Life Is On | **Schneider Electric**

SE8300 Room Controller

Low Voltage Fan Coil Controller and Zone Controller

Application Specific low voltage Room Controller with customizable covers and screen colors. Suitable for commercial and high end hospitality markets. It can also be used as a zone controller.

Product at a glance

The perfect balance between simplicity and sophistication. Select from a wide variety of casings, fascias, and configurable screen colors to match decor. Display your own logo and custom messages on screen to reinforce your brand and provide a more enjoyable occupant experience.

- **Interface:** touch screen interface with 2 casing options.

- **Aesthetics:** up to 5 selectable screen colors, 2 casing options and selectable fascias.

- **Flexible:** supports upload of custom standby screen and Lua scripts.

- **Conformity:** conforms to ASHRAE specifications for Green Building Standards.

- **Customize:** supports the display of custom messages when integrated to a BACnet MS/TP system.

- **Protocols:** wired BACnet MS/TP and Modbus or wireless ZigBee Pro and ZigBee Green Power.

- **Peripherals:** easy to install ZigBee Pro communication module or CO_2 sensor module.

- **Sensors:** occupancy, motion and water leak sensors.

- **Automatic Demand Response:** load shedding application for demand response.

Benefits

All models can be equipped with a discrete optional Passive Infrared (PIR) motion sensor. With the embedded sensor, the SE8300 uses advanced occupancy routines to generate automatic energy savings during occupied and unoccupied periods without sacrificing comfort.

- Generate automatic energy savings
- Display custom logo
- Interchange between °C/°F
- Suitable for commercial/hospitality markets
- 20 selectable languages

The SE8300 can also be used with SC1300/SC2300 relay for mixed voltage applications.

Version 12

SE8300 Overview

Introduction

Smart energy management has never been easier than with the SE8300 room controllers for fan coil unit applications. Designed for new construction and retrofit projects, the room controllers dramatically decrease project delivery costs by reducing installation, configuration and commissioning time. No complex software or tools are required to customize functionality to meet your applications requirements. The room controllers provide all the advanced features and monitoring functions required by modern building automation systems in a simple compact enclosure.

Application Specific and Programmable

The SE8300 room controllers are both application-specific AND programmable. This enables the modification of pre-configured control sequences, or the creation of entirely new control sequences for fan coil applications. Their configurable control sequences, economizer, and scheduler functionalities deliver all the flexibility necessary for optimal indoor air quality applications.

Touch Screen with Customizable User Experience

The touch screen of the SE8300 room controller offers a customizable user experience with selection of languages, temperature scales, buttons, and screen colors. Using the Uploader Tool, it also supports the upload of an image or logo that becomes the default standby screen of the device. Custom messages can also be displayed on-screen using BACnet® objects when the SE8300 room controller is integrated via a BACnet MS/TP system.

Optional Passive Infrared Motion Sensor

All models can be equipped with a discrete optional passive infrared (PIR) motion sensor. With the embedded sensor, the SE8300 room controller uses advanced occupancy routines to generate automatic energy savings during occupied and unoccupied periods without sacrificing comfort.

Automatic Demand Response

The Automatic Demand Respond (ADR) implements the Load Shedding application in compliance with California regulations ADR Title 24 for Occupant Controlled Smart Thermostats. The application requires a BACnet command from interfacing equipment to turn-on and turn-off the Load Shedding feature. ADR Title 24 messaging and confirmations are performed by adjoining equipment having Internet connectivity and then providing the Room Controller the BACnet command message.

Water Leak Sensor

The SE8300 supports pairing of a ZigBee Centralite Water Leak sensor. An alarm message shows on the display and via a BACnet point when a fluid leak has been detected by the sensor. Facility managers benefit from being able to monitor critical areas for possible facility damaging situations and be informed of these occurrences in a timely manner to respond and minimize their effects.

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SE8300 Features

Product highlights

The SE8300 Series Room Controller has the following high level functionality:

- Customizable color digital touch screen interface with multi-language support
- Fully programmable control sequences using scripting
- On board configuration interface utility
- Configurable fan sequence of operation
- Configurable scheduler
- Change of Value (COV) function for BMS integration
- Humidity sensor with on-board dehumidification strategy (model dependent)
- Optional occupancy sensor
- Advanced occupancy and scheduling functions for commercial and lodging applications
- Optional wireless door and window switches (with optional ZigBee Pro® card) available

Network Protocols

The SE8300 Series Room Controller natively supports BACnet MS/TP and Modbus as well as optional ZigBee Pro and ZigBee Green Power protocols.

