SE3000 Wall-mount Temperature Sensors

For Commercial HVAC Applications

CONTENTS

Schneider Electric

PRODUCT OVERVIEW

Schneider Electric's 10K ohm NTC Type II remote wall-mount sensors are for use with the SE7000 series communicating controllers and other devices requiring a 10K ohm NTC Type II sensor. These robust sensors provide accurate and stable temperature readings using a reliable thermistor element.

The SE3000 sensors also may be used for temperature averaging applications. Two or three sensors can be employed and are quickly configured with on-board DIP switches. Temperature averaging with the usual 4, 9, 16, 25, etc. sensors also may be implemented with the sensors. See the table below for specific model numbers.

MODELS AVAILABLE

Model	Description	Application	Picture
SE3010W1045	Room sensor	• Remote room sensing • 3 thermistors with 2 dip switches are provided with each sensor for various averaging combinations	
SE3020W1045	Room sensor with temporary override key and occupancy LED	• Remote room sensing with override key and occupancy LED • 3 thermistors with 2 dip switches are provided with each sensor for various averaging combinations	

INSTALLATION

Location
- Do not install on an outside wall.
- Install away from any direct heat source.
- Do not install near an air discharge grill.
- Do not locate in direct sun radiation.
- Nothing should restrict vertical air circulation to the sensor.

Installation Procedure
1. Remove the security screw on the bottom of the sensor cover.
2. Open the unit by pulling on the bottom side of the sensor (Figure-1).
3. Pull the cables 6" out from the wall.
4. The wall surface must be flat and clean.
5. Insert the cable into the central hole of the base.
6. Unlock and swing the circuit board to access the mounting hole (Figure-2).
7. Align the base and mark the location of the two mounting holes on the wall. Install the proper side of the base upward.
8. Install screw anchors in the wall.
9. Insert screws in the mounting holes on each side of the base (Figure-2).
10. Gently swing back the circuit board on the base and push on it until the tabs lock it.
11. Strip each wire 1/4 inch from the end.
12. Insert each wire according to the wiring diagram.
13. Gently push excess wiring back into the hole in the base.
14. Reinstall wiring terminals in their correct locations.
15. Reinstall the cover (top side first) and gently push any extra wire length back into the hole in the wall.
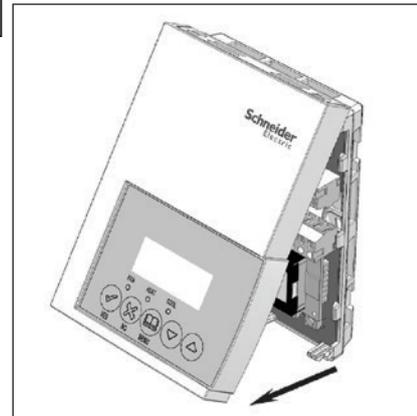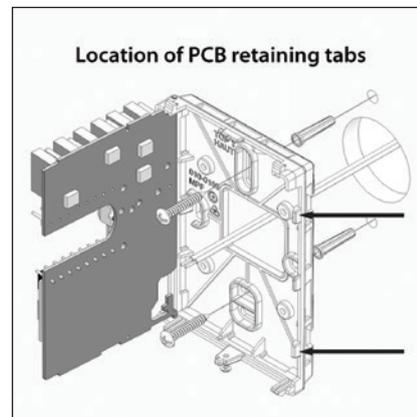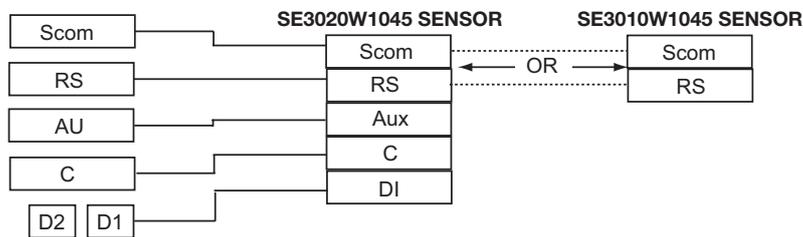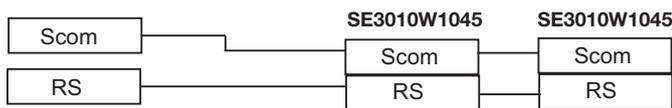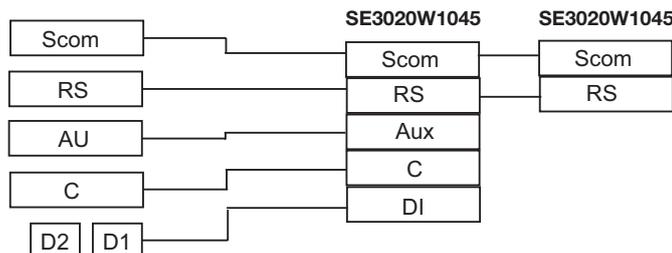16. Install the security screw.

