SE7600 Series

Installation Guide for HVAC Applications

CONTENTS

NOTICE

IMPORTANT NOTICE RELATED TO PRODUCT PART NUMBERS

For the latest model and part numbers, please refer to "SE8000 and SE7000 Series Room Controllers Catalog, version 10" (028-6155-10), which can be found on https://ecobuilding.schneider-electric.com.

The installation instructions provided in this document contain information on active and retired products. The latter are no longer sold by Schneider Electric or its partners.

Refer to the "7000 Series Room Controllers and Historical Offer Product Withdrawal Process (PWP) Project Product Announcement" (PA-00723) for a list of replacement part numbers, which can also be found on https://ecobuilding.schneider-electric.com.

Failure to follow these instructions can result in confusion or order delays.

Schneider Electric

SAFETY INFORMATION

Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of either symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

BEFORE YOU BEGIN

Loss of Control

⚠ WARNING

LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and over travel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of anticipated transmission delays or failures of the link.[1]
- Each implementation of equipment utilizing communication links must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

California Proposition 65

⚠ WARNING

CALIFORNIA PROPOSITION 65

This product can expose you to chemicals including Lead and Bisphenol A (BPA), which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Failure to follow these instructions can result in birth defects or other reproductive harm.

Electrostatic Discharge

NOTICE

STATIC SENSITIVE COMPONENTS

Circuit boards and option cards can be damaged by static electricity. Observe the electrostatic precautions below when handling controller circuit boards or testing components.

Failure to follow these instructions can result in equipment damage.

Observe the following precautions for handling static-sensitive components:

- Keep static-producing material such as plastic, upholstery, and carpeting out of the immediate work area.
- Store static-sensitive components in protective packaging when they are not installed in the drive.
- When handling a static-sensitive component, wear a conductive wrist strap connected to the component or drive through a minimum of 1 megohm resistance.
- Avoid touching exposed conductors and components leads with skin or clothing.

1 For additional information about anticipated transmission delays or failures of the link, refer to NEMA ICS 1.1 (latest edition), *Safety Guidelines for the Application , Installation, and Maintenance of Solid State Control* or its equivalent

Installation

NOTICE

INSTALLATION

- The system must be installed correctly by a qualified technician.
- If replacing an existing Room Controller, label wires before removal of Controller.
- Electronic controls are static sensitive devices. Discharge yourself correctly before manipulating and installing Room Controller.
- A short circuit or wrong wiring may permanently damage Room Controller or equipment.
- All 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, etc.) 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.
- This device must be installed to provide a separation distance of at least 8in (20cm) from all persons and must not be located or operating in conjunction with any other antenna or transmitter.
- Refer to the Room Controller User Interface Guide for information on how to configure the Room Controller.

Failure to follow these instructions can result in equipment damage.

Location

NOTICE

LOCATION

- Do not install on an exterior wall.
- Do not install behind a door.
- Do not install in areas with direct heat source.
- Do not install near any air discharge grill.
- Do not install in areas exposed to direct sunlight.
- Ensure Room Controller has sufficient natural air circulation.
- Ensure wall surface is flat and clean.
- Ensure external thermal sensor wirings are away from noisy electrical sources.
- Install 1.3 to 1.5 meter (52 to 60 inches) above the floor.
- Perform preventive maintenance on the damper and Variable Air Volume (VAV) box, according to the supplier documentation.

Failure to follow these instructions can result in equipment damage.

Cleaning the Room Controller

NOTICE

CLEANING THE ROOM CONTROLLER

- Use a soft, pre-moistened lint-free cloth for cleaning.
- Avoid getting moisture in openings.
- Do not spray anything directly on the Room Controller or use compressed air.
- Do not use caustic/corrosive products, ammonia, solvents or any cleaning product containing alcohol or grit.
- Never use tools directly on the touchscreen.
- Never use paint on the Room Controller.
- Do not drop or crush the Room Controller, or allow it to come into contact with liquids.
- Do not use a damaged device (such as one with a cracked screen).

Failure to comply with these recommendations will result in damage to the unit and void the manufacturer's warranty.

INSTALLATION

Preparation

- 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 FCC ID and IC label installed in cover upon removal of cover.

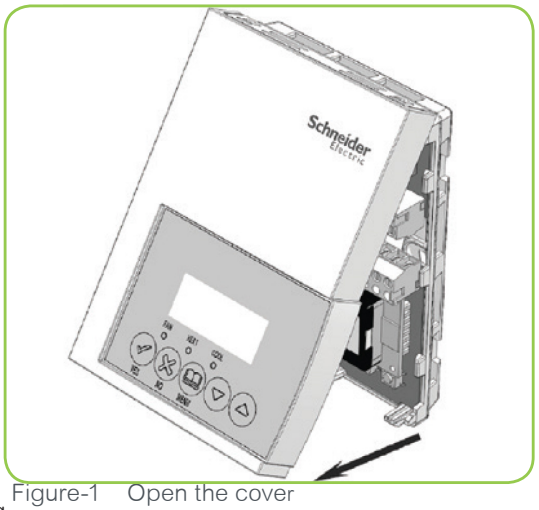


Figure-1 Open the cover

Location

1. Should not be installed on outside wall.
2. Must be installed away from any direct heat source.
3. Should not be installed near air discharge grill.
4. Should not be affected by direct sun radiation.
5. Nothing should restrict vertical air circulation to Room Controller.

