SIEMENS

Room Temperature Sensors, Series 1000 and Series 2000 (Interactive)

Figure 1. Room Temperature Sensor--Series 1000 shown with all available options.

The **Series 1000** and **Series 2000** Room Temperature Sensors from Siemens Building Technologies, Inc., offer a wide range of features and functionality that work in concert with the APOGEE® Automation System to deliver exceptional occupant comfort in even the most demanding application environments. The product family range includes plain sensing only variants, and fully interactive types with a two line LCD that permits viewing and modification of controller points directly from the sensor's keypad and display. All sensors incorporate precision temperature sensing elements to accurately and reliably measure room temperature. Their compact, low profile design results in an attractive, inconspicuous installation. A styled ventilation ring optimizes airflow through the cover for fast measurement response and superior control.

Series 1000

The **Series 1000** Room Temperature Sensor provides accurate, reliable sensing of room temperature Terminal Equipment Controllers (TECs), Modular Building Controllers (MBCs), Remote Building Controllers (RBCs), Unitary Controllers (UCs) and Modular Equipment Controllers (MECs).

TEC Applications

Room temperature sensors for TEC applications incorporate a thermistor element and plug-in Portable Operator's Terminal port located on the bottom of the cover. The plug-in Portable Operator's Terminal port provides a convenient means of communicating with the TEC to command or troubleshoot the system. These sensors connect to TECs via a six-wire cable terminated with a plug-in RJ-11 connector. The cable transmits the temperature, communication with the Portable Operator's Terminal, and the optional set point and override signals.

MBC, RBC, UC, MEC Applications

Room temperature sensors for MBC, RBC and UC applications incorporate a platinum RTD element. Connections to field panels are made via 18 to 22 AWG twisted pair cabling. A conveniently located unpluggable termination block simplifies both installation and service.

Optional Features

- Digital temperature display: The digital temperature display provides an easy-to-read room temperature value in degrees Fahrenheit or Celsius.
- Set point adjustment: The high accuracy set point adjustment incorporates dual temperature scale indication and an access door that covers the set point adjustment switch.
- Override button: The flush mounted override button allows an occupant to change to an occupied control schedule during the unoccupied cycle for a predetermined time period.
- Maintenance free: These sensors draw a small amount of power directly from the controller and do not use batteries. This eliminates the cost of battery replacement and disposal. Specifications (Series 1000)

Specifications (Series 1000)

Temperature Range	
Set point	55°F to 95°F
	(13°C to 35°C)
Operating	55°F to 95°F
	(13°C to 35°C)
Output Signals	Changing resistance
Sensing Element Type	
540 Models	10K NTC Thermistor (Type II)
544 Models	1K Platinum RTD (375ALPHA)
Accuracy	
10K Ohm Thermistor	
55 - 80.6°F (13 - 27°C)	±0.5°F (±0.3°C)
80.6 - 95°F (27 - 35°C)	±1.0°F (±0.5°C)
1,000 Ohm RTD MID-RANGE	
75°F (24°C)	±0.75°F (± 0.4°C) ∗
Calibration Adjustments	None required
Installation	
TEC	100 ft. Maximum Cable Length.
	6C # 24 AWG, Belden 1228A or equal, NEC Class 2
MBC/RBC/UC/MEC	300 to 750 ft.
	Max. Cable Length 18 to 22 AWG twisted pair NEC Class 2
Installation Adjustments	None required
Cover	
Dimensions	3-11/32" H x 2-1/2" W x 1-1/2" D
	(85 mm x 63 mm x 38 mm)
Color	Desert Beige or White

∗For the accuracy at temperatures other than at the mid-range use the Sensor Accuracy Tool on Landscape

Figure 2. Room Temperature Sensor--Series 2000.

Series 2000

The **Series 2000** Room Temperature Sensors provide an interactive digital link to Terminal Equipment Controllers (TECs) that allows viewing and adjustment of controller points directly from the sensor's liquid crystal display and keypad. These sensors incorporate a precision thermistor to accurately and reliably measure room temperature.

