SE7600F Series

Installation Guide for RTU with Modulating Heat

CONTENTS

Schneider Electric

INSTALLATION

Inspection

- Remove security screw on bottom of Room Controller cover.
- Open unit by pulling on bottom side of Room Controller (Figure-1).
- Remove wiring terminals from sticker.
- Read the FCC ID and IC label installed in the cover.

Location

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

Installation

1. Swing open Room Controller PCB to the left by pressing two PCB retaining tabs (Figure-2).
2. Pull cables 6" out from wall.
   Ensure wall surface is flat and clean.
3. Insert cable into central hole of base.
4. Align base and mark location of two mounting holes on wall ensuring proper side of base is upward.
5. Install screw anchors in wall.
6. Insert screws in mounting holes on each side of base (Figure-2).
7. Gently swing back circuit board on base and push until tabs lock.
8. Strip each wire 1/4 inch from end.
9. Insert each wire according to wiring diagram.
10. Gently push excess wiring back into hole in base.
11. Reinstall wiring terminals in correct locations (Figure-3).
12. Reinstall cover (top side first) and gently push any extra wire length back into hole in wall.
13. Install security screw.

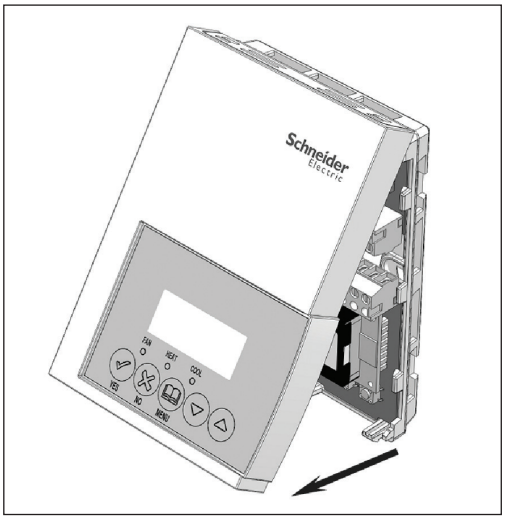


Figure-1 Opening the Cover

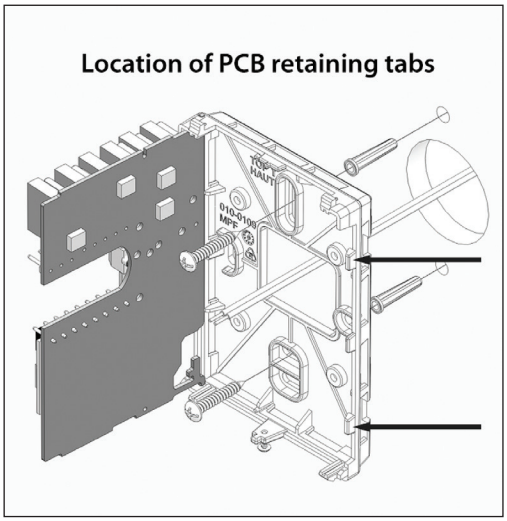


Figure-2 Opening the PCB

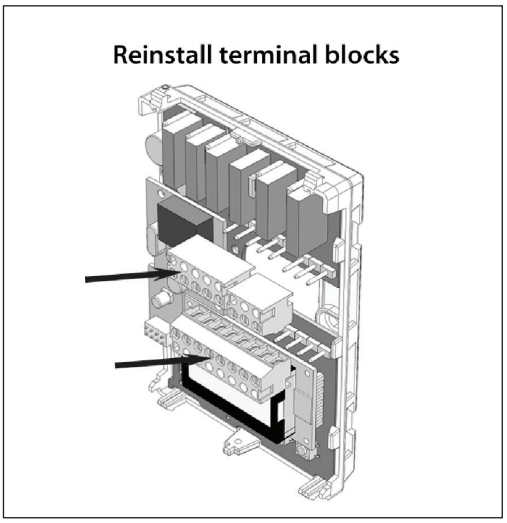


Figure-3 Terminal Block Reinstall

- If replacing an existing Room Controller, label wires before removal of Room Controller.
- Electronic controls are static sensitive devices. Discharge yourself properly before manipulating and installing Room Controller.
- A short circuit or wrong wiring may permanently damage the Room Controller or the equipment.
- All SE7000 series Room Controllers are designed for use as operating controls only and are not safety devices. These instruments have undergone rigorous tests and verification prior to shipping 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) and/or an alarm system to protect the entire system against such catastrophic failures. Tampering with the devices or unintended application of the devices will result in a void of warranty.