Installation

1. Swing open Room Controller PCB to left by pressing PCB locking tabs (Figure 2).
2. Pull out cables 6" out from wall. Ensure wall surface is flat and clean.
3. Insert cable in central hole of base.
4. Align base and mark location of two mounting holes on wall proper side of base up.
5. Install 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 (next page).
10. Gently push excess wiring back into hole (Figure 3).
11. Re-Install wiring terminals in correct locations (Figure 3).
12. Re-install cover (top side first) and gently push extra wire length back into hole in wall.
13. Install security screw.

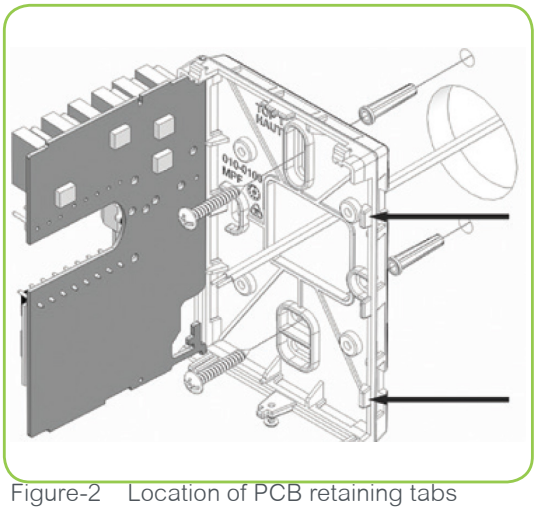


Figure-2 Location of PCB retaining tabs

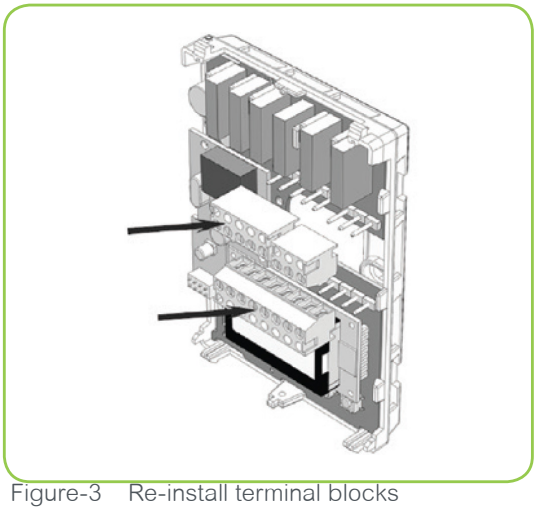


Figure-3 Re-install terminal blocks

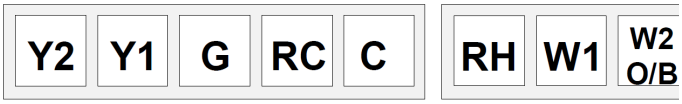
TERMINAL, IDENTIFICATION AND FUNCTION

Wiring

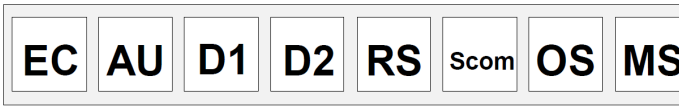
	Multistage			1H/1C				Heat Pump	
Part Number	SE7656B	SE7605B	SE7652B	SE7600B	SE7652A	SE7600A	Part Number	SE7652H	SE7600H
Schedule	Yes	No	Yes	No	Yes	No	Schedule	Yes	No
Top left terminal block							**Top left terminal block**		
Y2	X	X	X	X			Y2	X	X
Y1	X	X	X	X	X	X	Y1	X	X
G	X	X	X	X	X	X	G	X	X
RC	X	X	X	X	X	X	RC	X	X
C	X	X	X	X	X	X	C	X	X
Top right terminal block							**Top right terminal block**		
RH	X	X	X	X	X	X	RH	X	X
W1	X	X	X	X	X	X	W1	X	X
W2	X	X	X	X			O/B	X	X
Bottom terminal block							**Bottom terminal block**		
Econo	X	X							
Aux	X	X	X	X	X	X	Aux	X	X
DI1	X	X	X	X	X	X	DI1	X	X
DI2	X	X	X	X	X	X	DI2	X	X
RS	X	X	X	X	X	X	RS	X	X
Scom	X	X	X	X	X	X	Scom	X	X
OS	X	X	X	X	X	X	OS	X	X
MS	X	X	X	X	X	X	MS	X	X

Screw terminal arrangement

5 pole left top connector 3 pole left top connector



8 pole bottom connector



MAIN OUTPUTS WIRING

Wiring notes:

Note 1: If the same power source is used for the heating stages, install jumper across RC and RH. Maximum current is 2.0 amps.