Figure-1 Opening the Cover

Location of PCB retaining tabs

Figure-2 Opening the PCB

TEMPERATURE SENSOR WIRING

Single Sensor

Scom		**SE3020W1045 SENSOR**		**SE3010W1045 SENSOR**	
RS		Scom		Scom	
AU		RS	← OR →	RS	
C		Aux			
D2 D1		C			
		DI			

Two Sensor Averaging Application

		SE3020W1045	**SE3010W1045**
Scom		Scom	Scom
RS		RS	RS
AU		Aux	Aux
C		C	C
D2 D1		DI	DI

		SE3020W1045	**SE3020W1045**
Scom		Scom	Scom
RS		RS	RS
AU		Aux	
C		C	
D2 D1		DI	

		SE3010W1045	**SE3010W1045**
Scom		Scom	Scom
RS		RS	RS
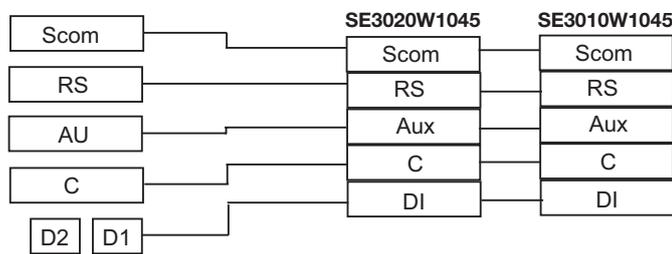
Three Sensor Application

		SE3010W1045	**SE3010W1045**	**SE3020W1045**
Scom		Scom	Scom	Scom
RS		RS	RS	RS
AU		Aux		
C		C		
D2 D1		DI		

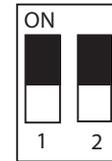|		**SE3010W1045**	**SE3010W1045**	**SE3010W1045**
Scom		Scom	Scom	Scom
RS		RS	RS	RS
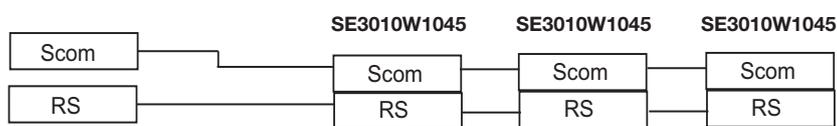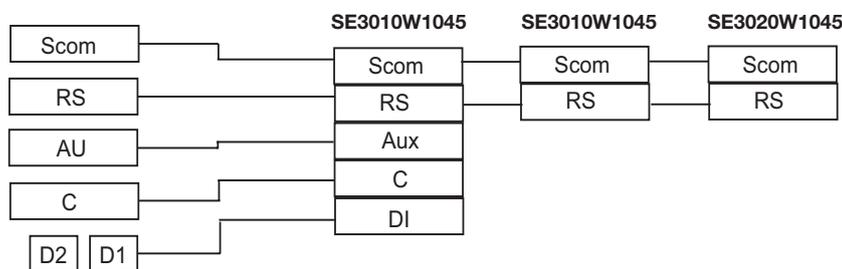
Temp. Sensor DIP Switch Settings
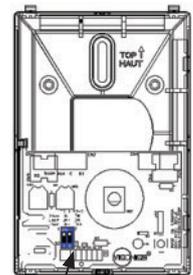