NETWORK READY

- All Schneider Electric SE7600 series Room Controllers (TEC) are designed for stand-alone (Network Ready) operation.
- They can be fully integrated into your choice of automation systems using the available communication adapter options.
- If required, stand-alone (Network Ready) TECs can be field retrofitted with the following communication adapters:
  - VCM7000V5045W wireless Zigbee® communication adapter.
  - VCM7600V5045B BACnet® MS-TP® communication adapter.

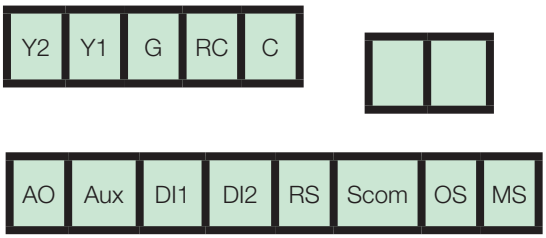
TERMINAL IDENTIFICATION

Terminal Use	Terminal Identification	Description
1 – Y2 2nd cooling	Y2	Second cooling stage output.
2 – Y1 1st cool	Y1	First cooling stage output.
3 – G Fan	G	Fan output.
4 – RC 24VAC hot	RC	Power supply of thermostat, hot side.
5 – C 24VAC com	C	Power supply of thermostat, common side.
9 – AO analog heat	AO	Analog 0 – 10 VDC heating output.
10 – Auxiliary output	AUX	Auxiliary output used to disable economizer minimum position or control lighting during unoccupied periods.
11 – DI 1	DI 1	Configurable extra digital input. See parameter section for more information.
12 – DI 2	DI 2	Configurable extra digital input. See parameter section for more information.
13 – RS	RS	Remote temperature sensor input.
14 - Scom	Scom	Reference input for DI 1, RS, OS & DS.
15 - OS	OS	Outside air temperature sensor input.
16 - DS	MS	Discharge air temperature sensor input.

MAIN OUTPUTS WIRING

Screw Terminal Arrangement

SE76XXF Controller Terminals



Wiring Notes

Note 1
If the same power source is used for the heating stages, install a jumper across terminals RC and RH. The maximum current is 2.0 amps.

Note 2
If the auxiliary output is used to toggle occupancy of the electronic control card inside the equipment, configure the relay parameter (Aux cont) to the N.O. setting. A second relay can be added for additional functionality of the occupancy output.