Note 2: If 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 of the power supply of the Room Controller. (Terminal C)

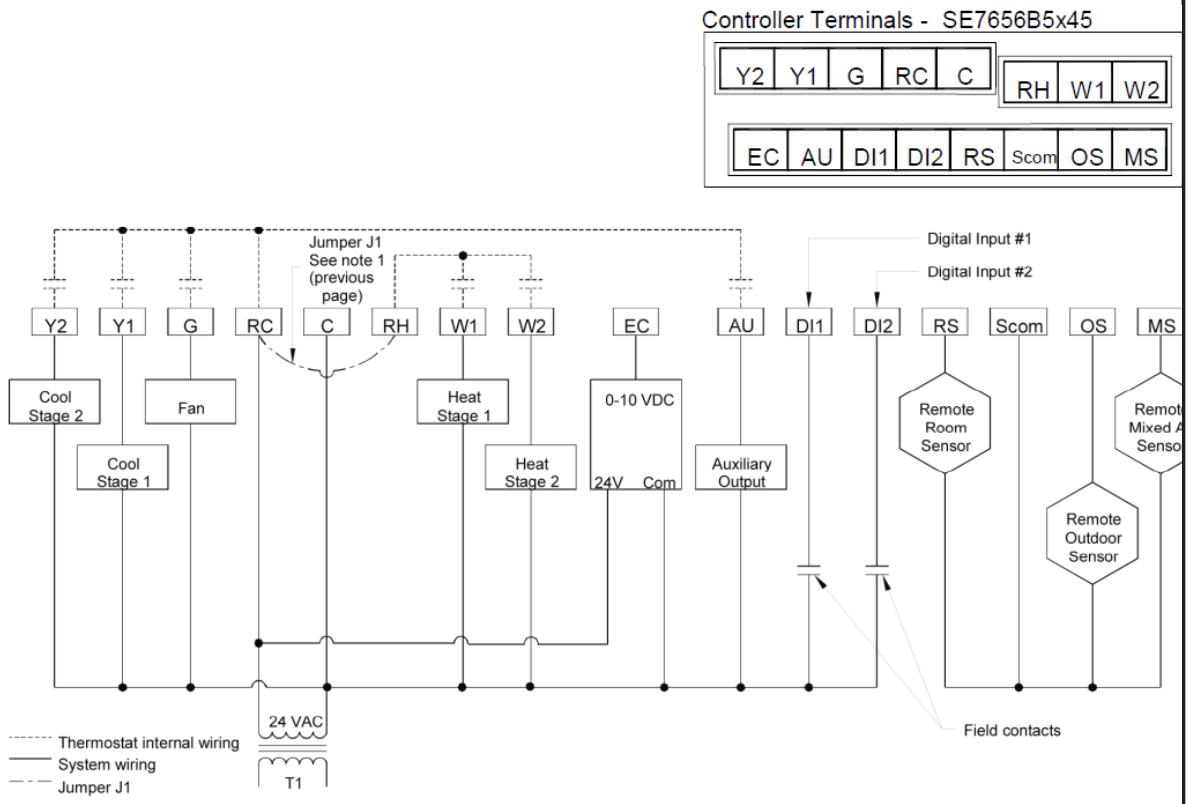
Note 4: Electromechanical contacts are to be used with the digital inputs. Electronic triacs cannot be used as mean of switching for the input. The switched leg to the input for the input to activate is terminal C (common)

