigtail, 2 or 3 wire
.....	With Options - Screw terminal block (14 to 22 AWG)

OPTIONS:

Setpoint Adjustment

Type.....	Front panel slidepot, 2 wire resistance output
Range.....	0K to 10K Ω standard
Custom spans available	1K, 2K, 5K, 10K or 20K Ω

Manual Override

Type.....	Front panel, momentary pushbutton
Ratings.....	50 mA @12 Vdc, N.O., SPST

Temperature Display

Power Supply	12-24 Vdc/24 Vac $\pm 10\%$
Consumption @ 24 Vdc	13 mA w/o backlight, 23 mA w/ backlight
Protection.....	Reverse voltage protected
Display Range.....	0 - 35°C / $32 - 95^{\circ}\text{F}$ (Jumper selectable)
Display Resolution	0.1 $^{\circ}\text{C}/\text{F}$
Display Size.....	38.1 mm W x 16.5 mm H (1.5" x 0.65")
Digit Height	11.43 mm (0.45")
Symbols	$^{\circ}\text{C}$, $^{\circ}\text{F}$, OCC
Backlight.....	Enable or disable via jumper

Occupied Input (Requires LCD)

Signal Type.....	Digital input, 0/5 Vdc standard, active low
Action	Causes "OCC" segment to light on LCD

Status LED Input (N/A when LCD selected)

Signal Type.....	Active high, low or 2-wire, 5 V current limited standard
LED Colors	Yellow (Y), Red (R) or Green (G),
Power Supply.....	5 Vdc standard, 10 or 24 Vdc optional

Communication Jacks

Molex	4 Pin header to 4 pin terminal block. Requires HHTA - Hand Held Adapter
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Fan Speed Switch

Type.....	Side mounted, 5 position slide switch
Designators	Off, Auto, Low, Medium, High
Signal	2 wire, resistance output - 0, 2, 4, 6, 8 K Ω
.....	Custom ranges available, contact Greystone

TSRC - ROOM TEMPERATURE SENSOR:

PRODUCT ORDERING INFORMATION:

MODEL	Product Description
TSRC	Room Temperature Sensor

CODE	Sensor
2	100 Ω Platinum, IEC 751, 385 Alpha, thin film
5	1801 Ω, NTC Thermistor, ±0.2 C
6	3000 Ω, NTC Thermistor, ±0.2 C
7	10,000 Ω, type 3, NTC Thermistor, ±0.2 C
8	2.252K Ω, NTC Thermistor, ±0.2 C
12	1000 Ω Platinum, IEC 751, 385 Alpha, thin film
13	1000 Ω Nickel, Class B, DIN 43760
14	10,000 Ω, type 3, NTC Thermistor, ±0.2 C c/w 11K shunt resistor
20	20,000 Ω, NTC Thermistor, ±0.2 C
24	10,000 Ω, type 2, NTC Thermistor, ±0.2 C

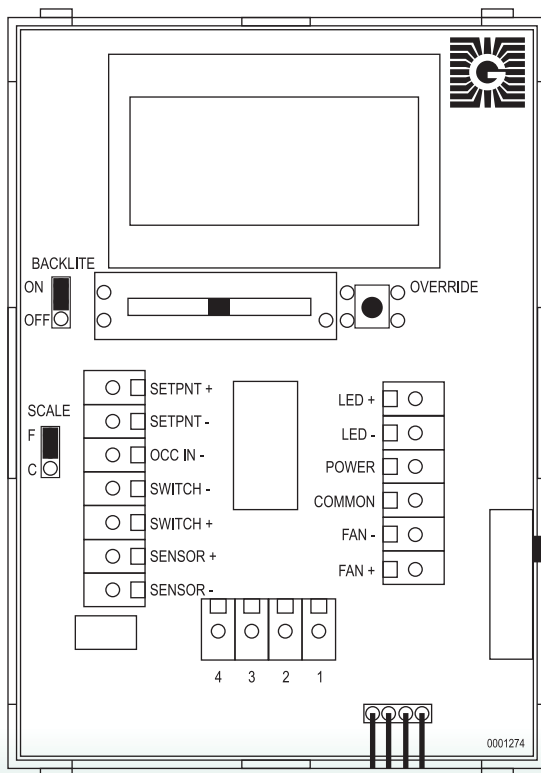
CODE	Options (Multiple selections can be made)
P	0-10K linear slide pot for set point control (Other ranges available, contact Greystone)
S	Front panel push button momentary switch (NO)
C	LCD Display temperature indicator °C/°F (Includes Occupied Input)
Y	Yellow LED (n/a when C option is selected)
R	Red LED (n/a when C option is selected)
G	Green LED (n/a when C option is selected)
E	External jack for remote system access (4-pin header)
F	Fan Speed Switch, 5 position, (Off, Auto, Low, Mid, High)

TSRC	7	P	S
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Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.