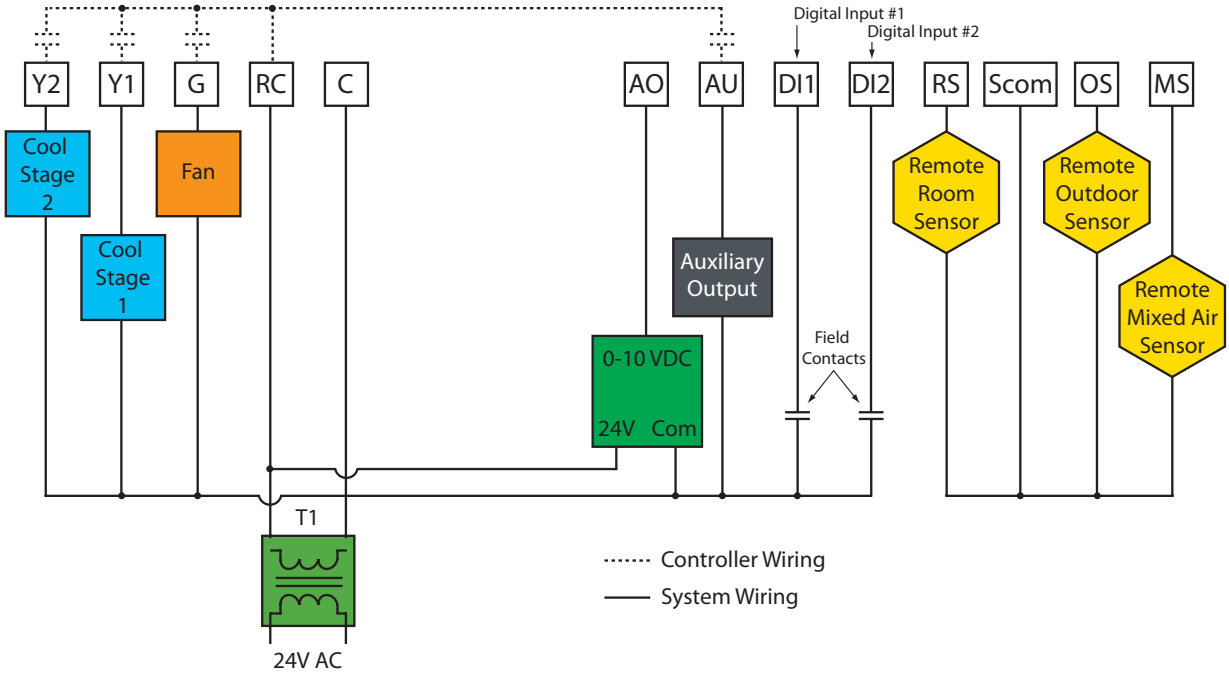
Note 3
Economizer output uses a half-bridge rectifier. Reference of the control signal is the Common (Terminal C) of the power supply of the Room Controller.

Note 4
Electromechanical contacts are to be used with the digital inputs. Electronic triacs cannot be used as a means of switching for the input. The switched leg to the input for the input to activate is the Common (Terminal C).

Note 5
The transformer of the unit provides power to the Room Controller and the additional loads that will be wired to the Room Controller.

TYPICAL APPLICATIONS

Main Outputs Wiring



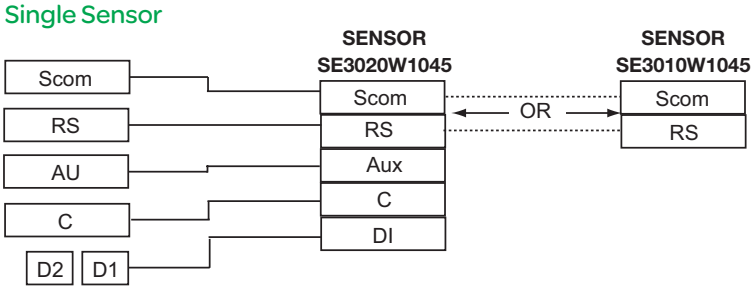
REMOTE SENSOR ACCESSORIES

Applicable Models

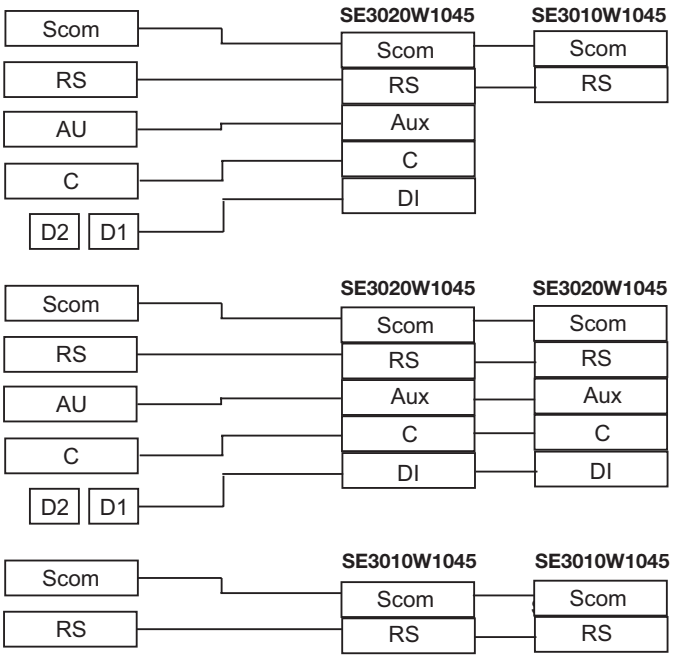
Model	Description	Application	Picture
SE3010W1045	Room sensor	• Remote room sensing • 3 thermistors with 2 dip switches are provided with each sensor for various averaging combinations	
SE3020W1045	Room sensor with temporary override key and occupancy LED	• Remote room sensing with override key and occupancy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

