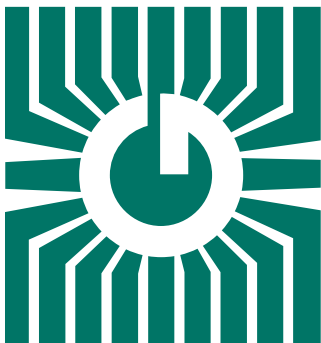


**GREYSTONE**  
ENERGY SYSTEMS INC



## ROOM TEMPERATURE SENSORS TSPC Series



### Precision temperature control/sensing

#### FEATURES:

- Precision Thermistor or RTD sensing elements
- LCD Display
- Setpoint Adjustment
- Optional Override, Fan Speed Switch and Communication Jack
- Custom laser etching available

*Peace of mind  
through reliable  
temperature monitoring*

GREYSTONE HAS AN **ISO 9001** REGISTERED QUALITY SYSTEM

## DESCRIPTION:

The TSPC room temperature sensor with resistive setpoint control is available in an attractive wall mount enclosure and can be configured with various options. It is available with various curve-matched thermistors or RTD sensors to measure temperature.

A back-lit LCD displays room temperature, setpoint on demand and occupancy. Several operating parameters can be programmed using a keypad and on-board jumpers configure the °C/F display or disable the backlight.

Available options include a dry-contact override switch, a five position fan speed switch and a jack for a network connection.

## SPECIFICATIONS:

Power Supply	24 Vac/dc $\pm 10\%$ (non-isolated half-wave rectified)
Consumption	20 mA max.
Operating Conditions	0 - 50°C (32 - 122°F), 0-95% RH non-condensing
Enclosure	White ABS - IP30 (NEMA 1) 84 w x 119 h x 29 d mm (3.3" x 4.7" x 1.15")
Wiring Connections	Screw terminal block (14 to 22 AWG)

### Temperature Sensor

Sensor	Several thermistors or RTD's 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 158 °F) Platinum RTD's: $\pm 0.3^\circ\text{C}$ ( $\pm 0.54^\circ\text{F}$ ) @ 0°C (32°F) Nickel RTD's: $\pm 0.4^\circ\text{C}$ ( $\pm 0.72^\circ\text{F}$ ) @ 0°C (32°F)

### Setpoint Adjustment

Type	Up/Down pushbuttons for $\pm 10$ resistive steps
Range	Several resistive ranges available - See ordering information
Midpoint	Programmable, 20-23 °C or 68-73 °F
LCD Increment	Setpoint step size is 0.5 °C or 1.0 °F
Action	Programmable: direct or reverse acting

### LCD Display

Display Range	0 – 35° C/32 – 95° F (Jumper selectable)
Display Resolution	0.5° C/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	°C, °F, OCC
Backlight	Programmable: On, Off or Auto

### Manual Override

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

### Occupied Input

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

### 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 $\Omega$ Custom ranges available, contact Greystone

# TSPC - ROOM TEMPERATURE SENSOR:

## PRODUCT ORDERING INFORMATION:

MODEL	Product Description
TSPC	Room Temperature Sensor w/ Setpoint Adjustment & LCD

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	Resistance Output (Range 16-26°C in 0.5°C Increments or 60-80°F in 1°F Increments)
P	0 - 10,000 ohms
P1	20,000 - 30,000 ohms
P2	2000 - 3000 ohms
P3	0 - 20,000 ohms
P4	4000 - 2000 ohms
P5	0 - 2000 ohms
P6	8000.7 - 3107.3 ohms

CODE	Options
E	4 Pin molex external jack for communications
S	Exposed override switch with LCD indication option (OCC)
F	5 position fan switch Off/Auto/Low/Med/High

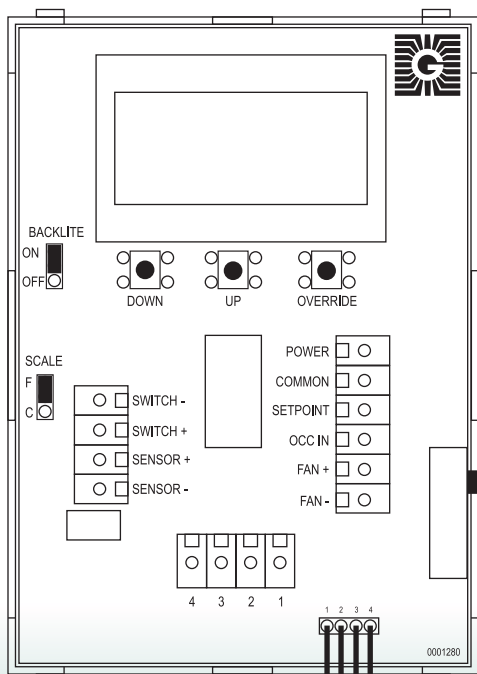
  

TSPC	7	P	S	F
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Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.

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

## PCB/WIRING INFORMATION



### Terminal

### Function

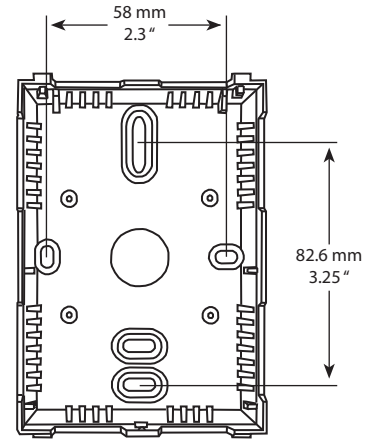
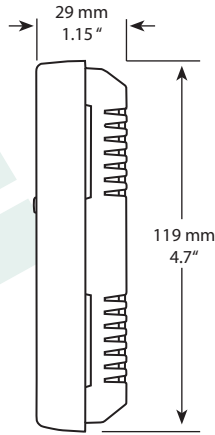
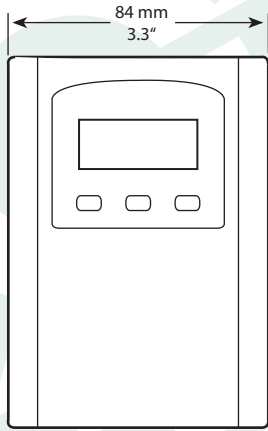
SWITCH -	GND or COMMON
SWITCH +	Digital output
SENSOR +	Resistance output
SENSOR -	GND or COMMON
POWER	Power input
COMMON	GND or COMMON
SETPOINT	Resistance Output
OCC IN	Vdc input (5 Vdc)
FAN +	Resistance output
FAN -	GND or COMMON
1	To External Jack PIN 1
2	To External Jack PIN 2
3	To External Jack PIN 3
4	To External Jack PIN 4

\* Some models do not have all these features

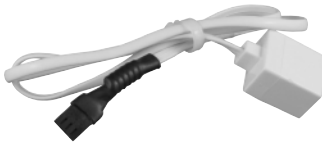
\*\*To save on number of connection wires, all GND or COMMON may be connected together.

\*\*\*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.



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ENERGY SYSTEMS INC  
Greystone Energy Systems, Inc.

**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.*

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