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

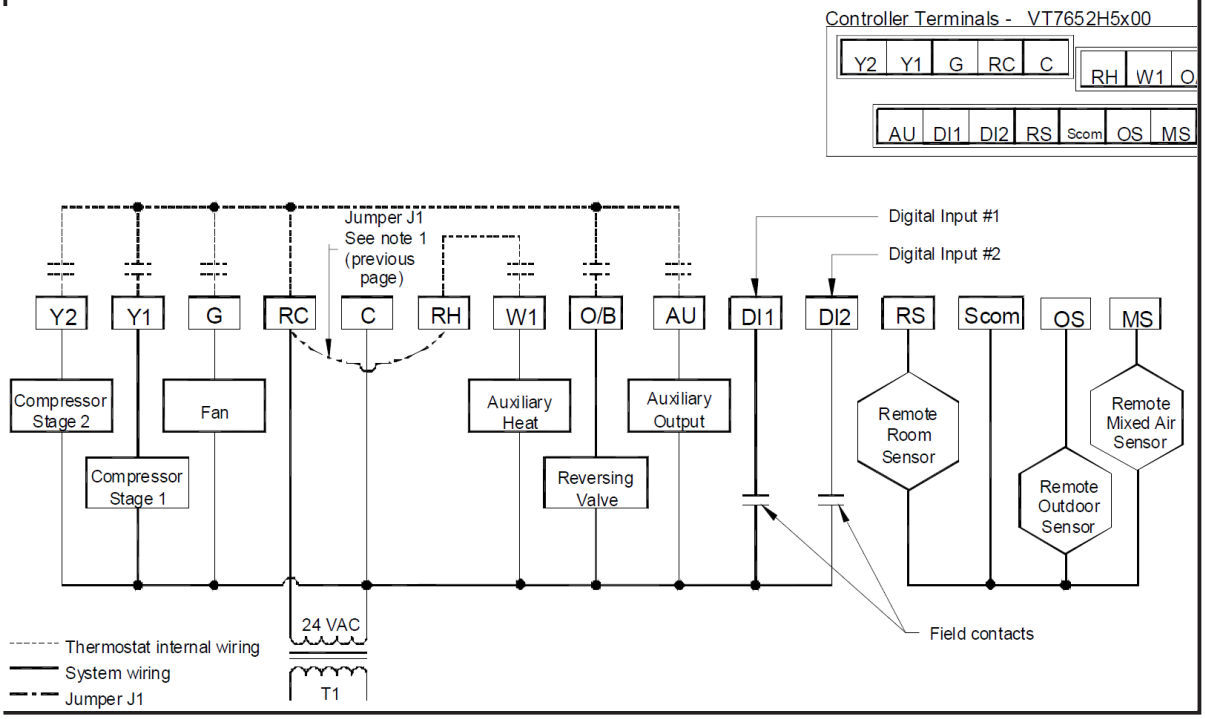
SE7656B5X45(X)

2 Heat / 2 Cool / Economizer / With Schedule



SE7652H5X45(X)

Heat pump Without Schedule



Remote sensor accessories

Model no.	Description
S3010W1000	Wall mounted temperature sensor
S3020W1000	Wall mounted temperature sensor+override button and occupancy status

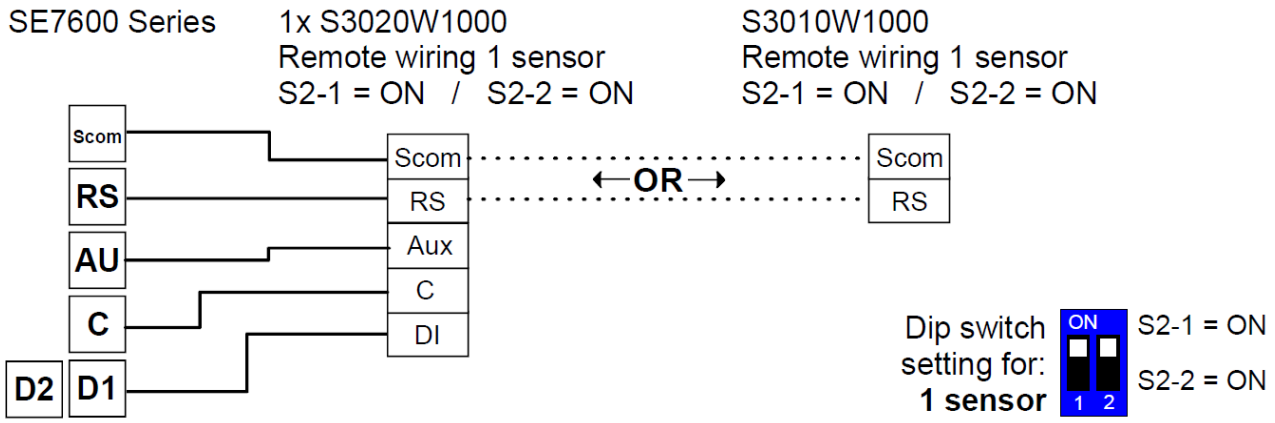
WALL MOUNTED SENSOR

Remote mount temperature sensors use 10K type 2 NTC thermistors.