REMOTE TEMPERATURE SENSORS

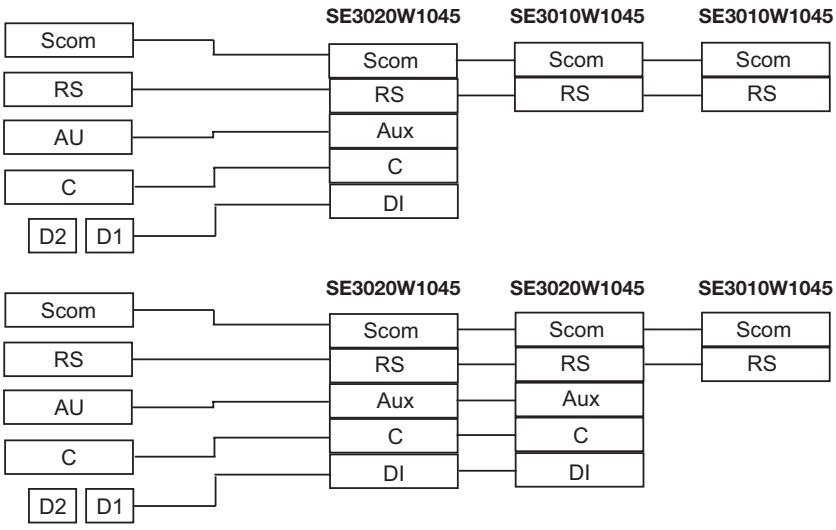
Single Sensor



Two Sensor Averaging Application



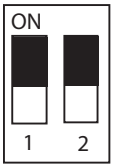
Three Sensor Application



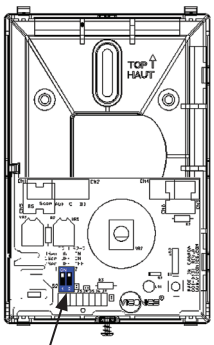
Temp. Sensor DIP Switch Settings

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%)

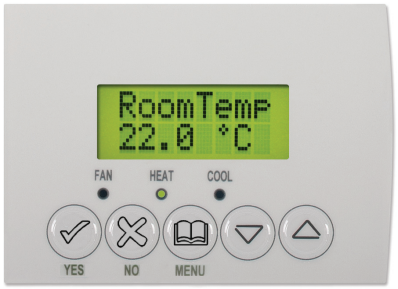
CONFIGURING / STATUS DISPLAY INSTRUCTIONS

Status Display

The Room Controller features a two-line, eight-character display. A low-level, always-active back-light can be seen only at night.

Left unattended, the Room Controller shows an auto scrolling display that indicates the status of the system. Each item is scrolled one by one with the back lighting in low level mode. Pressing any key will cause the back light to increase to high level.

Manual scrolling of each menu item is achieved by pressing the YES (scroll) key repetitively. The last item viewed will be shown on the display for 30 seconds before returning to automatic scrolling. Temperature is automatically updated when scrolling is held.



FAN	When any of the fan speeds are ON, the FAN LED will illuminate.
HEAT	When heating & reheat is ON, the HEAT LED will illuminate.
COOL	When cooling is ON, the COOL LED will illuminate.

