SpaceLogic™ Room Controllers

SE8350 Installation Guide
Low Voltage (24VAC) Fan Coil Unit (FCU) and Zone Control
Firmware Revision 2.6

Life Is On | **Schneider Electric**

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1. SAFETY INFORMATION

1.1 IMPORTANT INFORMATION

Read these instructions carefully and inspect 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 this 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.

1.2 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.

1.3   BEFORE YOU BEGIN

LOSS OF CONTROL

NOTICE
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 equipment damage.**

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.

INSTALLATION

NOTICE
INSTALLATION   • The system must be installed correctly by a qualified technician.   • If replacing an existing Room Controller, label wires before removal of the 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 the Room Controller or equipment.   • All Room Controllers are designed for use as operating controls only and are not safety devices. 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.**

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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

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UNAUTHORIZED USB ACCESS

NOTICE
UNAUTHORIZED USB ACCESS To prevent unauthorized access to the Room Controller via USB, it is recommended that: • "USB access" is set to "Disabled" to prevent changing of firmware, standby image, configuration or LUA scripts via USB. • "Main password" is set to a non-zero value to limit configuration menu access to authorized users only. **Failure to follow these instructions may lead to unauthorized users modifying the firmware or the configuration of the Room Controller.**

LOCATION

NOTICE
LOCATION • Do not install on an exterior wall. • Do not install behind a door. • Do not install in areas with a direct heat source. • Do not install near any air discharge grill. • Do not install in areas exposed to direct sunlight. • Ensure the Room Controller has sufficient natural air circulation. • Ensure the wall surface is flat and clean. • Ensure external thermal sensor wirings are away from noisy electrical sources. • Install 1.3 to 1.5 meters (52 to 60 inches) above the floor. • Protect the Room Controller against vibration from nearby equipment that can cause false motion detection. Make sure to place the Room Controller away from vibration sources and install vibration isolators on HVAC equipment. • 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.**

2. INSTALLATION

1. Remove the security screw (if applicable) from the bottom of the Room Controller cover.

2. Open the unit by pulling on the bottom side of the Room Controller (Figure 1).

3. Read the FCC ID and IC label installed inside the cover before installing any wireless product.

4. Ensure the correct side of the base faces up.

5. Pull the cables 6in (15cm) out from the wall.

6. Align the base and mark the location of the two mounting holes on the wall.

7. Install the anchors in the wall (Figure 2).

8. Insert the cable in the central hole of the base.

9. Insert the screws in the mounting holes on each side of the base.

10. Strip each wire 1/4in (0.6cm) from the end.

11. Insert each wire and screw according to the wiring chart (see following pages).

12. Gently push excess wiring back into the hole.

13. Gently align the cover with the top of the base and snap it into place from the bottom (Figure 3).

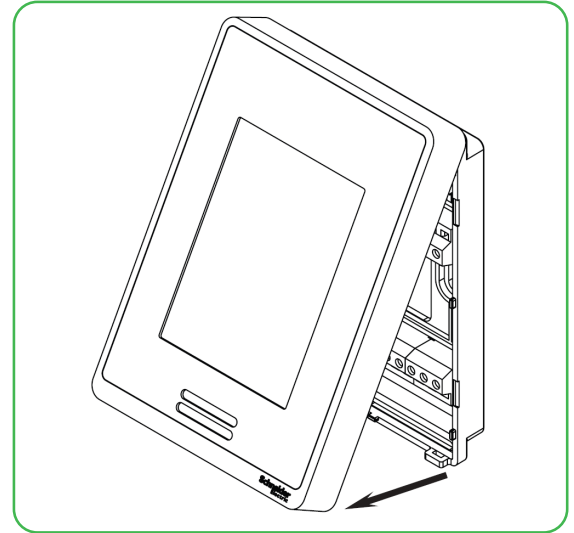14. Install the security screw (if applicable).
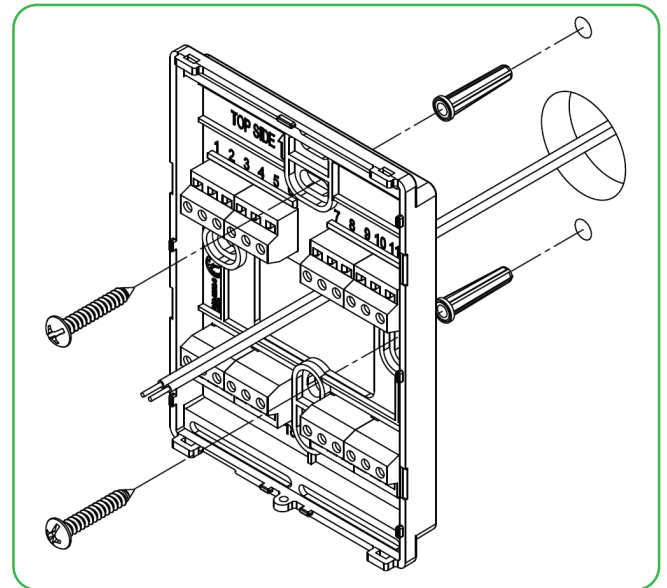