Integration to Schneider Electric Systems

The SE8300 Series Room Controller can be seamlessly integrated with the following:

- EcoStruxure™ Building Expert™, EcoStruxure Building Operation and other Schneider Electric systems.
- Wireless integration to MPM devices
- Wireless integration to BACnet IP, oBIX and EWS via MPM devices
- Direct wired integration to BACnet MS/TP and Modbus

Custom Match Styling to Decor

The SE8300 Series Room Controller is available in 2 casings and multiple Fascia's. Five screen colors are also selectable through the interface.

5 selectable screen colors

Multiple Facisa's

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SE8300 Programming

Programming with Lua

The SE8300 Room Controllers are programmable using the open programming language Lua. Although building management systems often use open protocols and standards, their program BACnet objects and scripting features remain proprietary and incompatible with third party devices. The SE8300's use of an open language enables operability with all systems.

Programming with BMS Integration

When integrated into a BACnet MS/TP building management system, the SE8300 offers 10 Program BACnet objects able to contain 480 characters each. No special software, license or tool is required.

Programming without Integration

When there is no BACnet MS/TP integration, a Lua script can be uploaded directly into the SE8300 unit using the SE8000 Uploader Tool. Unlike the 10 PG objects used when the unit is integrated via BACnet MS/TP, there is only one script, which can contain up to 16KB. Lua scripts, standby screen images and firmware upgrades can also be loaded into the SE8300 using the Uploader Tool.

HVAC Applications and Beyond

Programming can be used to go beyond the pre-configured control sequences of the SE8300 to create customized HVAC applications. It can also be used to comply with specific project requirements and manage other applications, such as lighting and other equipment. Using Lua scripts also enables you to take advantage of the extra inputs and outputs of the SE8300 to manage other devices, such as sensors and relays.
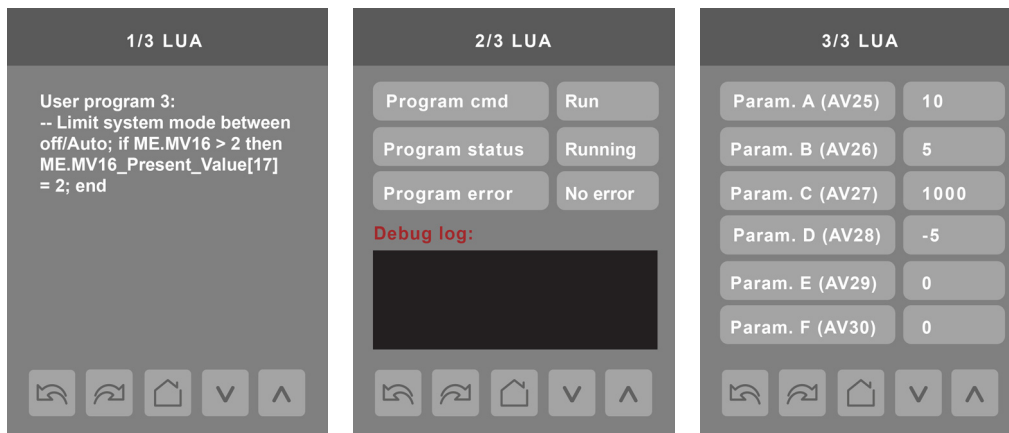
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Viewing Objects in EcoStruxure Building Operation

