Room Controller

SE8300 Low Voltage Fan Coil Controller and Zone Controller

Application specific controller with customizable covers and screen colours. The SE8300 is a low voltage fan coil terminal equipment controller suitable for commercial and high end hospitality markets. It can also be used as a zone controller.

Schneider Electric

SE8300 Room Controller Features

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

Introduction

Smart energy management has never been easier than with the SE8300 series Fan Coil Room Controllers. 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 in order 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 HVAC, lighting and other applications. The Room Controllers are specifically designed to provide exceptional temperature control of multi-speed Fan Coil units. When compared to traditional building automation controllers, the SE8300 series Fan Coil Room Controllers provide unmatched return on investment.

Touch screen with customizable user experience

The touch screen of the SE8300 offers a customizable user experience with selection of languages, temperature scales, buttons, and screen colours. 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 is integrated to a BACnet system.

Selectable languages

Select from the following 20 languages: English, French, Spanish, Chinese, Russian, Arabic, Czech, Danish, Dutch, Finnish, German, Hungarian, Indonesian, Italian, Norwegian, Polish, Portuguese, Slovak, Swedish and Turkish.

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 uses advanced occupancy routines to generate automatic energy savings during occupied and unoccupied periods without sacrificing occupant comfort.

AT A GLANCE

Custom design

- Touch screen interface
- 2 casing options
- Multiple fascia options
- 5 selectable screen colors
- Supports the upload of a custom standby screen
- Supports the display of custom messages when integrated to a BACnet system
- English, French, Spanish, Chinese, Russian and other selectable languages
- Interchange between °C/°F
- Advanced scheduling functions

Options and accessories

- On-board optional occupancy sensor (optional)
- RH sensor with dehumidification control (optional)
- Can be used with ZigBee Pro wireless sensors
- Free downloadable Uploader SE8000 tool for the upload of Lua Scripts, standby screen images, and firmware upgrades, using a USB/ Micro-USB cable
- Can be used with SC1300/SC2300 relay for mixed voltage applications

SE8300 Room Controller Features

Product Highlights
- Suitable for both commercial and hospitality markets and systems
- Customizable colour 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.
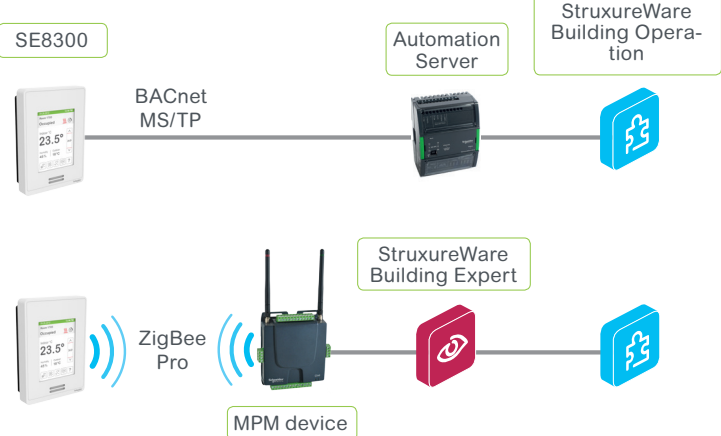
Supported Networking Protocols
- BACnet MS/TP (B) (selectable)
- Modbus (B) (selectable)
- ZigBee Pro wireless mesh network (P) (optional)

Integration to Schneider Electric Systems
- SE8300 can be integrated to SmartStruxure™ Lite, SmartStruxure, and other Schneider Electric systems.
- Wireless integration to MPM devices (P)
- Wireless integration to BACnet IP, oBIX and EWS via MPM devices (P)
- Direct wired integration to BACnet MS/TP (B)
- Direct wired integration to Modbus (B)

Architects can custom match styling to decor
- Select from 2 casings and multiple fascias
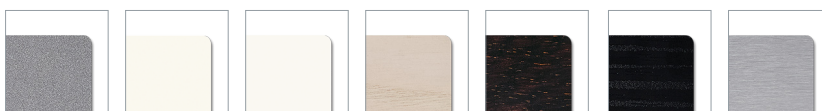- Five screen colors are also selectable through the interface