Figure-1 Open the cover
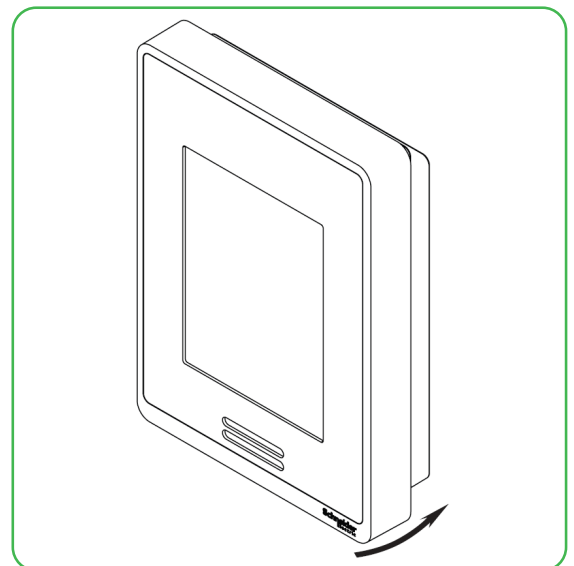

Figure-2 Install the base

Figure-3 Reinstall cover

SpaceLogic SE8350 **[** Installation Guide **]**

3. TERMINAL IDENTIFICATION AND FUNCTION

3.1 TERMINAL IDENTIFICATION FOR 3 SPEED FAN SYSTEM

Fan Type - 3 Speed				
Control Type	**On/Off**	**Floating**	**Analog**	
1- BO1	Not used	Not used	Not used	
2- BO2	Fan-L	Fan-L	Fan-L	
3- BO3	Fan-M	Fan-M	Fan-M	
4- BO4	Fan-H	Fan-H	Fan-H	
5- RC / 24 V~ Hot	24 V~ Hot	24 V~ Hot	24 V~ Hot	
6- C / 24 V~ Com	24 V~ Com	24 V~ Com	24 V~ Com	
7- RH	Aux Heat	Aux Heat	Aux Heat	
8- BO8	Aux Heat	Aux Heat	Aux Heat	
9- UO9	Normally Close Cool Valve	Close Cool Valve	Not used	
10- UO10	Normally Close Heat Valve	Close Heat Valve	Not used	
11- UO11	Normally Open Cool Valve	Open Cool Valve	Analog Heat Valve	Analog Cool Valve *
12- UO12	Normally Open Heat Valve	Open Heat Valve	Analog Cool Valve	Analog Heat Valve **
13- RS-485 +	BACnet MS/TP or Modbus (+)			
14- RS-485 -	BACnet MS/TP or Modbus (-)			
15- RS-485 Ref	BACnet MS/TP or Modbus (Ref) (do not wire shield to this terminal)			
16- UI16	UI16 Function			
17- UI17	UI17 Function			
18- Scom	Common			
19- UI19	UI19 Function			
20- UI20	Remote Room Sensor			
21- Scom	Common			
22- UI22	Remote Supply Sensor			
23- UI23	Not used			
24- UI24	Not used			

NOTE:

The Analog control terminations are reversed when used in a 4 pipe mixed application (one analog valve and one On/Off or Floating valve):

* : The "Analog Cool Valve" output moves to terminal UO11 when:

- "No. of pipes" is set to 4
- "Ctrl. type out1" is set to "0-10V DA" or "0-10V RA"
- "Ctrl. type out2" is set to "On/Off" or "Floating"

** : The "Analog Heat Valve" output moves to terminal UO12 when:

- "No. of pipes" is set to 4
- "Ctrl. type out1" is set to "On/Off" or "Floating"
- "Ctrl. type out2" is set to "0-10V DA" or "0-10V RA"

3.2   TERMINAL IDENTIFICATION FOR ECM FAN SYSTEM

Fan Type - ECM			
Control Type	**On/Off**	**Floating**	**Analog**
1- BO1	Normally Close Heat Valve	Close Heat valve	Not used
2- BO2	Not used	Not used	Not used
3- BO3	Not used	Not used	Not used
4- BO4	ECM Fan Start	ECM Fan Start	ECM Fan Start
5- RC / 24 V~ Hot	24 V~ Hot	24 V~ Hot	24 V~ Hot
6- C / 24 V~ Com	24 V~ Com	24 V~ Com	24 V~ Com
7- RH	Aux Heat	Aux Heat	Aux Heat
8- BO8	Aux Heat	Aux Heat	Aux Heat
9- UO9	Normally Close Cool Valve	Close Cool Valve	Not used
10- UO10	Analog ECM Fan	Analog ECM Fan	Analog ECM Fan
11- UO11	Normally Open Cool Valve	Open Cool Valve	Analog Heat Valve	Analog Cool Valve *
12- UO12	Normally Open Heat Valve	Open Heat Valve	Analog Cool Valve	Analog Heat Valve **
13- RS-485 +	BACnet MS/TP or Modbus (+)		
14- RS-485 -	BACnet MS/TP or Modbus (-)		
15- RS-485 Ref	BACnet MS/TP or Modbus (Ref) (do not wire shield to this terminal)		
16- UI16	UI16 Function		
17- UI17	UI17 Function		
18-Scom	Common		
19- UI19	UI19 Function		
20- UI20	Remote Room Sensor		
21-Scom	Common		
22- UI22	Remote Supply Sensor		
23- UI23	Not used		
24- UI24	Not used		

NOTE:

The Analog control terminations are reversed when used in a 4 pipe mixed application (one analog valve and one On/Off or Floating valve):

* : The "Analog Cool Valve" output moves to terminal UO11 when:
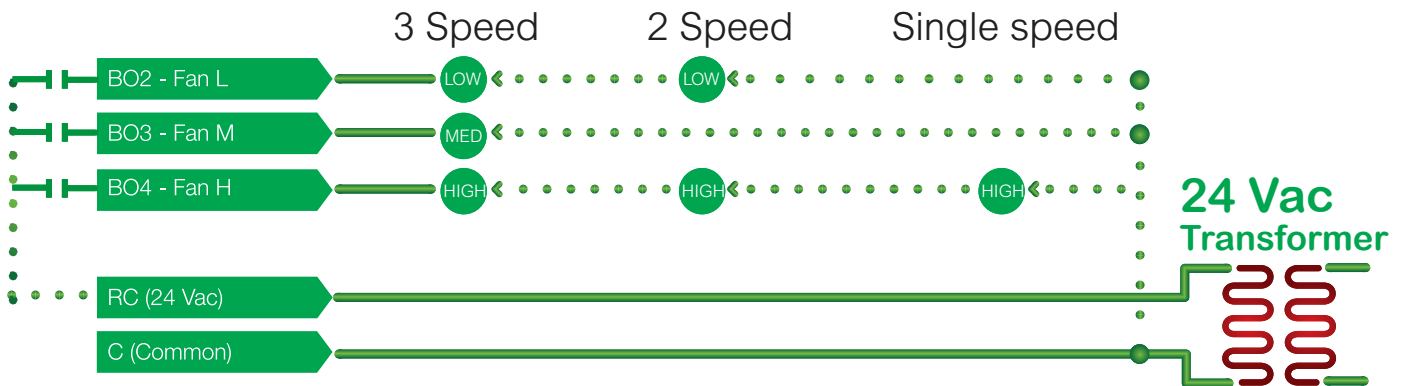
- "No. of pipes" is set to 4
- "Ctrl. type out1" is set to "0-10V DA" or "0-10V RA"
- "Ctrl. type out2" is set to "On/Off" or "Floating"

