SE8300 Room Controller
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.
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.
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

> 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
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 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.

- BACnet MS/TP integration into BMS
- 10 Program BACnet objects (Lua scripts)
- Each object can contain maximum of 480 characters

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.
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 SE8300 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**

- **SE8300**
  - Low Voltage Fan Coil Terminal Equipment Controller

**TYPICAL ZONE CONTROLLER APPLICATION**

- **SE8300**
  - Low Voltage Fan Coil Terminal Equipment Controller

**Optional Wireless Accessories**

- **ZigBee® Pro**
- **SED-WDS** Door & Window Switch
- **SED-CMS** Ceiling Mounted Motion Sensor
- **SED-WMS** Wall Mounted Motion Sensor

**SE8300**

- Low Voltage Fan Coil Terminal Equipment Controller
- Standard wired BACnet MS/TP communication and optional ZigBee Pro communication 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
Input: 24 - 28VAC 50/60Hz (with CO₂ sensor module)
Device consumption: up to 12 VA
Transformer maximum rating: 100 VA, 4.17 A

Output Ratings
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 kило-ohm resistance minimum load (maximum 5 mA); 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: 1%

Humidity Sensor Stability
Less than 1.0 % yearly (typical drift)

Dehumidification Setpoint Range
30% to 95% R.H.

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

Occ, Stand-By and Unocc 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

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.

THIS PRODUCT FOR COMMERCIAL USE ONLY

Room Controller Input Power

Usage of the CO₂ sensor module within the Room Controller draws additional power. It is recommended when using the CO₂ 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.
25mm (0.99")

120mm (4.72")

86mm (3.37")

* 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)
- **Analog:** 0 - 10 Vdc in 2 kilo-ohm resistance minimum load (maximum 5 mA)
SE8300 Room Controller Ordering Information

Ordering information

SE8350U5B00

<table>
<thead>
<tr>
<th>RH sensor and control</th>
<th>Casing and fascia</th>
<th>Compatibility</th>
<th>Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>-00 = No RH sensor or control</td>
<td>-00 = Silver/Silver</td>
<td>-U = Universal outputs</td>
<td>-B = BACnet® MS/TP</td>
</tr>
<tr>
<td>-50 = RH sensor with dehumidification control</td>
<td>-50 = RH sensor with dehumidification control</td>
<td>(Replacement fascias available separately)</td>
<td>(ZigBee Pro communication module available separately)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PIR motion sensor</th>
<th>CO2 sensor communication module</th>
<th>ZigBee® Pro communication module</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0 = No PIR</td>
<td>(ordered separately)</td>
<td>(ordered separately)</td>
</tr>
<tr>
<td>-5 = PIR on board</td>
<td>VCM8000V5045P</td>
<td>VCM8000V5045P</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Replacement fascias (ordered separately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAS-00 Silver</td>
</tr>
<tr>
<td>FAS-05 Light tan wood</td>
</tr>
<tr>
<td>FAS-10 Brushed steel finish</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing and fascia</th>
<th>Replacement fascias (ordered separately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-00 = Silver/Silver</td>
<td>FAS-00 Silver</td>
</tr>
<tr>
<td>-11 = White/White</td>
<td>FAS-01 White</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE8300U0B00</td>
</tr>
<tr>
<td>RH sensor &amp; control</td>
</tr>
<tr>
<td>x</td>
</tr>
</tbody>
</table>

VCM8000V5045P Module Versions

All VCM8000 ZigBee Pro modules shipped after December 15, 2016 are Version 9 (V9) modules. The V9 module is required for the SE8300 Room Controller to activate functionality of the CO2 Sensor Module. The SE8300 Room Controller must also be running Firmware version 1.5.1 to activate CO2 Sensor Module functionality.