For Residential and Commercial Applications

Job Name _____   Contractor _____

Job Location _____   Approval _____

Engineer _____   Contractor's P.O. No. _____

Approval _____   Representative _____

SunStat® Connect

Wi-Fi Programmable Touchscreen Thermostat

This all-in-one thermostat includes a built-in relay to control 120 or 240 VAC floor heating systems and a GFCI to improve safety. By default, the SunStat Command controls the floor temperature. It can optionally limit the floor temperature to prevent the space from overheating, or be configured to control the space through air temperature alone.

Specifications

| Literature	IOM-ST-Connect, ES-ST-Connect
Operation Voltage	120/240 VAC, 60 Hz, 3 watts
Maximum Load	15 amps resistive
Maximum Power	1800 watts at 120 VAC 3600 watts at 240 VAC
GFCI	Class A (5 milliamp trip)
Dimensions	4-5/8" H x 2-19/20" W x 1-13/20" D (118 x 75 x 42 mm)
Enclosure	White PVC plastic, NEMA type 1
Ambient conditions	32 to 86°F (0 to 30°C), <90% RH non-condensing
Floor Sensor	Thermistor, 10k NTC type, 300 V jacketed cable, 15' long

Floor Sensor   SunStat Connect

Features

- Floor and air sensing control
- Remote access via mobile app or web
- Wi-Fi data encryption
- Remote software upgrade capability
- Email alerts
- Touchscreen display with multiple color themes
- Outdoor temperature and weather display
- Weather compensation
- Warm weather shut down feature
- Thin profile with removable, paintable beauty ring
- 7-day programmable schedules
- Energy use monitoring
- Comprehensive help screens
- Home automation system tie-in
- Temporary hold setting
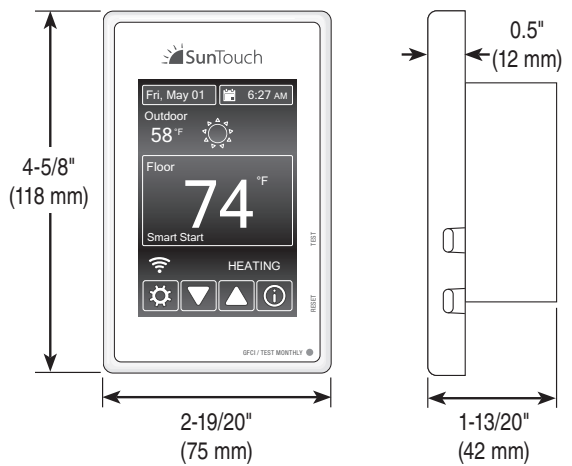
UL Listed under UL 943, UL 873, UL 991
Listing file number E365015.

4-5/8"
(118 mm)

2-19/20"
(75 mm)

0.5"
(12 mm)

1-13/20"
(42 mm)

⚠ CAUTION

This Engineering Sheet is not intended to provide full installation instructions and safety information. In order to avoid property damage or injury, please refer to the complete installation manual and product safety information provided with the product.

Product Options

Qty	Description	Model#	Order#
	SunStat Connect Thermostat	500875-SB	81019075
	Extra Floor Sensor (optional)	500110	81009178

SunTouch®
electric floor heating & snow melting
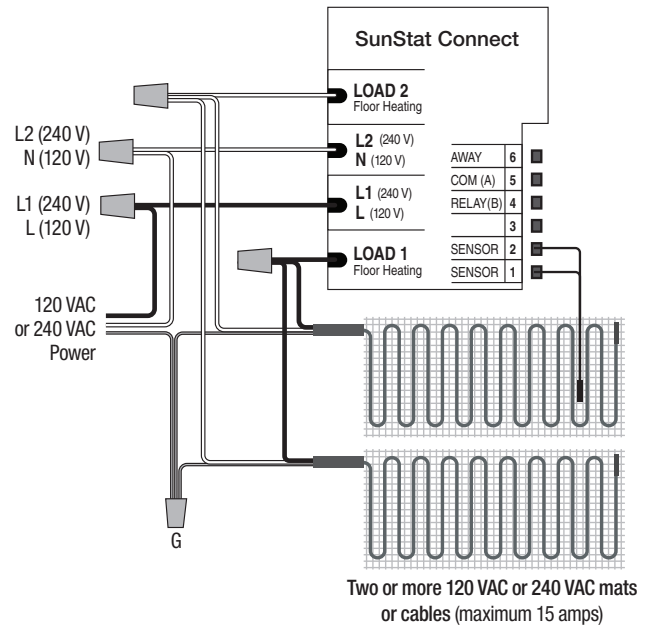
SunStat Connect Application Examples

Typical Wiring for SunStat Connect with one mat or cable (120/240 VAC).

Dedicated 120 or 240 VAC, 20-amp (maximum) circuit (maximum 15 amp load through SunStat control)

SunStat Connect

LOAD 2
Floor Heating

L2 (240 V)
N (120 V)

L2 (240 V)
N (120 V)

AWAY 6
COM (A) 5
RELAY(B) 4
3

L1 (240 V)
L (120 V)

L1 (240 V)
L (120 V)

