

Room Controller

VT8300 Low Voltage Fan Coil Controller and Zone Controller

Technical Cut Sheet

Programmable and application specific controller with customizable screen colors. The VT8300 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.



VT8300 Room Controller Features



The perfect balance between simplicity and sophistication. An elegantly simple casing combines with 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.

Introduction

Smart energy management has never been easier than with the VT8300 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 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 VT8300 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 Room Controllers, the VT8300 series Fan Coil Room Controllers provide unmatched return on investment.

Touch Screen with Customizable User Experience

The touch screen of the VT8300 offers a customizable user experience with selection of languages, temperature scales, buttons, and screen colors. 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 VT8300 is integrated to a BACnet 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 VT8000 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
- 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 VT8000 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

Integration

- Multiple options for integration to Building Management Systems (BMS)

VT8300 Room Controller Features

Product Highlights

- Suitable for both commercial and hospitality markets and systems
- 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
- 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) (default model)
- ZigBee Pro wireless mesh network (P) (optional)

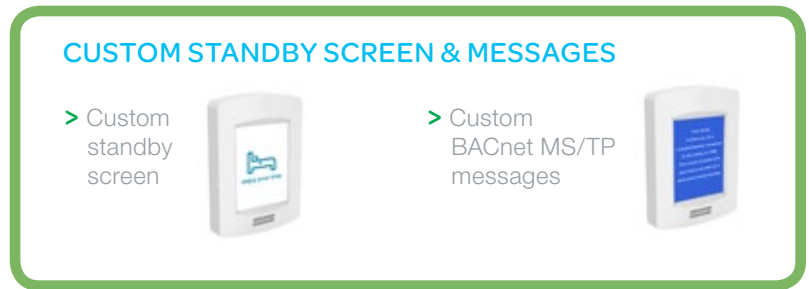
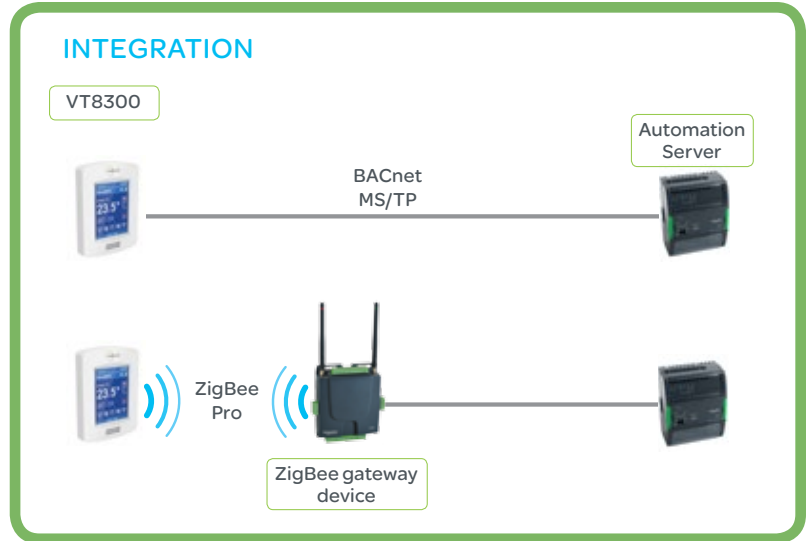
Integration to Schneider Electric Systems

VT83000 can be integrated to SmartStruxure™ Lite, SmartStruxure, and other Schneider Electric systems.

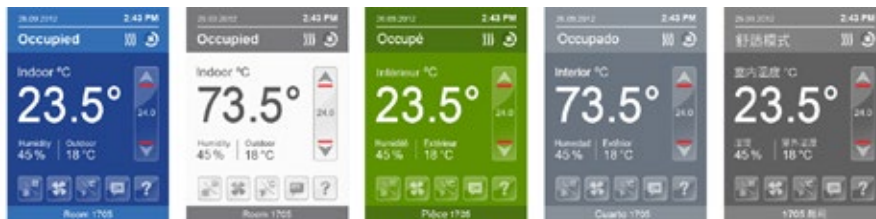
- Wireless integration to MPM devices (P)
- Wireless integration to BACnet IP, oBIX and EWS via MPM devices (P)
- Direct wired integration to BACnet MS/TP (B)

Architects and Designers Can Match their Decor

- Five screen colors are also selectable through the interface
- Customizable standby screen and messages



- > 5 configurable screen color schemes



VT8300 Room Controller Features

Programming the VT8300 with Lua

The VT8300 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 VT8300 Room Controllers use of an open language enables interoperability with all systems.