Standard Features

Programmable Liquid Crystal Display (LCD): A two-line alphanumeric LCD allows simultaneous display of room temperature, a user-selected "critical" point, and day/night operation status. Users may configure the screen to:

− show English or metric units,

− turn the room temperature display on or off,

− select a critical point for display, or

− turn off the critical point display.

- Digital set point adjustment: The sensor's keypad allows error-free digital set point adjustments in one-degree increments. Set point values momentarily display as changes are made.
- Display of operating mode: Graphic symbols are displayed to indicate the controller's operating mode. A "sun" indicates occupied mode operation and a "moon" indicates night mode operation.
- Override button: A flush-mounted override button allows user to change to an occupied control schedule during the unoccupied cycle for a period of time determined by the system operator.

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Passkey security: A special hardware passkey plugs into the sensor's MMI port to allow access to the display configuration menu and the controller's point database.

- Backward compatibility: These sensors are backward compatible with all TECs. The sensors are wired with six-conductor phone cables and standard RJ-11 connectors.
- Maintenance free: These sensors draw a small amount of power directly from the controller and do not use batteries. This eliminates the cost of battery replacement and disposal.

Specifications (Series 2000)

Effective Sensing and Set Point Range

(TEC)	55°F to 95°F (13°C to 35°C)
Output Signals	Changing resistance
Room temperature	Changing resistance
Set point	Digital
Thermistor Calibration Point (TEC)	77°F (25°C)
Accuracy	
10K Ohm Thermistor	
55 - 80.6°F (13 - 27°C)	±0.5°F (±0.3°C)
80.6 - 95°F (27 - 35°C)	±1.0°F (±0.55°C)
Resistance value	10K Ω ohms
Calibration	None required
Installation	
TEC	100 ft. Maximum Cable Length 6C # 24 AWG, NEC Class 2
Installation Adjustments	None required
Cover	
Dimensions	3-11/32" H x 2-1/2" W x 1-1/2" D
	(85 mm x 63 mm x 38 mm)
Color	Desert beige or white

Product Ordering Information

TEC Description	Product Part Number
Series 1000	
Sensing only	540-660[1]
Sensing with override	540-662[1]
Sensing with set point	540-664[1]
Sensing with temperature display	540-666[2]
Sensing with override, set point	540-670[1]
Sensing with override, temperature display	540-672[2]
Sensing with set point, temperature display	540-676[2]
Sensing with override, set point, temperature and critical point display, interactive	540-680[2]
Series 2000	
TEC Sensor	540-650[1]
MBC/RBC/UC/MEC Description	**Product Part Number**
Series 1000	
Sensing only	544-760[1]
Sensing with override	544-762[1]
Sensing with set point	544-764[1]
Sensing with temperature display	544-766[2]
Sensing with override, set point	544-770[1]
Sensing with override, temperature display	544-772[2]
Sensing with set point, temperature display	544-776[2]
Sensing with override, set point, temperature display	544-780[2]

[1] Add letter suffix to indicate desired color: A=Desert Beige, B=White (e.g., 540-660A).

[2] Add letter suffix to indicate temperature display units and color: F=°F, C=°C, A=Desert Beige, B=White (e.g., 540-680FA).

Accessories Ordering Information

Description	Product Part Number
Passkey for Series 2000 Room Temperature Sensors	544-643
Single Adapter Base Kit (White)	544-782B
Single Adapter Base Kit (Beige)	544-782A
Double Adapter Base Kit (White)	544-783B
Double Adapter Base Kit (Beige)	544-783A
Extender Ring Kit (White)	544-785B
Extender Ring Kit (Beige)	544-785A
Non-Conduit Rough-In Kit	544-784
Series 2000 (Interactive) Room Temperature Sensors, User Guide	129-363
Sensor Power Supply Module (for MBC applications with digital display option)	PTX6.4SPS
Available with vinyl or plenum jacket in 25', 50', and 100' lengths. Contact your local Siemens Building Technologies, Landis Division field office for more information.	TEC room sensor cables (6 conductor w/RJ-11 connectors on each end)