INTEGRATION

SE8300

BACnet MS/TP

Automation Server

StruxureWare Building Operation

ZigBee Pro

StruxureWare Building Expert

MPM device

CUSTOM STANDBY SCREEN & MESSAGES

> Custom standby screen

> Custom BACnet MS/TP messages

> 5 configurable screen color schemes

> Multiple fascias

	Silver finish	White	Glossy white	Light tan wood	Dark brown wood	Dark black wood	Brushed steel finish
> 2 casings							
White							
Silver							
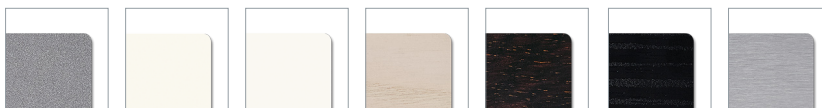
SE8300 Room Controller Features

Programming the SE8300 with Lua

The SE8300 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 interopreability 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.
• BACnet MS/TP integration into BMS
• 10 Program BACnet objects (Lua scripts)
• Each object can contain 480 characters max.

Programming without Integration

When there is no BACnet MS/TP integration, a Lua script can be uploaded directly into the SE8300 unit using the Uploader SE8000 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.
• No BACnet MS/TP integration
• 1 Lua script of 16KB max.
• Uploader SE8000: upload scripts using this PC software tool and a USB/Micro-USB cable

Applications: HVAC 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.
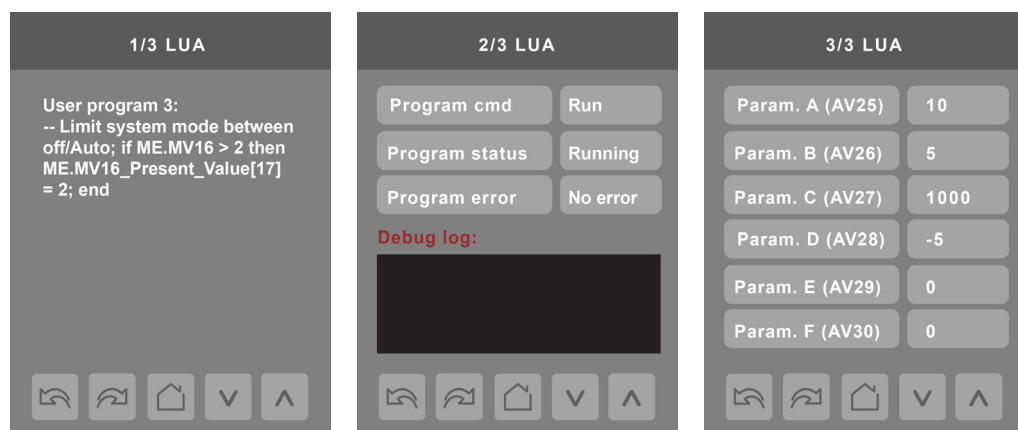
Uploader SE8000

Lua scripts, standby screen images and firmware upgrades can be loaded into the SE8300 using the Uploader SE8000 tool and a USB/Micro-USB cable.