SENSOR 2
SENSOR 1

120 VAC
or 240 VAC
Power

LOAD 1
Floor Heating

G

120 VAC or 240 VAC mat or cable
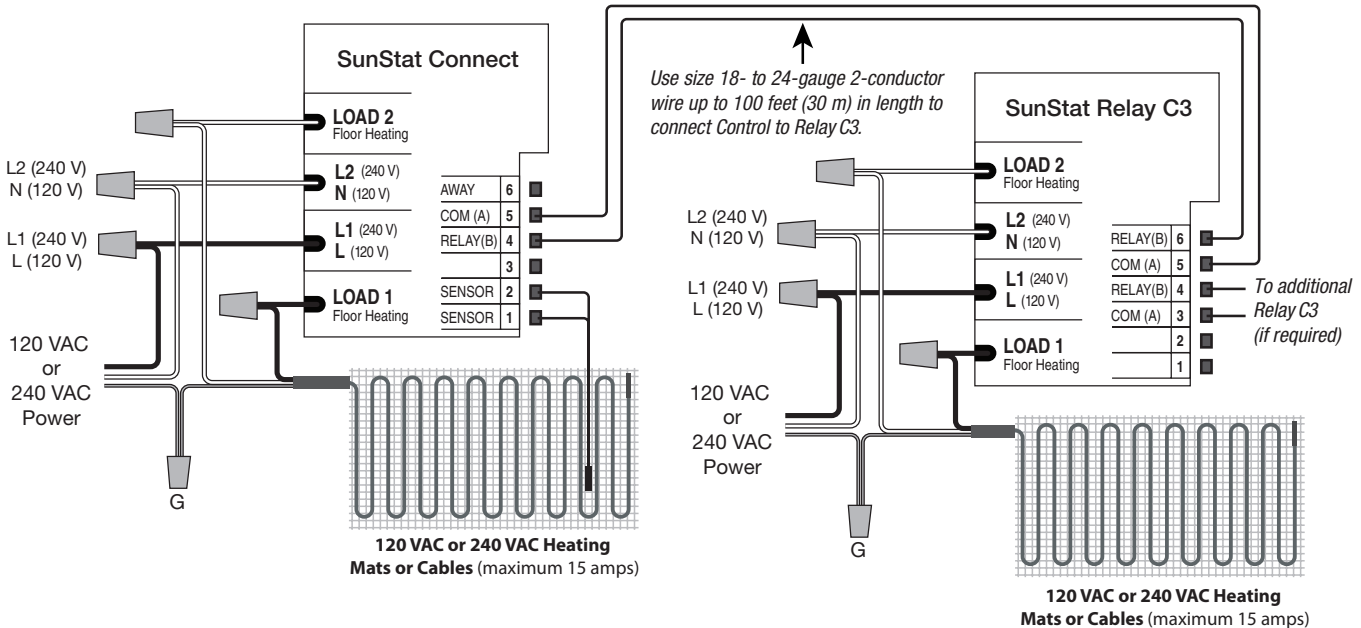(maximum 15 amps)
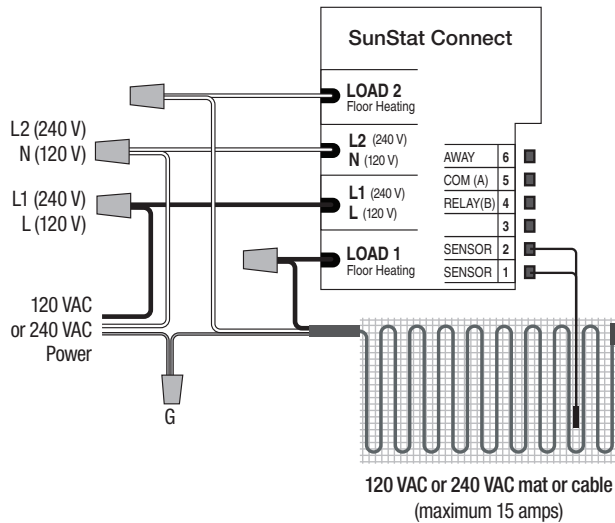
Typical Wiring for SunStat Connect with multiple mats or cables (120/240 VAC).

Dedicated 120 or 240 VAC, 20-amp (maximum) circuit (maximum 15 amp load through SunStat control)

SunStat Connect

LOAD 2
Floor Heating

L2 (240 V)
N (120 V)

L2 (240 V)
N (120 V)

AWAY 6
COM (A) 5
RELAY(B) 4
3

L1 (240 V)
L (120 V)

L1 (240 V)
L (120 V)

SENSOR 2
SENSOR 1

120 VAC
or 240 VAC
Power

LOAD 1
Floor Heating

G

Two or more 120 VAC or 240 VAC mats or cables (maximum 15 amps)

Electrical Wiring Diagram for SunStat Connect with SunStat Relay C3 (120/240 VAC). Up to 10 SunStat Relay C3's can be connected to expand the area controlled by a single SunStat Connect.

Dedicated 120 or 240 VAC, 20-amp (maximum) circuit (maximum 15 amp load through SunStat control)

SunStat Connect

LOAD 2
Floor Heating

L2 (240 V)
N (120 V)

L2 (240 V)
N (120 V)

AWAY 6
COM (A) 5
RELAY(B) 4
3

L1 (240 V)
L (120 V)

L1 (240 V)
L (120 V)

SENSOR 2
SENSOR 1

120 VAC
or
240 VAC
Power

LOAD 1
Floor Heating

G

120 VAC or 240 VAC Heating Mats or Cables (maximum 15 amps)

Use size 18- to 24-gauge 2-conductor wire up to 100 feet (30 m) in length to connect Control to Relay C3.

SunStat Relay C3

LOAD 2
Floor Heating

L2 (240 V)
N (120 V)

L2 (240 V)
N (120 V)

RELAY(B) 6
COM (A) 5

L1 (240 V)
L (120 V)

L1 (240 V)
L (120 V)

RELAY(B) 4
COM (A) 3

120 VAC
or
240 VAC
Power

LOAD 1
Floor Heating

2
1

To additional Relay C3 (if required)

G

120 VAC or 240 VAC Heating Mats or Cables (maximum 15 amps)

SunTouch®
electric floor heating & snow melting

A Watts Water Technologies Company