** : The "Analog Heat Valve" output moves to terminal UO12 when:

- "No. of pipes" is set to 4
- "Ctrl. type out1" is set to "On/Off" or "Floating"
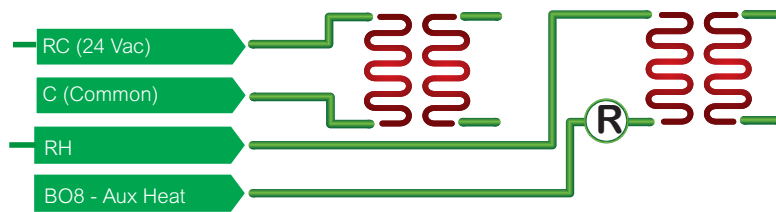- "Ctrl. type out2" is set to "0-10V DA" or "0-10V RA"

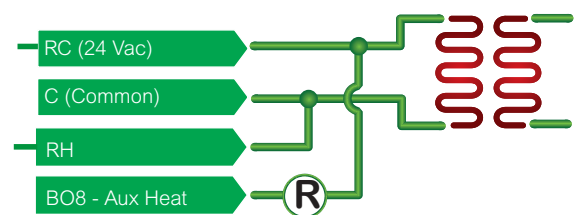### 3.3   WIRING - SINGLE OR MULTISPEED MOTOR

Power & Fan

BO8 Auxiliary output wiring

Wiring ECM Motor
Power and Fan

3.4   MAIN OUTPUTS WIRING

2 Pipe Applications No. of pipes=2	4 Pipe Applications No. of pipes=4
On-Off control Ctrl. type out1=On/Off Ctrl. type out2=Same as 1	
Floating control Ctrl. type out1=Floating Ctrl. type out2=Same as 1	
Analog control Ctrl. type out1=0-10V DA or 0-10V RA Ctrl. type out2=0-10V DA or 0-10V RA or Same as 1	

NOTE:

For the ECM fan type, UO10 moves to BO1.

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4 Pipe Mixed Applications
No. of pipes=4

On-Off Cool and Floating Heat control

Ctrl. type out1=On/Off
Ctrl. type out2=Floating

On-Off Cool and Analog Heat control

Ctrl. type out1=On/Off
Ctrl. type out2=0-10V DA or 0-10V RA

Floating Cool and On-Off Heat control

Ctrl. type out1=Floating
Ctrl. type out2=On/Off

Floating Cool and Analog Heat control

Ctrl. type out1=Floating
Ctrl. type out2=0-10V DA or 0-10V RA

Analog Cool and On-Off Heat control

Ctrl. type out1=0-10V DA or 0-10V RA
Ctrl. type out2=On/Off

Analog Cool and Floating Heat control

Ctrl. type out1=0-10V DA or 0-10V RA
Ctrl. type out2=Floating

NOTE:

For the ECM fan type, UO10 moves to BO1.

3.5   REMOTE SENSOR ACCESSORIES

Model no.	Description
S3010W1031	Wall-mounted temperature sensor
S3020W1031	Wall-mounted temperature sensor with override button and occupancy status LED

The SpaceLogic SE8350 Room Controller is compatible with remote mount temperature sensors using 10K type 2 NTC thermistors.
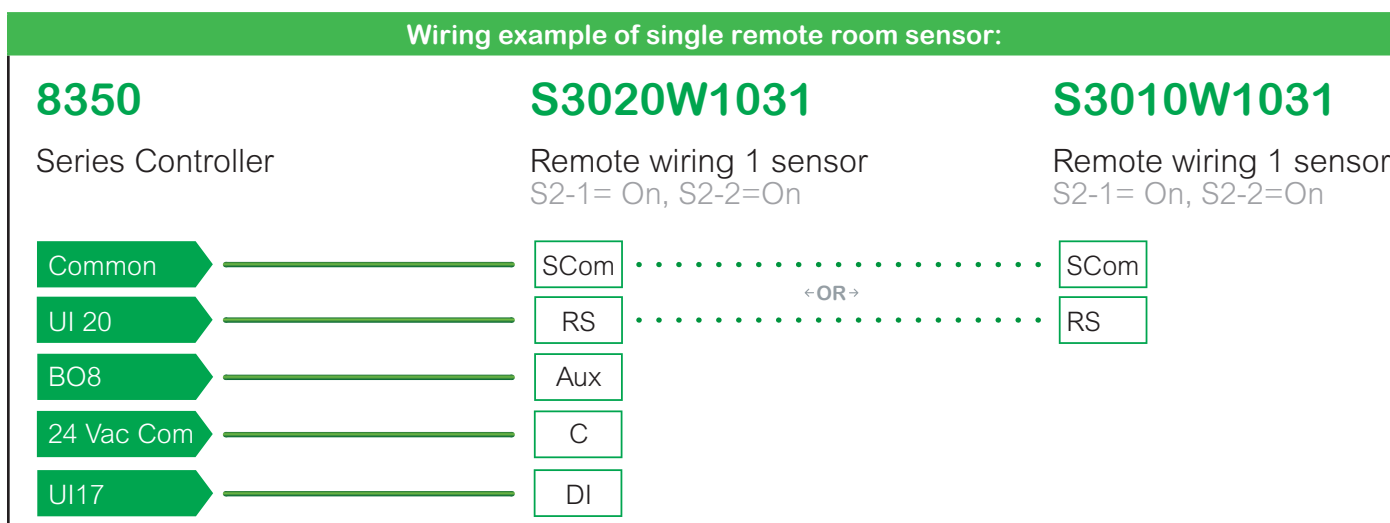
NOTE:

If one or multiple sensor(s) is/are connected to the RS terminal, the internal temperature sensor is automatically disabled. Disconnecting the sensor(s) in the RS terminal will re-activate the internal sensor.