All PG Objects of the SE8300 Room Controller can easily be viewed through a Building Management System.
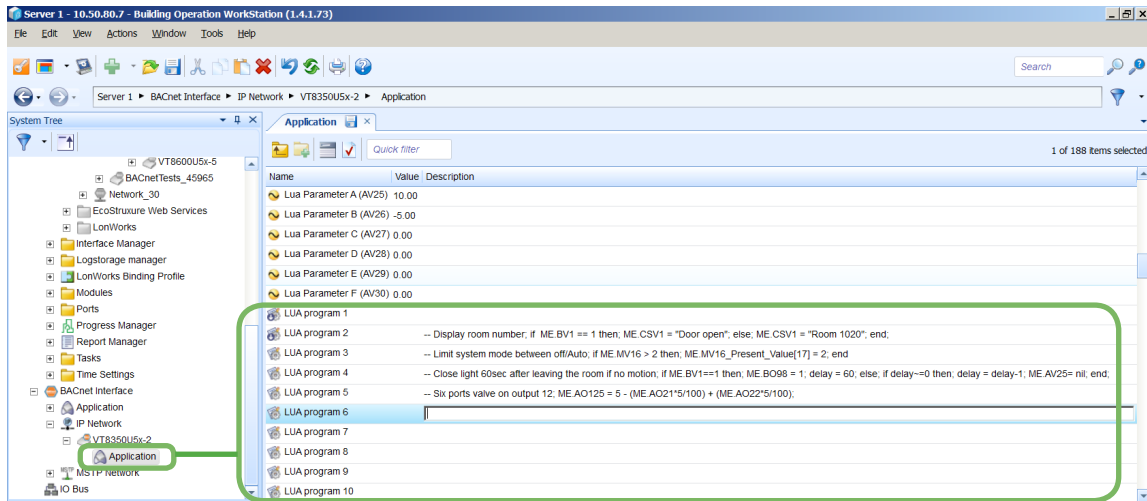
Viewing Objects in Lua Touch Screens

All PG Objects of the SE8300 Room Controller can easily be viewed through the touch screen display.

SE8300 Applications

Mixed Voltage Applications

The SE8300 Room Controller can be used for mixed-voltage applications by incorporating a SC1300 (110/130 V) or SC2300 (220/240 V) mixed-voltage relay. For SC1300/SC2300 relay pack features, consult the SC1300/SC2300 specification sheet.
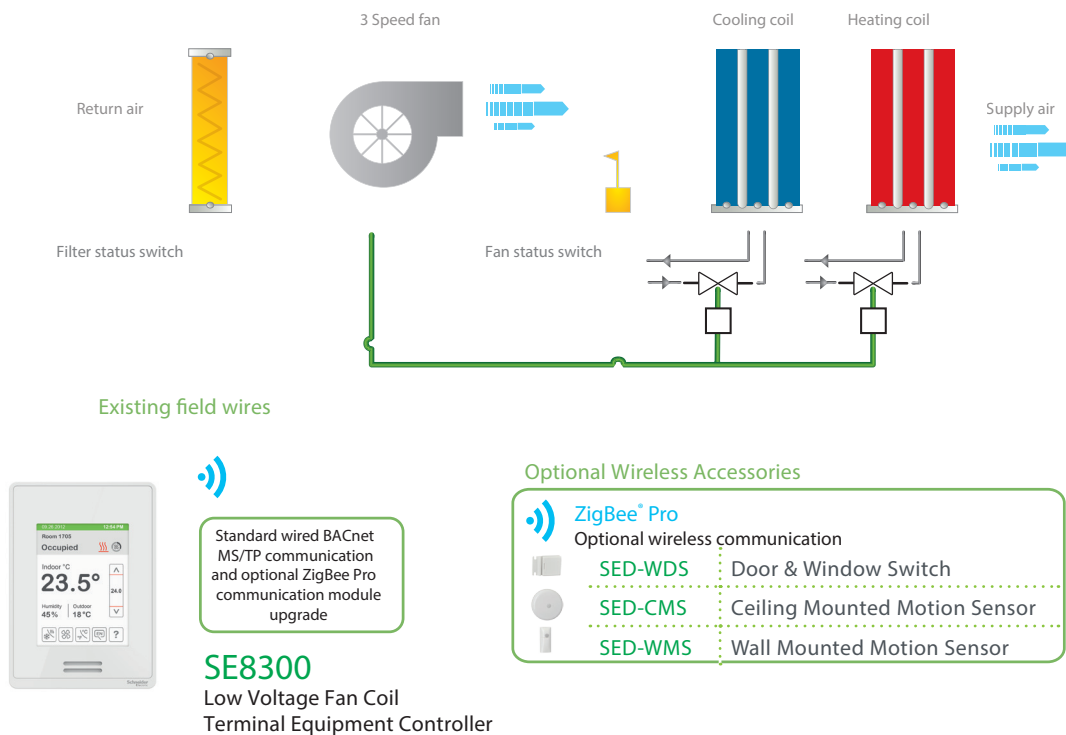
SE8300 as a Zone Controller

The SE83000 Room Controller can also be used as a Zone Controller to control ON/OFF, floating, or 0 to 10 Vdc heating or cooling terminal equipment such as pressure dependent VAVs, Valves, and other end devices.