One Sensor:
S2-1 = ON
S2-2 = ON

Two Sensors, averaging:
S2-1 = OFF
S2-2 = ON

Three Sensors:
S2-1 = OFF
S2-2 = OFF

SE3020W1045
Remote temperature sensor DIP switch location

Temperature vs. resistance chart for 10 Kohm NTC thermistor

°C	°F	Kohm
-40	-40	324.3197
-35	-31	234.4009
-30	-22	171.3474
-25	-13	126.6109
-20	-4	94.5149
-15	5	71.2430
-10	14	54.1988
-5	23	41.5956
0	32	32.1910
5	41	25.1119
10	50	19.7390
15	59	15.6286
20	68	12.4601
25	77	10.0000
30	86	8.0694
35	95	6.5499
40	104	5.3467
45	113	4.3881
50	122	3.6202
55	131	3.0016

($R_{25°C}$ = 10KΩ±3%, B25/85°C = 3975K±1.5%)

SPECIFICATIONS

General for all sensors

Sensor type	10 K Ohm NTC thermistor Type II
Maximum wire length	5,000 feet [1,525 m] for 24 GA wire and up

Room sensors (SE3010W1045 and SE3020W1045)

Operating conditions	0 °C to 50 °C (32 °F to 122 °F) 0% to 95% R.H. non-condensing
Storage conditions	-30 °C to 50 °C (-22 °F to 122 °F) 0% to 95% R.H. non-condensing
Dimensions	4.94" [125 mm] high; 3.38" [86 mm] wide; 1.13" [29 mm] thick
Approximate shipping weight	0.34 lbs (155 grams)
Enclosure plastic type	ABS - FRI [WT1337V] UV stabilized
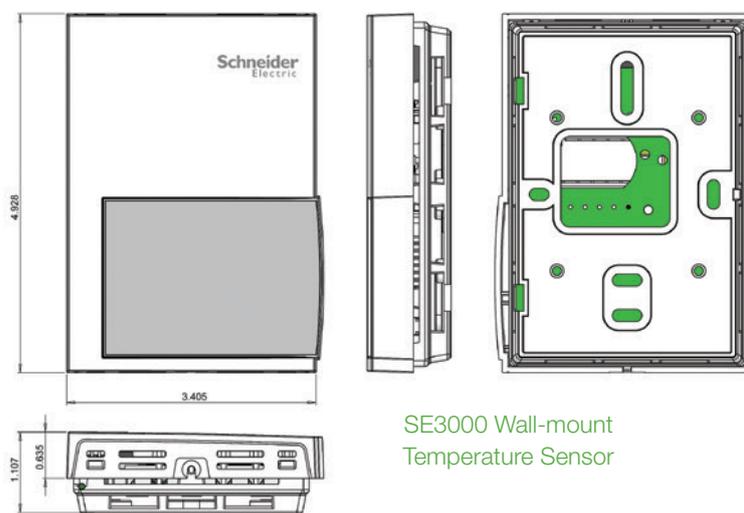
SE3000 Wall-mount
Temperature Sensor

NOTICE

All SE3000 series sensors are for use as operating controls only and are not safety devices. These instruments have undergone rigorous tests and verifications prior to shipment to ensure proper and reliable operation in the field. Whenever a control failure could lead to personal injury and/or loss of property, it becomes the responsibility of the user / installer / electrical system designer to incorporate safety devices (such as relays, flow switch, thermal protections, etc.) and/or alarm system to protect the entire system against such catastrophic failures. Tampering with or miss application of the devices will void the warranty.