Features:

Each sensor can be configured for various averaging combinations (refer to S3000 remote sensors for more details)

• Optional occupancy led
• Optional override key

Wiring example of single remote room sensor:

8350

Series Controller

S3020W1031

Remote wiring 1 sensor
S2-1= On, S2-2=On

S3010W1031

Remote wiring 1 sensor
S2-1= On, S2-2=On

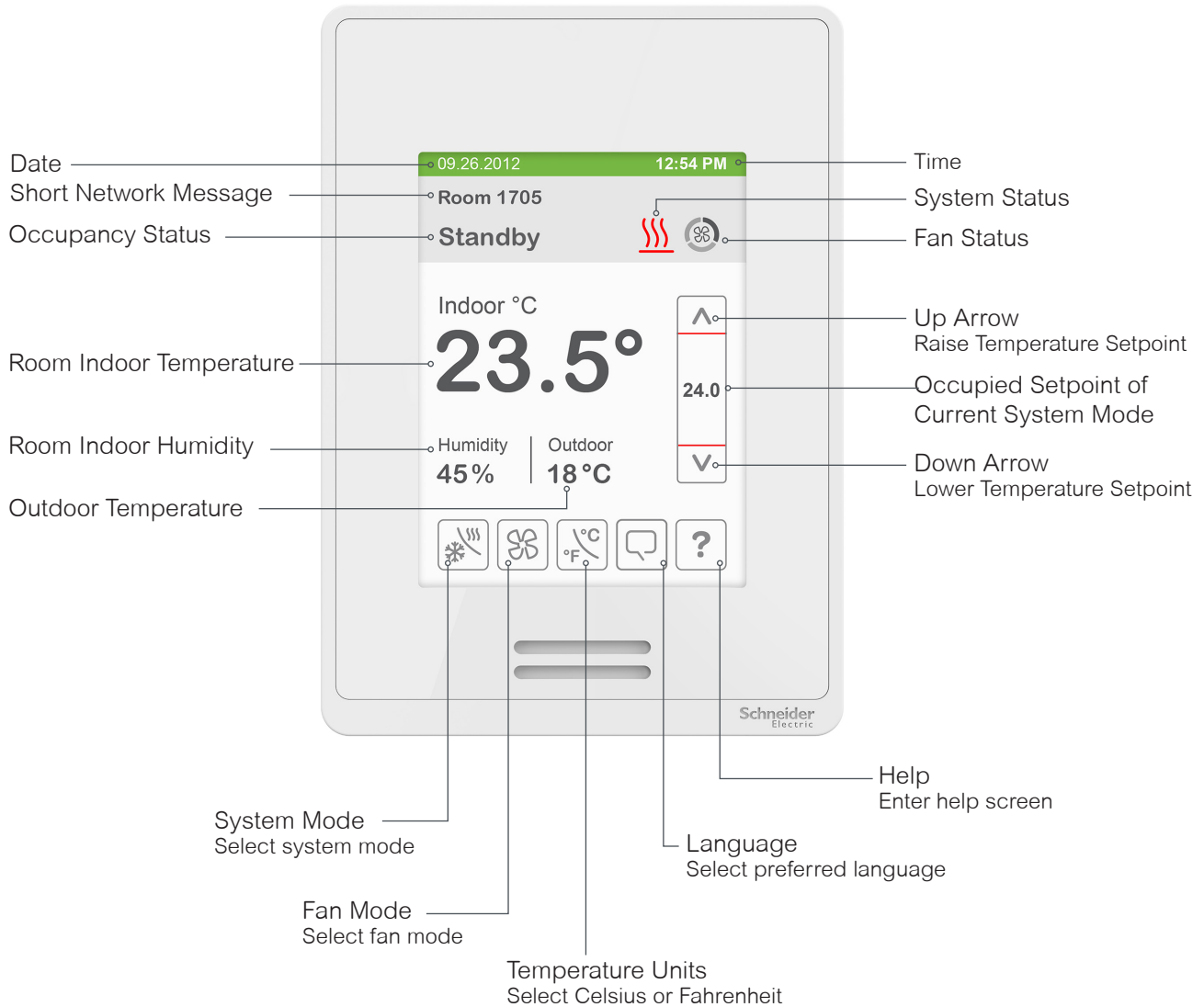| Common | —— | SCom | ···········←OR→··········· | SCom |
UI 20	——	RS	··························	RS
BO8	——	Aux		
24 Vac Com	——	C		
UI17	——	DI		

Temperature vs. resistance chart for 10 Kohm NTC thermistor (R25°C = 10KΩ±3%, B25/85°C = 3975K±1.5%)

| °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
-35	-31	234.4009	-15	5	71.2430	5	41	25.1119	25	77	10.0000	45	113	4.3881
-30	-22	171.3474	-10	14	54.1988	10	50	19.7390	30	86	8.0694	50	122	3.6202
-25	-13	126.6109	-5	23	41.5956	15	59	15.6286	35	95	6.5499	55	131	3.0016

4. HOME SCREEN DISPLAY

Hospitality User Interface Shown

Date — 09.26.2012 — Time
Short Network Message — Room 1705 — System Status
Occupancy Status — Standby — Fan Status