The following are typical Zone Controller applications:

- Cooling only VVT zone with reheat
- Fin-tube radiators
- Cabinet heaters
- Radiant panel heaters
- Electric re-heat zones
- Terminal reheat

Typical Low Voltage Fan Coil Application

Return air

3 Speed fan

Cooling coil

Heating coil

Supply air

Filter status switch

Fan status switch

Existing field wires

Standard wired BACnet MS/TP communication and optional ZigBee Pro communication module upgrade

SE8300
Low Voltage Fan Coil
Terminal Equipment Controller

Optional Wireless Accessories

ZigBee® Pro
Optional wireless communication

SED-WDS	Door & Window Switch
SED-CMS	Ceiling Mounted Motion Sensor
SED-WMS	Wall Mounted Motion Sensor

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Typical Zone Controller Application

Cooling only VAV

Heating coil

Return air

To Difuser

Baseboard Reheat

SE8300
Low Voltage Fan Coil Controller

Room 1705
Occupied

Indoor °C
23.5°
24.0

Humidity 45% | Outdoor 18°C

Standard wired BACnet MS/TP communication and optional ZigBee Pro communication module upgrade

BACnet MS/TP
Wired communication protocol

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Specifications

Main Specifications

Item	Description
Dimensions	12cm/4.72in (H) x 8.6cm/3.38in (W) x 2.5cm/1in (D)
Power Requirements	Input: 24VAC ±15%, 50/60Hz Input: 24 - 28VAC 50/60Hz (with CO2 sensor module) Device consumption: up to 12VA Transformer maximum rating: 100VA, 4.17A
Output Ratings	Relay rating: 28Vac 50/60Hz, 1.0 Amp., in-rush = 3.0 Amps; pins 1, 2, 3, 4, 8, 9, 10 Digital optomos output rating: 28Vac 50/60Hz, 1.0 Amp., in-rush = 3.0 Amps; pins 9, 10, 11, 12 Analog: 0 - 10 Vdc in 2 kilo-ohm resistance minimum load (maximum 5mA); pins 9, 10, 11, 12
Operating Conditions	0 °C to 50 °C (32 °F to 122 °F) 0% to 75% R.H. non-condensing
Storage Conditions	-30 °C to 50 °C (-22 °F to 122 °F) 0% to 75% R.H. non-condensing
Temperature Sensor	Local 10 K NTC type 2 thermistor
Temperature Sensor Resolution	± 0.1 °C (± 0.2 °F)
Temperature Control Accuracy	±0.5 ° C (± 0.9 °F) @ 21 °C (70 °F) typical calibrated
Humidity Sensor and Calibration	Single point calibrated bulk polymer type sensor
Humidity Sensor Precision	Reading range from 10-90 % R.H. non-condensing 10 to 20% precision: 10% 20% to 80% precision: 5% 80% to 90% precision: 10%
Humidity Sensor Stability	Less than 1.0 % yearly (typical drift)
Dehumidification Setpoint Range	30% to 95% R.H.
Occ, Unocc and Standby Cooling Setpoint Range	12.0 to 37.5 °C (54 to 100 °F)
Occ, Unocc and Standby Heating Setpoint Range	4.5 °C to 32 °C (40 °F to 90 °F)
Room and Outdoor Air Temperature Display Range	-40 °C to 50 °C (-40 °F to 122 °F)
Proportional Band for Room Temperature Control	Cooling and Heating: Default: 1.8°C (3.2°F)
Analog Inputs	Modulating 0-10 VDC across UI19 to Common
Binary Inputs	Dry contact across terminals UI16, UI17 and UI19 to Common
Remote Temperature Sensor Requirements	10 K NTC type 2 thermistor
Wire Gauge	Power supply: 18 gauge or larger, Communications: 24 gauge or larger
Shipping Weight	0.34 kg (0.75 lb)

* Note: SE8300 models shipped before September 17th 2014 have the following Output Ratings:

- Optomos output: 30 AC/DC, 0.5 Amp. (above 25 °C, reduce by 5mA/°C)

Room Controller Input Power

Usage of the CO_2 sensor module within the Room Controller draws additional power. It is recommended when using the CO_2 sensor module, the site transformer be capable to accommodate the additional power consumption. Room Controller power consumption of 12 VA and input voltage range of 24 - 28 VAC is required.