> PG objects of the SE8300 viewed through a BMS
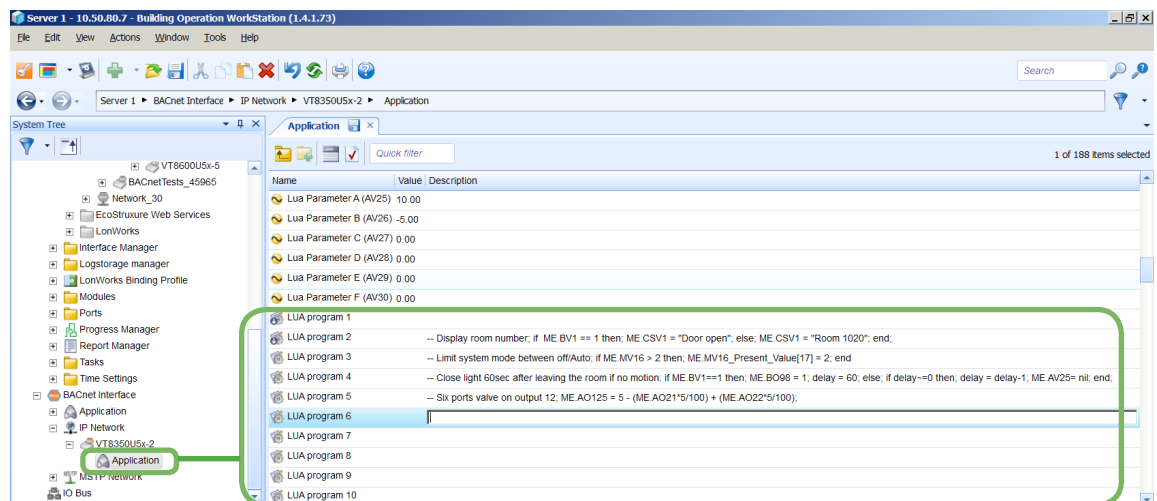
> PG objects of the SE8300 viewed through its touch-screen display

SE8300 Room Controller Features

Mixed-Voltage Applications SC1300/SC2300

The SE8300 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.
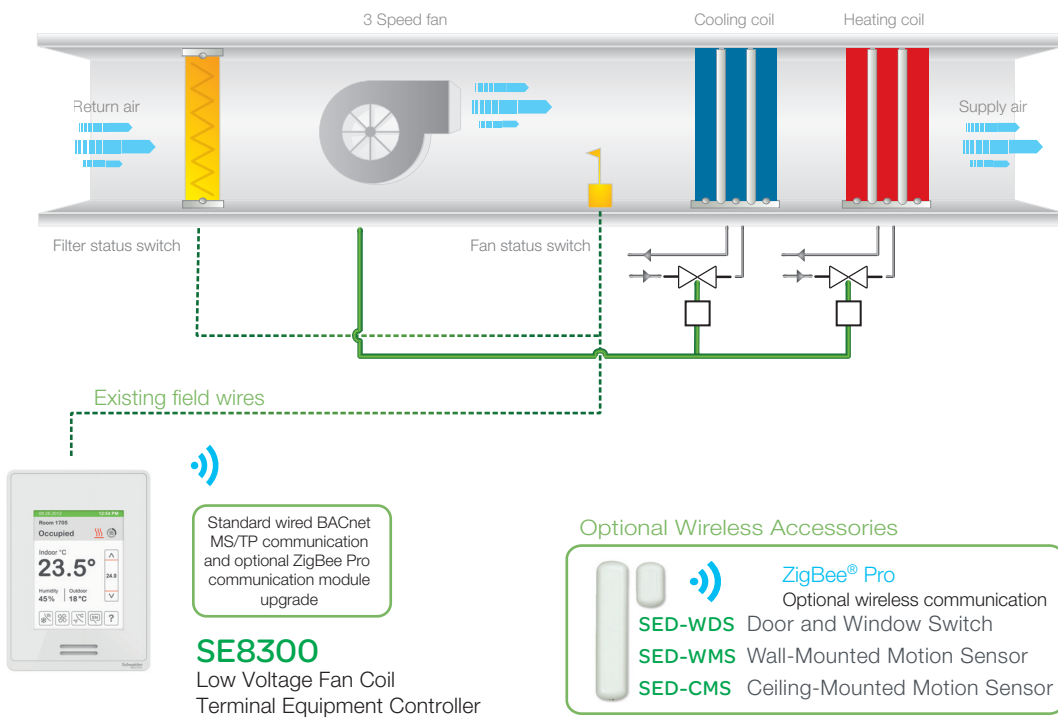
SE8300 as a Zone Controller

The SE83000 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.