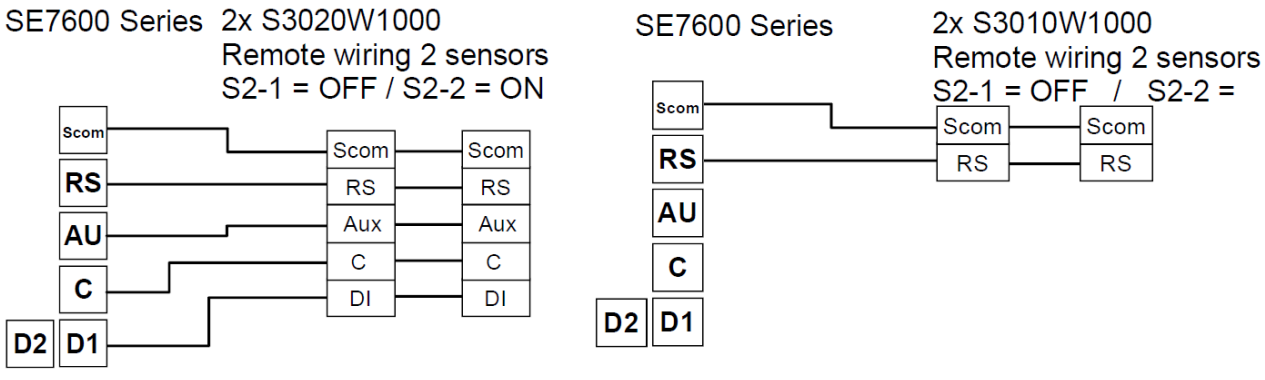
Features:

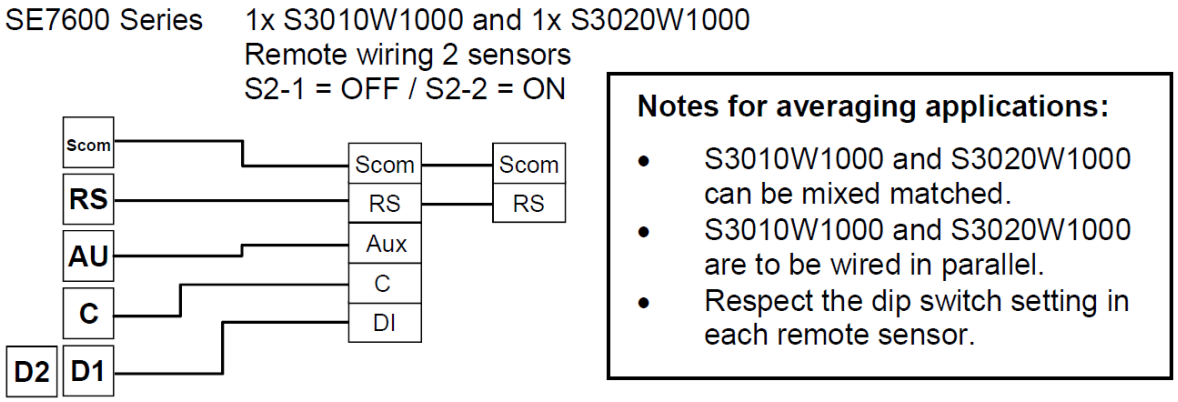
- Each sensor can be configured for various averaging combinations
- Optional occupancy led
- Optional override key

Wiring example of single remote room sensor:

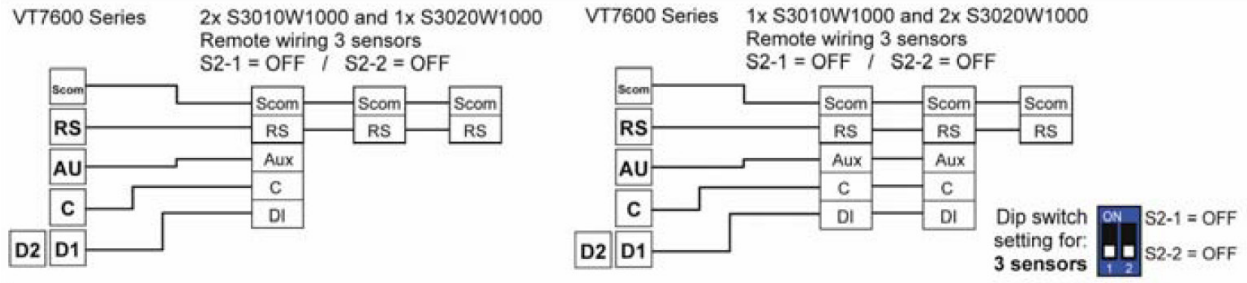


Wiring examples of 2 remote room sensors for averaging applications:





Wiring examples of 3 remote room sensors for averaging applications:



Temperature vs. resistance chart for 10 Kohm NTC thermistor

°C	°F	Kohm	°C	°F	Kohm	°C	°F	Kohm	°C	°F	Kohm	°C	°F	Kohm
-40	-40	324.3197	-20	-4	94.5149	0	32	32.1910	20	68	12.4601	40	104	5.3467
-39	-38	303.6427	-19	-2	89.2521	1	34	30.6120	21	70	11.9177	41	106	5.1373
-38	-36	284.4189	-18	0	84.3147	2	36	29.1197	22	72	11.4018	42	108	4.9373
-37	-35	266.5373	-17	1	79.6808	3	37	27.7088	23	73	10.9112	43	109	4.7460
-36	-33	249.8958	-16	3	75.3299	4	39	26.3744	24	75	10.4443	44	111	4.5631
-35	-31	234.4009	-15	5	71.2430	5	41	25.1119	25	77	10.0000	45	113	4.3881
-34	29	219.9666	-14	7	67.4028	6	43	23.9172	26	79	9.5754	46	115	4.2208
-33	-27	206.5140	-13	9	63.7928	7	45	22.7861	27	81	9.1711	47	117	4.0607
-32	26	193.9703	12	10	60.3980	8	46	21.7151	28	82	8.7860	48	118	3.9074
-31	24	182.2686	-11	12	57.2044	9	48	20.7004	29	84	8.4190	49	120	3.7607
-30	22	171.3474	10	14	54.1988	10	50	19.7390	30	86	8.0694	50	122	3.6202
-29	20	161.1499	-9	16	51.3692	11	52	18.8277	31	88	7.7360	51	124	3.4857
-28	18	151.6239	-8	18	48.7042	12	54	17.9636	32	90	7.4182	52	126	3.3568
-27	-17	142.7211	-7	19	46.1933	13	55	17.1440	33	91	7.1150	53	127	3.2333
-26	-15	134.3971	-6	21	43.8268	14	57	16.3665	34	93	6.8259	54	129	3.1150
-25	13	126.6109	-5	23	41.5956	15	59	15.6286	35	95	6.5499	55	131	3.0016
-24	-11	119.3244	-4	25	39.4921	16	61	14.9280	36	97	6.2866	56	133	2.8928
-23	-9	112.5028	-3	27	37.5056	17	63	14.2629	37	99	6.0351	57	135	2.7886
-22	-8	106.1135	-2	28	35.6316	18	64	13.6310	38	100	5.7950	58	136	2.6886
-21	-6	100.1268	-1	30	33.8622	19	66	13.0307	39	102	5.5657	59	138	2.5926

S2000D1000, remote duct mounted temperature sensor complete with junction box.

This sensor can be used for:

- Remote return air temperature sensing with the sensor mounted on the return air duct.
- Outside air temperature sensing with the
- sensor installed in the fresh air plenum.
- Supply air temperature sensor

S2060A1000, remote averaging duct mounted temperature sensor complete with junction box.

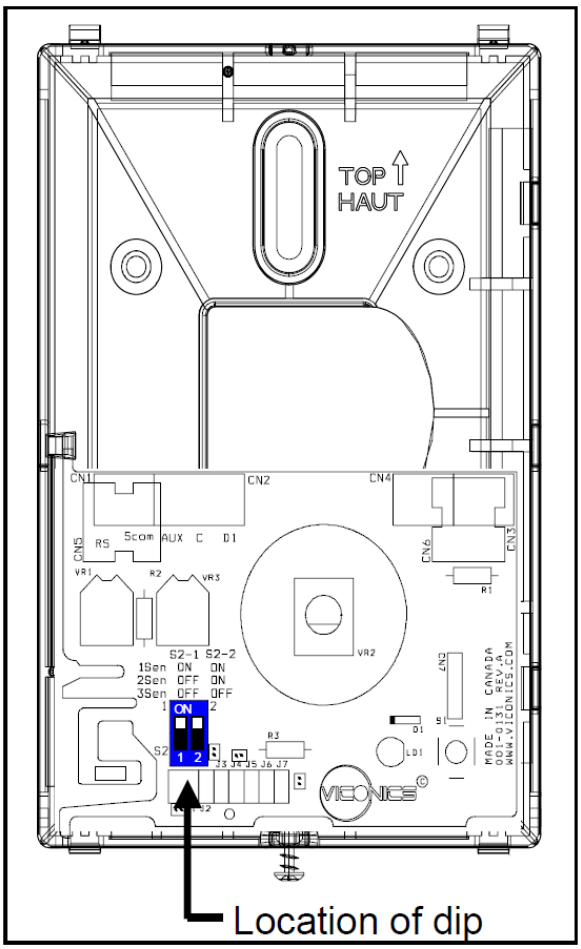
This sensor can be used for:

- Remote averaging return air temperature sensing with the sensor mounted on the return air duct.
- Outside air temperature averaging sensing with the sensor installed in the fresh air plenum.
- Mixed air temperature averaging sensor for economizer models with the sensor in the mixing plenum.

S2020E1000, outdoor air temperature sensor

This sensor can be used for:

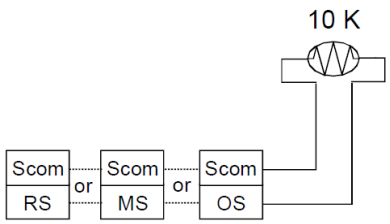
- Outside air temperature sensing with the sensor installed directly exposed to the elements.
- Sensor uses a water resistant NEMA 4 ABS enclosure for outdoor applications.