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Safety and Certifications

Item	Description
Safety Standards (all models)	LVD Directive 2006/95/EC EN 60950-1:2006/A2:2013UL 873 CSA C22.2 No. 24-93
EMC Standards (all models)	EMC Directive 2004/108/EC IEC 61326-1:2005 FCC 15 Subpart B ICES-003
Radio Standards (wireless models)	R&TTE Directive 1999/5/EC ETSI EN 300 328 V1.8.1 ETSI EN 301 489-1 V1.9.2 ETSI EN 301 328 V1.8.1 FCC 15 Subpart C RSS 210
Storage Conditions	-30 °C to 50 °C (-22 °F to 122 °F) 0% to 75% R.H. non-condensing
Shipping Weight	0.34 kg (0.75 lb)

Disclaimer

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
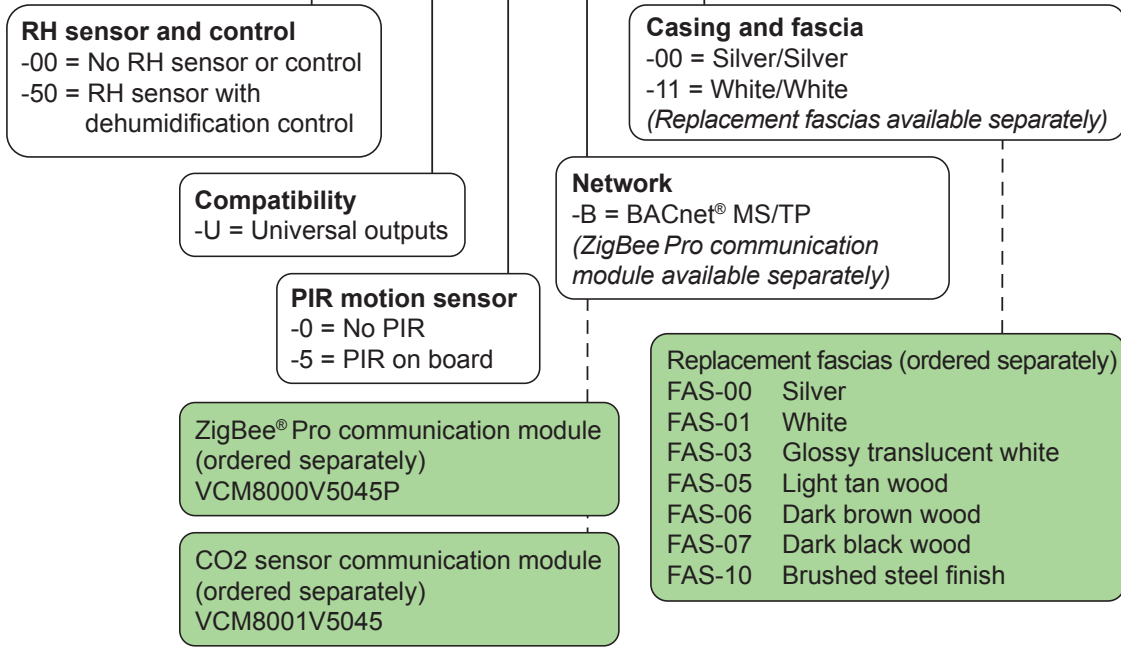
THIS PRODUCT FOR COMMERCIAL USE ONLY

Check with your local government for instruction on disposal of these products.