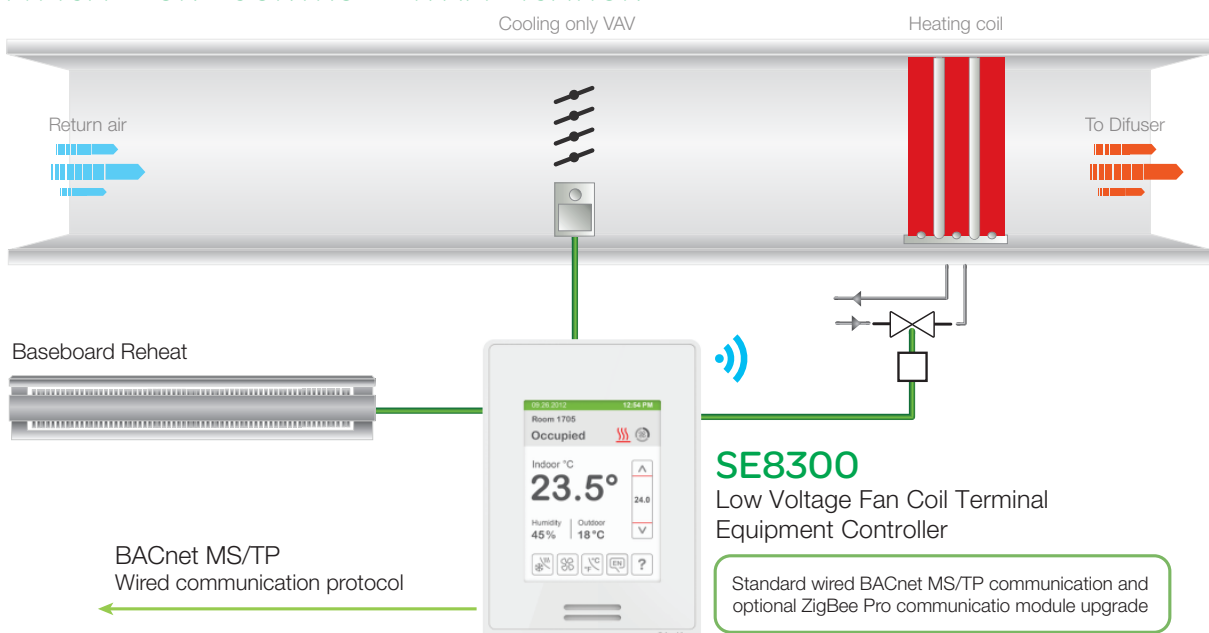The following list shows common Zone Controller applications:

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

The above options are similar to those provided by the SE7200 series Room Controllers.

TYPICAL LOW VOLTAGE FAN COIL APPLICATION

3 Speed fan | Cooling coil | Heating coil

Return air

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 and Window Switch
SED-WMS Wall-Mounted Motion Sensor
SED-CMS Ceiling-Mounted Motion Sensor

TYPICAL ZONE CONTROLLER APPLICATION

Cooling only VAV | Heating coil

Return air

To Diffuser

Baseboard Reheat

BACnet MS/TP
Wired communication protocol

SE8300
Low Voltage Fan Coil Terminal Equipment Controller

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

SE8300 Room Controller Specifications

Specifications

SE8300

Dimensions
12cm/4.72in (H) x 8.6cm/3.38in (W) x 2.5cm/1in (D)

Power Requirements
Input: 24Vac ±15%, 50/60Hz
Device consumption: 6 VA
Maximum rating: 100 VA, 4.17 A

Output Ratings
Maximum total output: 94 VA

Relay rating: 28 Vac 50/60Hz, 1.0 Amp., in-rush = 3.0 Amps; pins 1, 2, 3, 4, 5, 8, 9

Digital optomos output rating: 28 Vac 50/60Hz, 0.3 Amp., in-rush = 1.5 Amps; pins 9, 10, 11, 12

Analog: 0 - 10 Vdc in 2 kilo-ohm resistance minimum load (maximum 5 mA); pins 9, 10, 11, 12

Operating Conditions
0 °C - 50 °C (32 °F - 122 °F)
0% - 75% R.H. non-condensing

Storage Conditions
-30 °C - 50 °C (-22 °F - 122 °F)
0% - 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% - 95% R.H.