Indoor °C
Room Indoor Temperature — **23.5°**

Up Arrow
Raise Temperature Setpoint

24.0 — Occupied Setpoint of Current System Mode

Down Arrow
Lower Temperature Setpoint

Room Indoor Humidity — Humidity **45%** | Outdoor **18°C**
Outdoor Temperature

Help
Enter help screen

System Mode
Select system mode

Language
Select preferred language

Fan Mode
Select fan mode

Temperature Units
Select Celsius or Fahrenheit

NOTE: User HMI is configurable and allows display functions such as Date, Time, Humidity, Outdoor Temperature, Setpoint, and others to be enabled or disabled by setting various parameters.
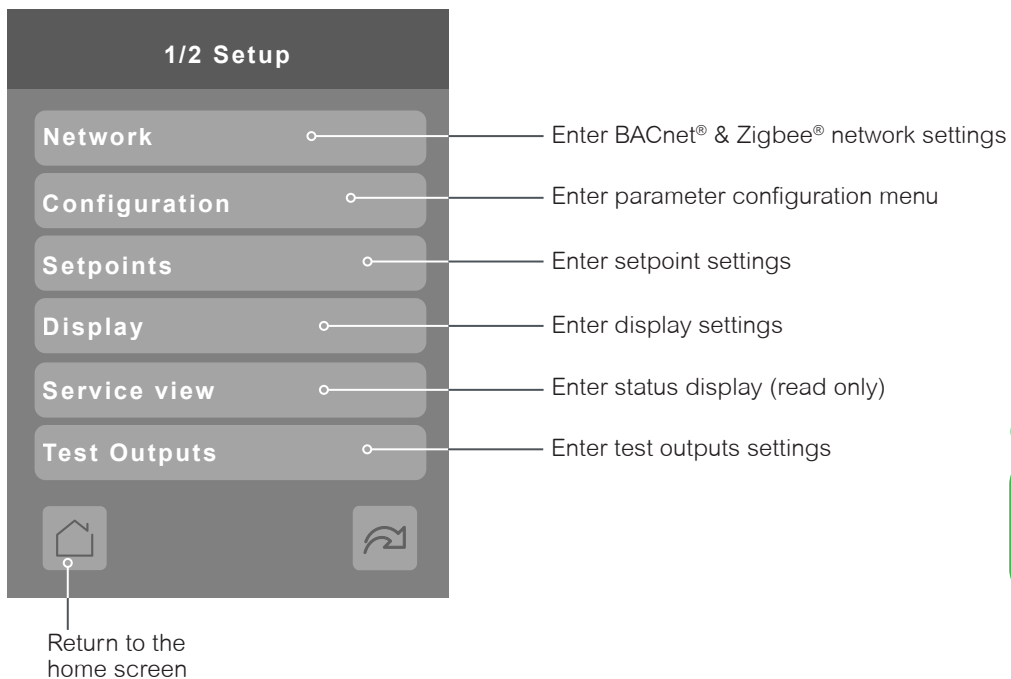
5. HOW TO ENTER SET-UP SCREEN
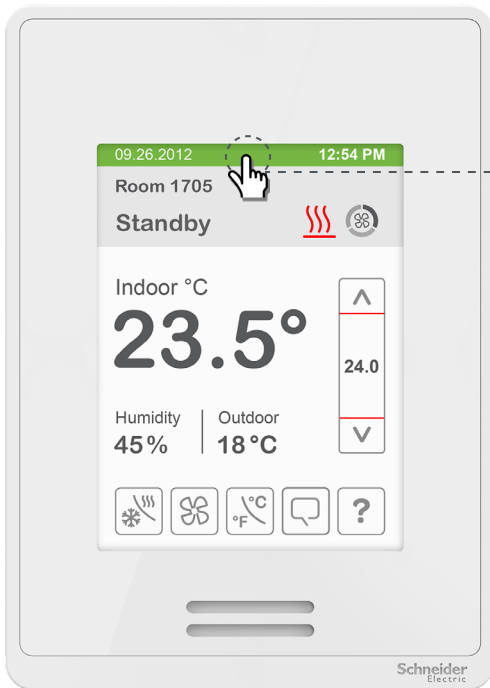
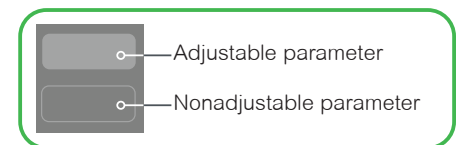Touch and hold this point
for 3 seconds to enter set-up mode

NOTE: If a configuration/installer
password is activated to prevent
unauthorized access to the
configuration menu parameters,
a password entry prompt shows
to prevent access to the device
configuration components.

For more information on using and
configuring the functions of the
HMI, refer to the
**SpaceLogic SE8350 User
Interface Guide**

6. SET-UP SCREEN DISPLAY

1/2 Setup

Network — Enter BACnet® & Zigbee® network settings

Configuration — Enter parameter configuration menu

Setpoints — Enter setpoint settings

Display — Enter display settings

Service view — Enter status display (read only)

Test Outputs — Enter test outputs settings

Return to the
home screen

General Note:

Adjustable parameter
Nonadjustable parameter

APPENDIX A.   TERMINAL CORRESPONDENCE

The terminals of a SpaceLogic SE8350 are identified differently and have a wider range of possible functions compared to those of any of the SE7000 Room Controllers. Nonetheless, there is a direct correspondence of functions between the terminals of the SE7000 and the SE8350. Consult the table below to verify the appropriate terminal when replacing a SE7000 Room Controller with a SE8350 Room Controller.

SE7000		SE8350	
Terminal name	**Terminal ID**	**Terminal name**	**Terminal ID**
Binary Input 1	BI1	Universal Input 16	UI16
Binary Input 2	BI2	Universal Input 17	UI17
Universal Input 3	UI3	Universal Input 19	UI19
Sensor Common	Scom	Terminal 18 Common	COM
Remote Sensor	RS	Universal Input 20	UI20 - RS
Sensor Common	Scom	Terminal 21 Common	COM
Mix/Supply Sensor	MS	Universal Input 22	UI22 - SS

APPENDIX B.   POWER OUTAGE CLOCK RESET

In the event of a power outage, SpaceLogic SE8350 Room Controllers retain the correct time as long as the duration of the power outage is not prolonged. Depending on the duration of the power outage, the Room Controllers' internal clock may need to be updated or reset completely. The following table indicates the expected clock performance after a power outage of a given duration.

Outage duration	Room Controller behavior
0 - 24 hours	Clock functions are normal
24 - 36 hours	Clock accuracy not guaranteed, time may need to be adjusted
36 - 72 hours	Clock no longer increments and will need to be adjusted when power is restored.
72+ hours	Clock functions are fully reset, and will need to be reinitialized as per a new installation.

APPENDIX C.   DEPLOYMENT

The placement of the Room Controller must be given consideration. It is recommended to install the Room Controller as close to a door as possible (without being blocked by the door), or in an area with high occupant movement.

Ideally, the Room Controller should be installed 5 feet (1.5 meters) above the floor surface to ensure maximum detection range is achieved. As well, Room Controller placement should ensure the occupant crosses the lens beam in a perpendicular path within the prescribed detection zone.