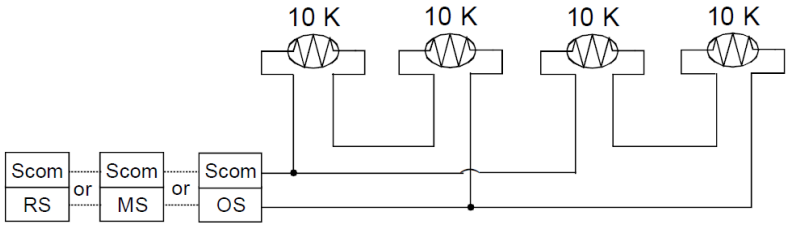
S3010W1000 remote wall mounted temperature sensor, dip switch location

Wiring S2000D1000, S2060A1000 and S2020E1000

Remote wiring 1 sensor

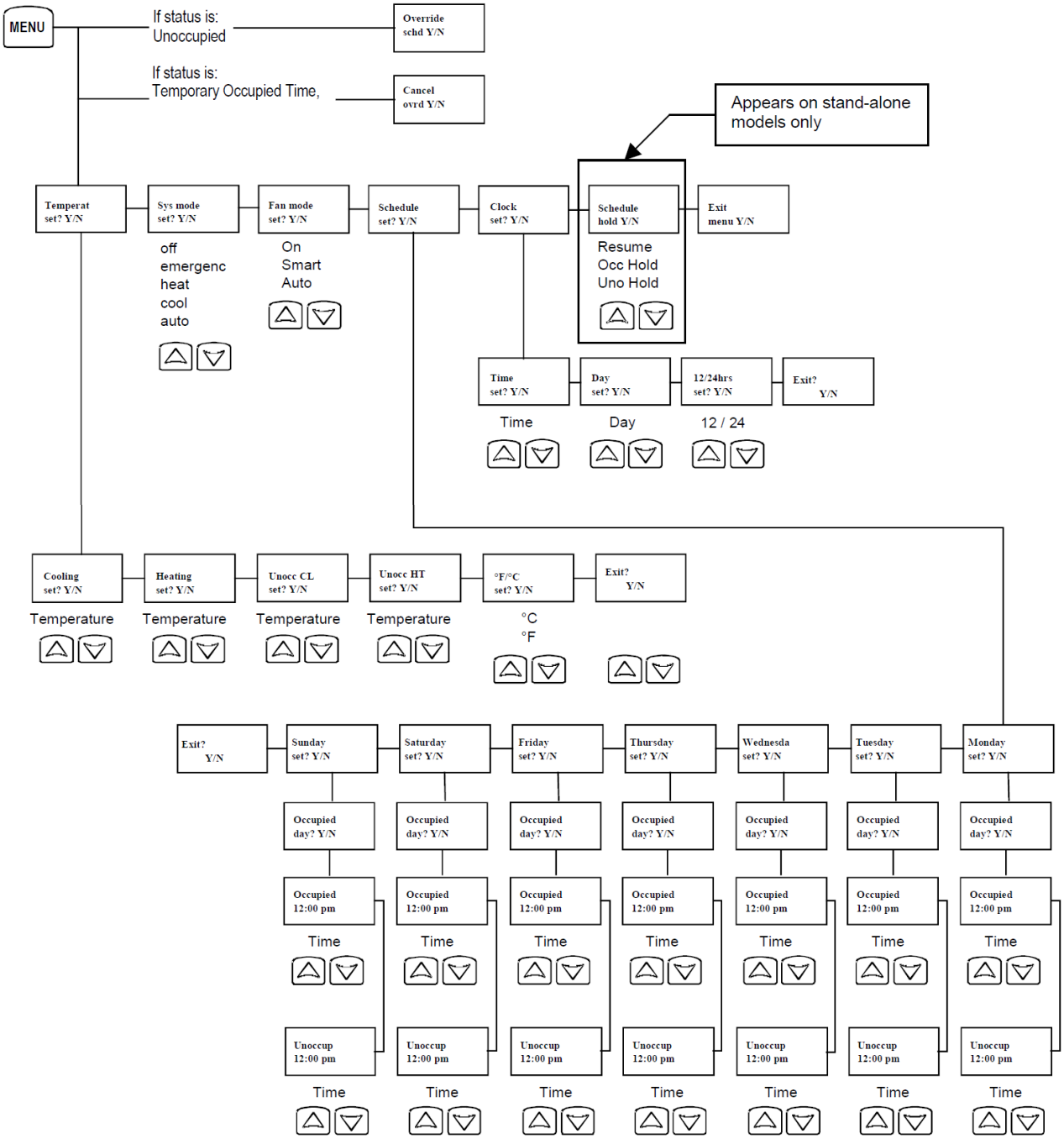


Remote wiring 4 sensors



User menu flow chart

NOTE: Prompts may not all be present depending on model selected



CONFIGURATION AND STATUS DISPLAY INSTRUCTIONS

Status display

The Room Controller features a two-line, eight-character display. There is a low level backlight level that is always active and can only be seen at night.