Dimensions

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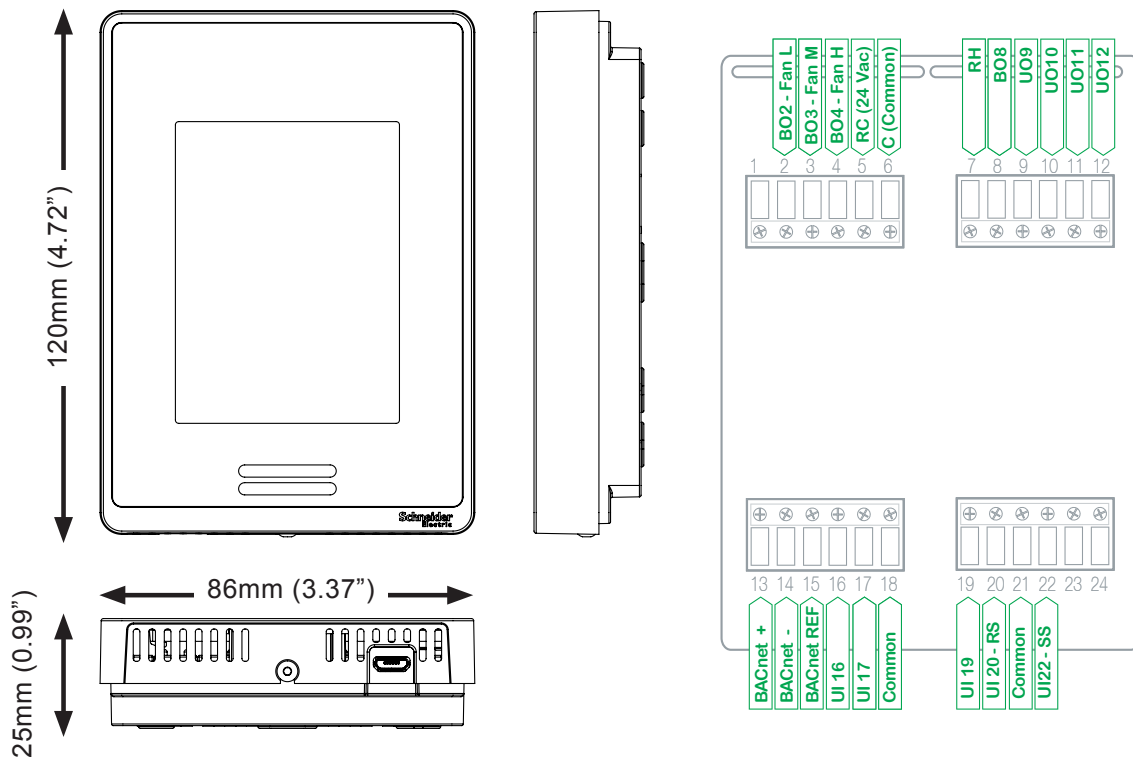
Ordering Information

SE83 [5] [0] [U] [5] [B] [0] [0]

RH sensor and control
-00 = No RH sensor or control
-50 = RH sensor with
dehumidification control

Compatibility
-U = Universal outputs

PIR motion sensor
-0 = No PIR
-5 = PIR on board

ZigBee® Pro communication module
(ordered separately)
VCM8000V5045P

CO2 sensor communication module
(ordered separately)
VCM8001V5045

Casing and fascia
-00 = Silver/Silver
-11 = White/White
(Replacement fascias available separately)

Network
-B = BACnet® MS/TP
*(ZigBee Pro communication
module available separately)*

Replacement fascias (ordered separately)
FAS-00   Silver
FAS-01   White
FAS-03   Glossy translucent white
FAS-05   Light tan wood
FAS-06   Dark brown wood
FAS-07   Dark black wood
FAS-10   Brushed steel finish

Part numbers

SE8300 part numbers	RH sensor & control	PIR motion sensor	Silver casing & fascia	White casing & fascia
SE8300U0B00			x	
SE8350U0B00	x		x	
SE8300U5B00		x	x	
SE8350U5B00	x	x	x	
SE8300U0B11				x
SE8350U0B11	x			x
SE8300U5B11		x		x
SE8350U5B11	x	x		x

Fascias

Communication modules and fascias

Consult fascia data sheets for the latest available part numbers and features.

VCM8000V5045P Communication Module Versions

• All ZigBee Pro communication modules shipped after December 15, 2016 are Version 9 (V9) modules. The SE8300 Room Controller must also be running Firmware version 1.5.1 or later to activate CO_2 Sensor Module functionality.

• The SE8300 Room Controller must also be running Firmware version 1.7 or later to enable the ZigBee Green Power protocol.

• Version 10 of the ZigBee Pro communication module is required to enable features for Firmware version 1.7

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