The Room Controller's PIR sensor is very sensitive and can be triggered by vibration from nearby equipment, such as fans or compressor motors. To avoid false motion detection, make sure to place the Room Controller away from vibration sources and install vibration isolators on HVAC equipment.

C.1   EXAMPLE OF RECOMMENDED DEPLOYMENT

The below shows Room Controllers installed in ideal locations for two rooms.

The examination room shows one Room Controller installed adjacent to the door. In this area of the room, occupant traffic is high and ensures the occupant will almost always cross the PIR detection path laterally and within the detection range.

The waiting room shows one Room Controller installed beside a door in the middle of the room. As shown in the diagram below, occupant traffic is high in several areas of the room including the entrance, waiting room, access to the door and activity around the reception desk.
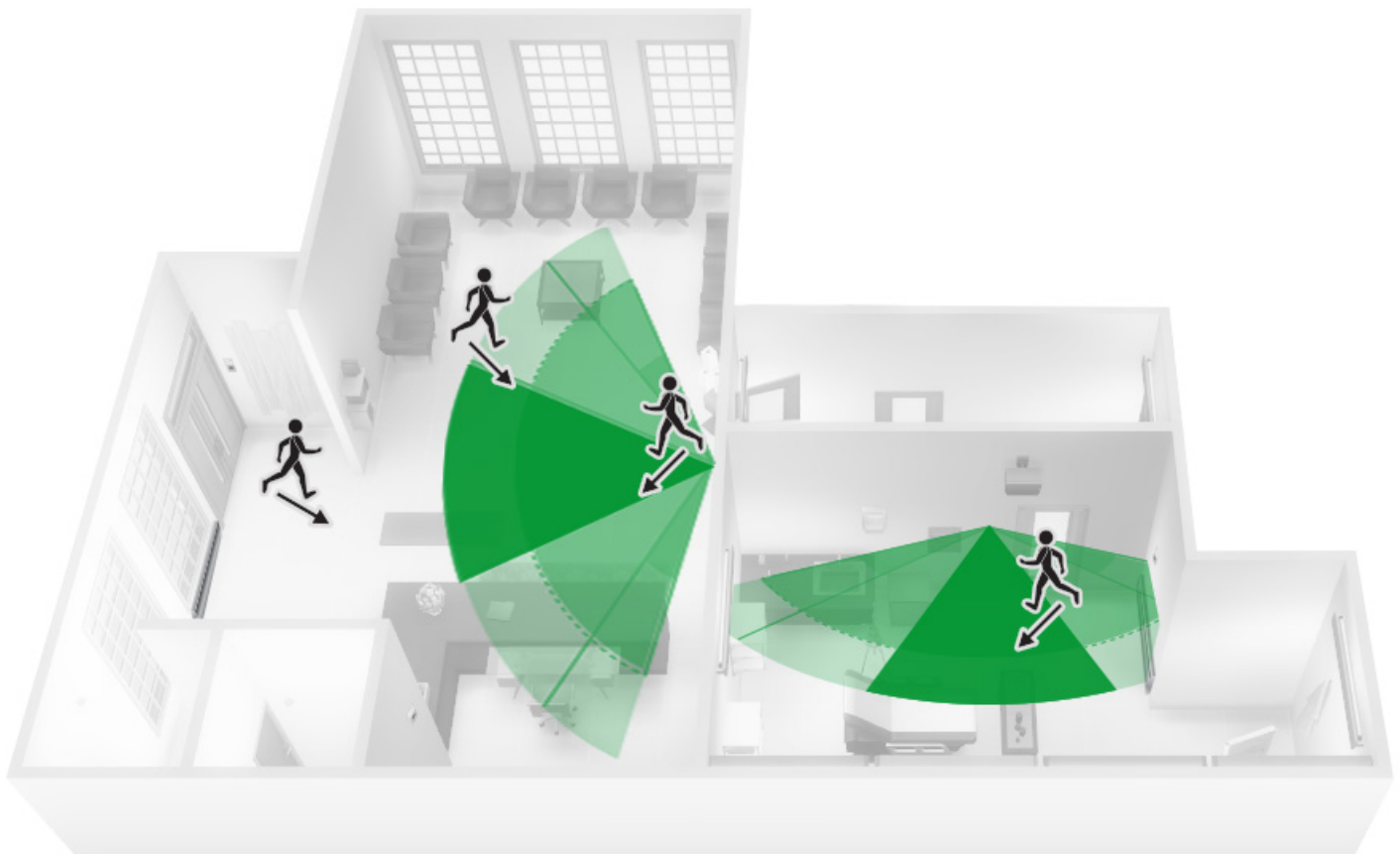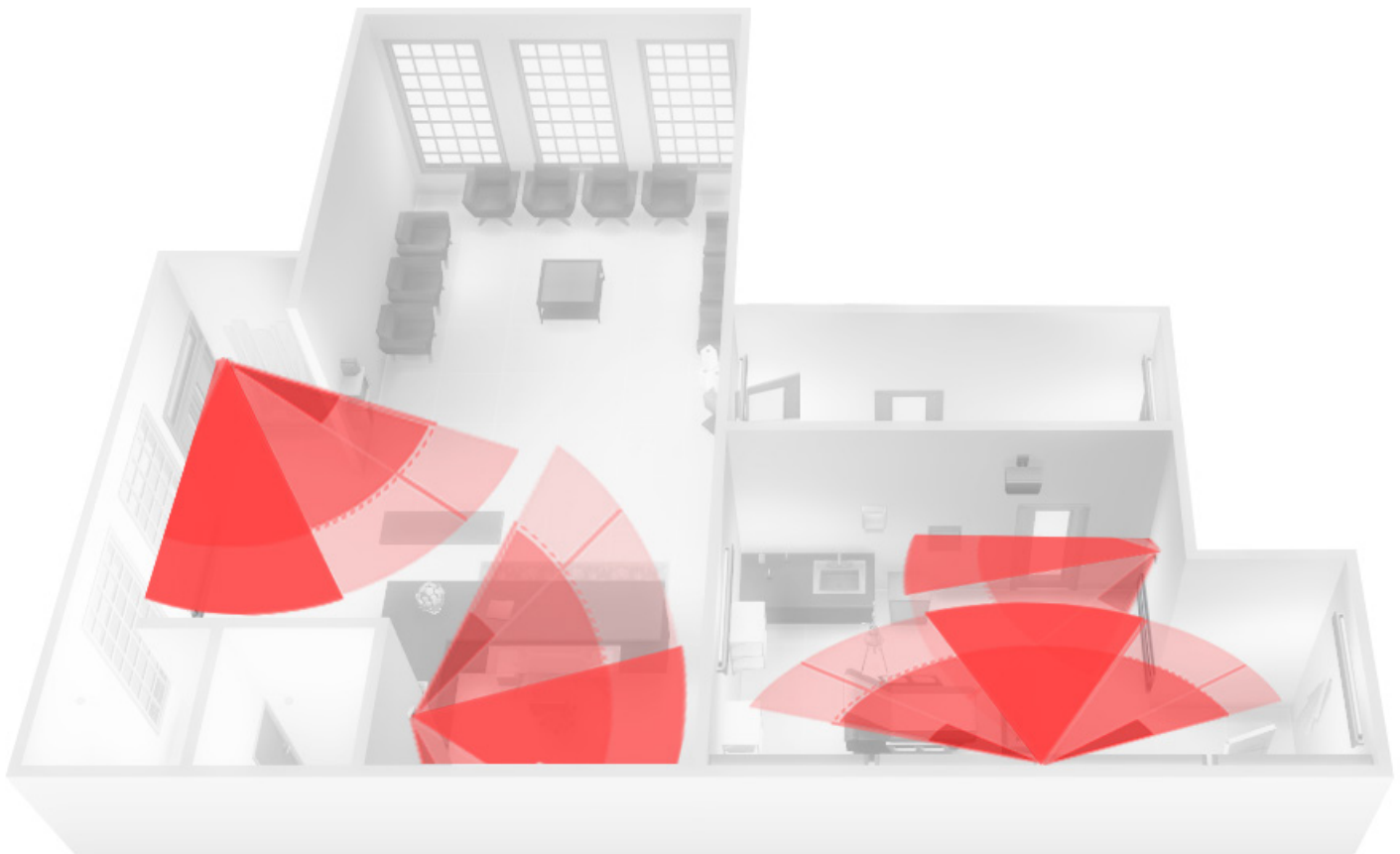