Occ, Stand-By and Unocc Cooling Setpoint Range
12.0 - 37.5 °C (54 - 100 °F)

Occ, Stand-By and Unocc Heating Setpoint Range
4.5 °C - 32 °C (40 °F - 90 °F)

Room and Outdoor Air Temperature Display Range
-40 °C - 50 °C (-40 °F - 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 UI 16, UI 17 and UI 19 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

Approximate Shipping Weight
0.34 kg (0.75 lb)

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
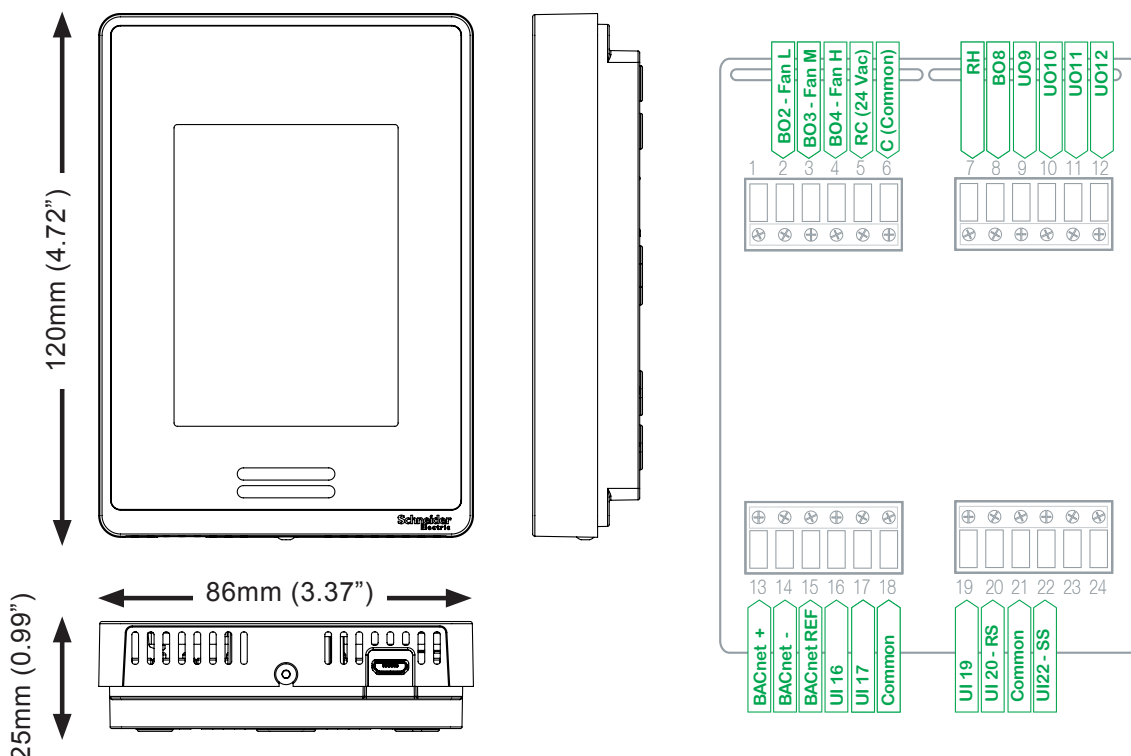 ETSI EN 301 328 V1.8.1
FCC 15 Subpart C
RSS 210

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.

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

Dimensions

120mm (4.72")
86mm (3.37")
25mm (0.99")

1	2	3	4	5	6
	BO2 - Fan L	BO3 - Fan M	BO4 - Fan H	RC (24 Vac)	C (Common)

7	8	9	10	11	12
RH	BO8	UO9	UO10	UO11	UO12

13	14	15	16	17	18
BACnet +	BACnet -	BACnet REF	UI 16	UI 17	Common

19	20	21	22	23	24
UI 19	UI 20 - RS	Common	UI22 - SS		

* 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 5mAmp/°C)
Analog: 0 - 10 Vdc in 2 kilo-ohm resistance minimum load (maximum 5 mA)

SE8300 Room Controller Ordering Information

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

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

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

Part numbers

Communication modules and Fascias

Consult their respective datasheets for the latest available part numbers and features