Outdoor air temperature

- The outdoor air temperature display is only enabled when the outdoor air temperature sensor is connected.
- A maximum range status display of 50 °C (122 °F) indicates a shorted sensor. Associated functions, such as mode lockouts and economizer function are automatically disabled.
- A minimum range status -40 °C (-40 °F) indicates an open-circuited sensor or a sensor not connected. Associated functions, such as mode lockouts and economizer function are automatically disabled.

Sequence of auto-scroll status display

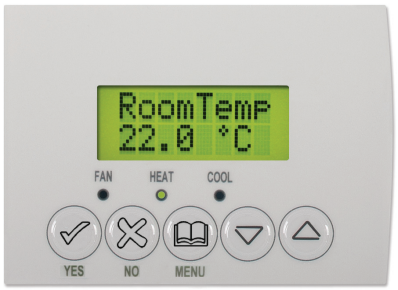
CLOCK STATUS	SYSTEM MODE	SCHEDULE STATUS	OUTDOOR TEMP.	ALARMS
Monday 12:00 AM	Sys Mode Off	Occupied	Outdoor x.x °C or °F	Service
	Sys Mode Auto	Unoccupied		DAS Alrm
	Sys Mode Cool	Override		SetClock
	Sys Mode Heat			Filter
				Fan lock
				Frost ON

Alarms

- If alarms are detected, they will be displayed automatically at the end of the status display scroll.
- During an alarm message display, the back lit screen will light up at the same time as the message and shut off during the rest of the status display.
- Two alarms maximum can appear at any given time. The priority for the alarms is as follows:

Frost ON	Indicates that the heating is energized by the low limit frost protection room temperature setpoint 5.6 °C (42 °F).
SetClock	Indicates that the clock needs to be reset. There has been a power failure which has lasted longer than 6 hours.
Service	Indicates that there is a service alarm as per one of the configurable digital inputs (DI1 or DI2).
Filter	Indicates that the filters are dirty as per one of the configurable digital inputs (DI1 or DI2).
Fan lock	Indicates that the heating and cooling action are locked out due to a fan malfunction.
DAS Alarm	Indicates that the discharge air temperature is either too low or too high.

USER INTERFACE



User Configuring Instructions Menu

The SE76X6 series of Room Controller feature an intuitive, menu-driven, back-lit LCD display that walks users through the configuring steps, making the configuring process extremely simple. This menu is typically accessed by the user to set the parameters such as temperature and time events, system mode, fan mode, etc...

It is possible to bring up the user menu at any time by pressing the MENU key. The status display automatically resumes after exiting the user-configuring menu.

If the user pauses at any given time during configuring, Auto Help text is displayed to help and guide the user through the usage and configuring of the Room Controller.

Example: Press the YES key to change the cooling temperature setpoint. Use the Up/Down Arrow keys to adjust the cooling setpoint.

Each of the sections in the menu is accessed and configured using 5 keys on the Room Controller cover.

When left unattended for 45 seconds, the display will resume automatic status display scrolling.

To turn on the back light, press any key on the front panel. The back light will turn off when the Room Controller is left unattended for 45 seconds.

Local Keypad Interface

	The **YES** key is used to confirm a selection, to move onto the next menu item and to manually scroll through the displayed information.
	The **NO** key is used when you do not desire a parameter change, and to advance to the next menu item. May also be used to toggle between heating and cooling setpoints.
	The **MENU** key is used to access the Main User Menu or to exit the menu.
	The **DOWN ARROW** key is used to decrease a temperature setpoint and to adjust the desired values when configuring the Room Controller.
	The **UP ARROW** key is used to increase a temperature setpoint and to adjust the desired values when configuring the Room Controller.

Sequence of User Menu

OVERRIDE RESUME	SYSTEM MODE SETTING	SCHEDULE SETTING	CLOCK SETTING
Override schd? Y/N (Appears only in unoccupied mode)	Sys mode set? Y/N	Schedule set? Y/N	Clock set? Y/N
Cancel ovrd? Y/N (Appears only in override mode)			