Recommended Installation

C.2   EXAMPLE OF NON-RECOMMENDED DEPLOYMENT

The below shows four Room Controllers (two for each room) installed in non-ideal locations for the two rooms.

The examination room shows one Room Controller installed in a low traffic area near the door, and a second Room Controller installed on the wall directly opposite the door. For the Room Controller installed in the corner wall, the PIR could be blocked by the opened door, while occupant traffic could also be minimal in this area of the room. For the second Room Controller installed opposite the door, the PIR detection could fall outside the specified detection zone, while at the same time most occupant movement would not be lateral to the PIR, thereby not respecting optimal crossing patterns for PIR detection.

The waiting room shows one Room Controller installed in the corner of the room, and a second Room Controller installed beside the reception area. For the Room Controller installed in the corner, the opening/closing of the door creates a high probability that the PIR would get blocked, and therefore, occupancy going undetected. For the Room Controller installed beside the reception area, occupant traffic could fall outside the detection zone, and the receptionist would often be below the 5-foot recommended installation height for the Room Controller.

Non-Recommended Installation

C.3   ROOM CONTROLLER PIR SENSOR DETAILS

The internal Room Controller PIR sensor only detects lateral movement. It cannot detect movement when a person is moving toward it. It will not detect someone seating on a chair and/or lying on the bed.
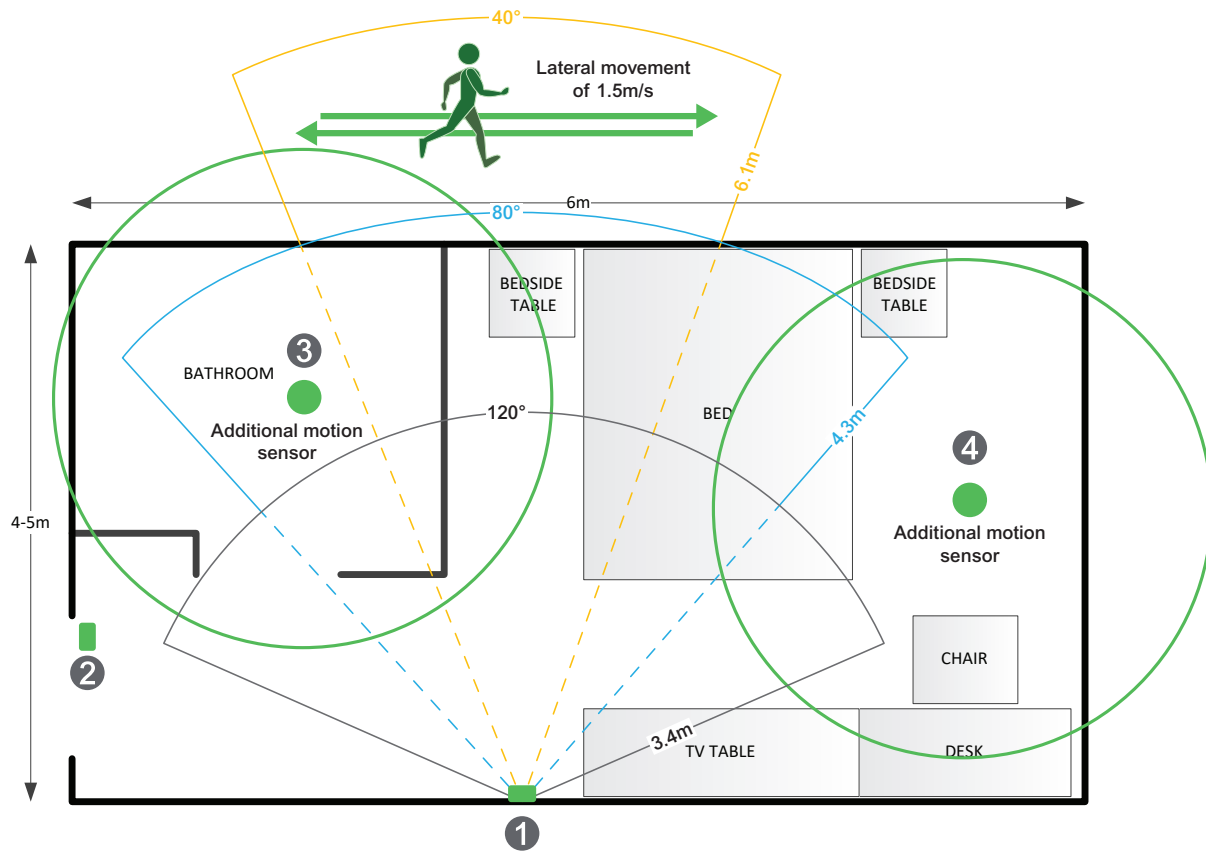
C.4   RECOMMENDATIONS FOR INSTALLATIONS