When left unattended, the Room Controller has an auto scrolling display that shows the actual 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 come on to high level.

Manual scroll 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.

Sequence of auto-scroll status display

ROOM TEMPERATURE	CLOCK STATUS	SYSTEM MODE	SCHEDULE STATUS	OUTDOOR TEMPERATURE	ALARMS
x.x °C or °F XX % RH	Monday 12:00 AM	**Sys mode auto**	**Occupied**	Outdoor x.x °C or °F	**Service**
		Sys mode off	**Occupied Hold**		**Frost ON**
		Sys mode cool	**Unoccup**		**SetClock**
		Sys mode heat			**Filter**
		Sys mode emergency			**Fan lock**

Outdoor air temperature

- Outdoor air temperature display is only enabled when 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) is not displayed and indicates a opened sensor or a sensor not connected. Associated functions, such as mode lockouts and economizer function are automatically disabled.

Alarms

- If alarms are detected, they will automatically be displayed 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 input (DI1 or DI2)
Filter	Indicates that the filters are dirty as per one of the configurable digital input (DI1 or DI2)
Fan lock	Indicates that the heating and cooling action are locked out due to a defective fan operation

Three status LEDs on the Room Controller cover are used to indicate the status of the fan, a call for heat, or a call for cooling.

Fan coil models

When any of the fans are **ON**, the **FAN LED** will illuminate	FAN O
When heating is **ON**, the **HEAT LED** will illuminate	HEAT O
When cooling is **ON**, the **COOL LED** will illuminate	COOL O

LED OPERATION	HEATPUMP MODELS SE76XXH	MULTISTAGE AND SINGLE STAGE MODELS SE7600A, SE7652A, SE7600B & SE7652B	MULTISTAGE ECONOMIZER MODELS SE7605B & SE7656B
Fan LED on	When G Fan terminal operates	When G Fan terminal operates	When G Fan terminal operates
Heating LED on	When Y1 and or W1 terminal(s) operate in heating mode	When W1 terminal operate in heating mode	When W1 terminal operate in heating mode
Cooling LED on	When Y1 terminal operate in cooling mode	When Y1 terminal operate in cooling mode	When Y1 terminal operate in cooling mode and or economizer output is in function

USER INTERFACE

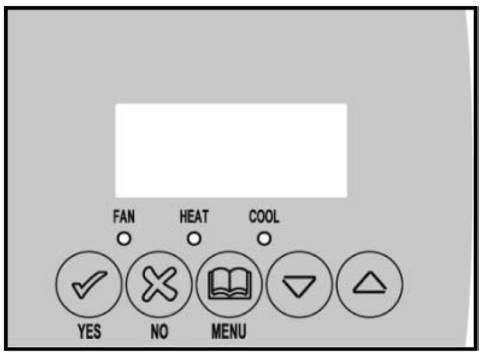
User configuring instructions menu

The SE7600 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 depressing 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.

Ex.:	Press yes key to change cooling temperature setpoint Use the up or down arrow to adjust cooling setpoint



Local keypad interface

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

The priority for the alarms is as follows:

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

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 lit display will turn off when the Room Controller is left unattended for 45 seconds

Sequence of user menu:

OVERRIDE RESUME	TEMPERATURE SETPOINTS	SYSTEM MODE SETTING	FAN MODE SETTING	SCHEDULES SETTING	CLOCK SETTING	SCHEDULE HOLD
Override schd Y/N	Temperat Set Y/N	Sys mode set Y/N	Fan mode set Y/N	Schedule set Y/N	Clock set Y/N	Schedule hold Y/N
Override schd Y/N						Appears only on stand-alone (Network Ready) models
Appears only in unoccupied mode						
Cancel ovrd Y/N						
Appears only in override mode						

Technical Support

For any issues with SmartStruxure Solution or SmartStruxure Lite, contact Schneider Electric Technical Support according to your region.

North America (NAM) Product Support
Building Management Systems (BMS): www.nampss.com

Global Product Support
Building Management Systems (BMS): productsupport.BMS@schneider-electric.com

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France

Schneider Electric is leading the Digital Transformation of Energy Management and Automation in Homes, Buildings, Data Centers, Infrastructure and Industries.

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In our global Ecosystem, we collaborate with the largest Partner, Integrator and Developer Community on our Open Platform to deliver real-time control and operational efficiency.

We believe that great people and partners make Schneider a great company and that our commitment to Innovation, Diversity and Sustainability ensures that Life Is On everywhere, for everyone and at every moment.

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