NOTE: Due to the many possible configurations, special part numbers may be required, please contact Greystone for more information.

PCB/WIRING INFORMATION



Terminal

Function

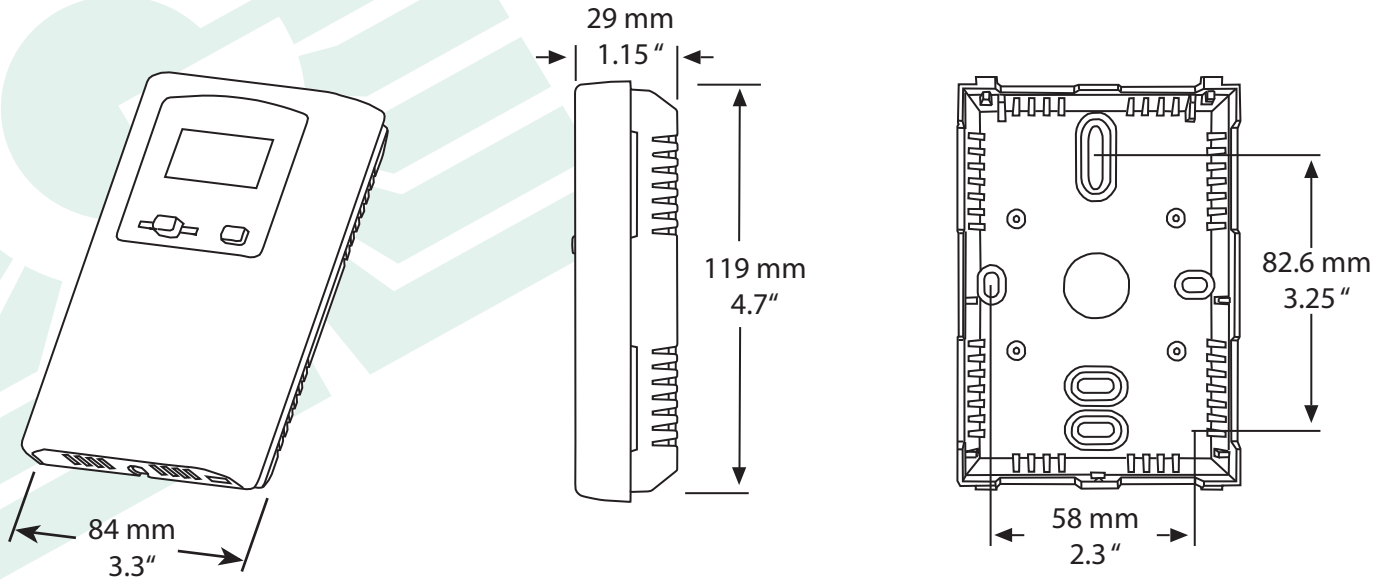
SETPNT +	Resistance Output
SETPNT -	GND or COMMON
OCC IN -	Vdc input (5 Vdc)
SWITCH -	GND or COMMON
SWITCH +	Digital output
SENSOR +	Resistance output
SENSOR -	GND or COMMON
LED +	Vdc input (5 Vdc standard)
LED -	GND or COMMON
POWER	Power input (Only required when LCD is selected)
COMMON	GND or COMMON (Only required when LCD is selected)
FAN -	GND or COMMON
FAN +	Resistance output
1	To External Jack PIN 1 (Farthest right)
2	To External Jack PIN 2
3	To External Jack PIN 3
4	To External Jack PIN 4

* Some models do not have all these features

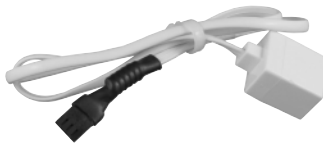
**To save on number of connection wires, all GND or COMMON may be connected together.

***Illustration shows standard wiring configuration. Custom configurations are available. Please contact Greystone.

DIMENSIONS:



ACCESSORIES:



HHTA-XXX

The HHTA - Handheld Adapter converts the Greystone standard 4 pin connector to the connector of choice such as a RJ12, phone jack. Several styles and configurations are available. Please contact Greystone.



A35R

A multi-purpose screw driver that includes a standard flat screwdriver and a 1/16" allen key, and can be used on all Greystone wall sensors.



GREYSTONE

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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