1. Install the Room Controller to cover more lateral movement.
2. Install a door sensor, the internal Room Controller occupancy logic works better with a door sensor. Once a motion is detected after a door is opened, the room stays in an occupied state until the door is opened again which puts the Room Controller in stand-by mode and if there is a motion then it goes back in occupied mode. It is also recommended to disable the unoccupied mode, set the "unoccupied time" to 0, so there are only 2 modes in the Room Controller: stand-by and occupied for a stand-alone solution. Please refer to the two(2) diagrams below for the Room Controller internal occupancy states transition.

8000 with internal and/or external motion sensors
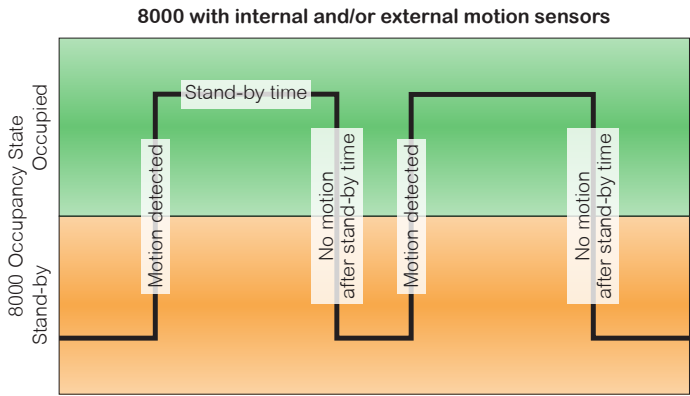
More aggressive energy savings logic but may cause a bad guest experience (when a guest is sleeping or not moving)

**8000 with door sensor, internal and/or external motion sensors**
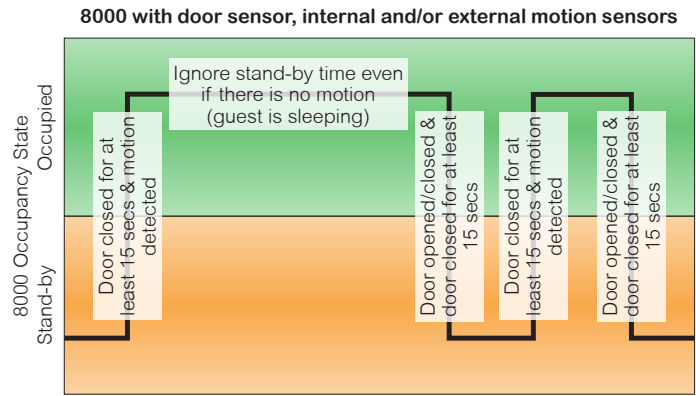
Good energy savings logic and better guest experience even when a guest is sleeping or not moving

3. Install additional motion sensors in the bathroom.
4. Install additional motion sensors for better motion detection in the entire room.

C.5   ENERGY SAVINGS

PIR can maximize your energy saving from 10-30% by adjusting temperature set points in unoccupied zones during scheduled periods.

PIR can maximize your energy saving from 10-30% by adjusting temperature set points in unoccupied zones during scheduled periods.

Typical Savings of 10-30%
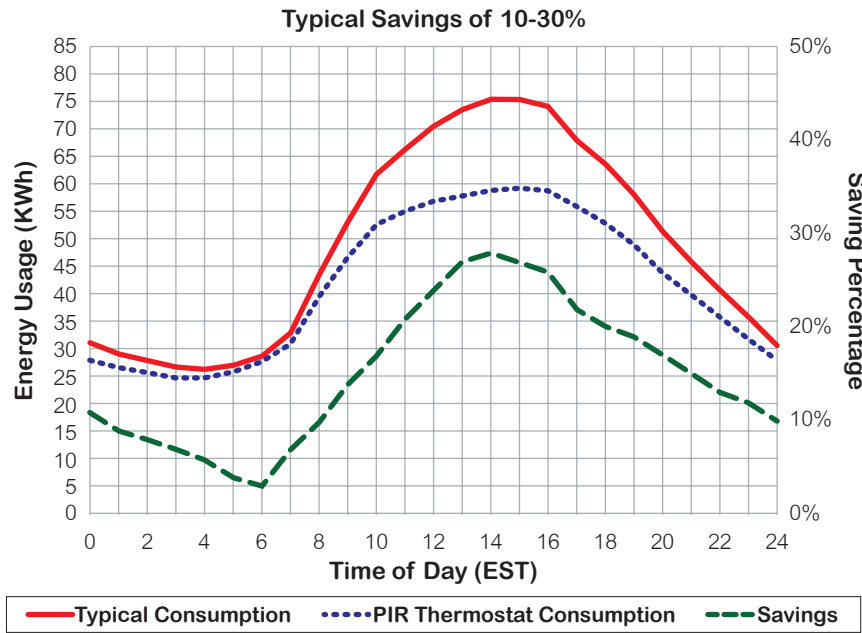
APPENDIX D.   CALIFORNIA PROPOSITION 65 WARNING STATEMENT FOR CALIFORNIA RESIDENTS

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

Technical Support

For any issues with EcoStruxure Building, 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

Schneider Electric
CS 30323
F-92506 Rueil-Malmaison Cedex
France

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

With a global presence in over 100 countries, Schneider is the undisputable leader in Power Management – Medium Voltage, Low Voltage and Secure Power, and in Automation Systems. We provide integrated efficiency solutions, combining energy, automation and software.

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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