Programming with BMS Integration

When integrated into a BACnet MS/TP building management system, the VT8300 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 VT8300 unit using the Uploader VT8000 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 VT8000: upload scripts using this PC software tool and a USB/Micro-USB cable

Applications for HVAC and Beyond

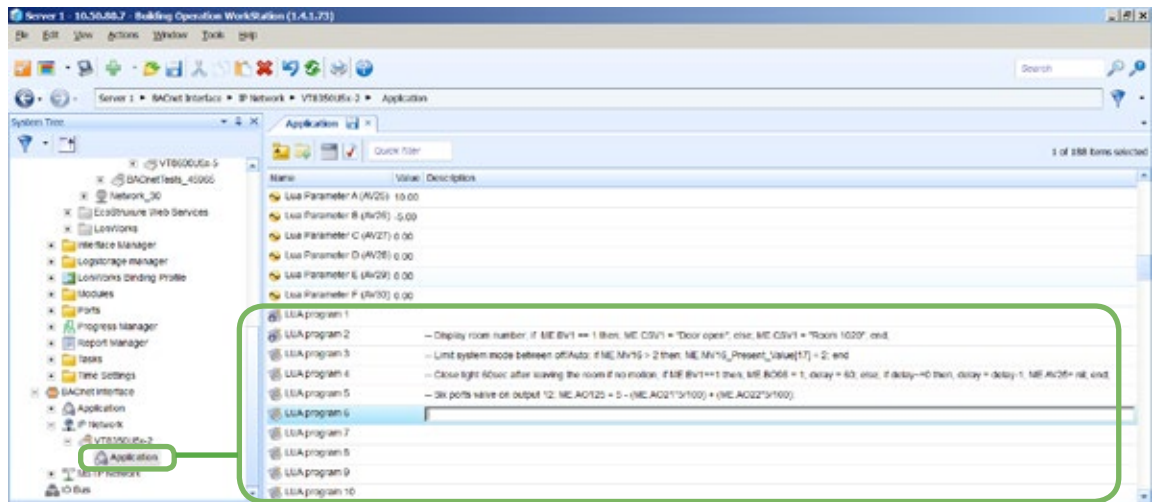
Programming can be used to go beyond the pre-configured control sequences of the VT8300 to create customized HVAC applications. It can also be used to comply with specific project requirements and manage other applications, such as Lighting and other equipment.

Using Lua scripts also enables you to take advantage of the extra inputs and outputs of the VT8300 to manage other devices, such as Sensors and Relays.

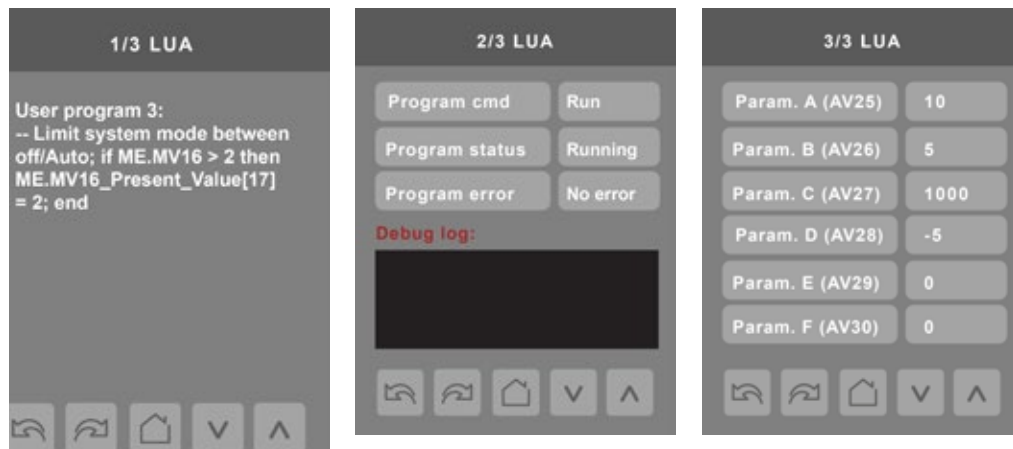
Uploader VT8000

Lua scripts, standby screen images and firmware upgrades can be loaded into the VT8300 using the Uploader VT8000 tool and a USB/Micro-USB cable.

> PG objects of the VT8300 viewed through a BMS



> PG objects of the VT8300 viewed through its touch-screen display



VT8300 Room Controller Features

Mixed-Voltage Applications SC1300/SC2300

The VT8300 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.



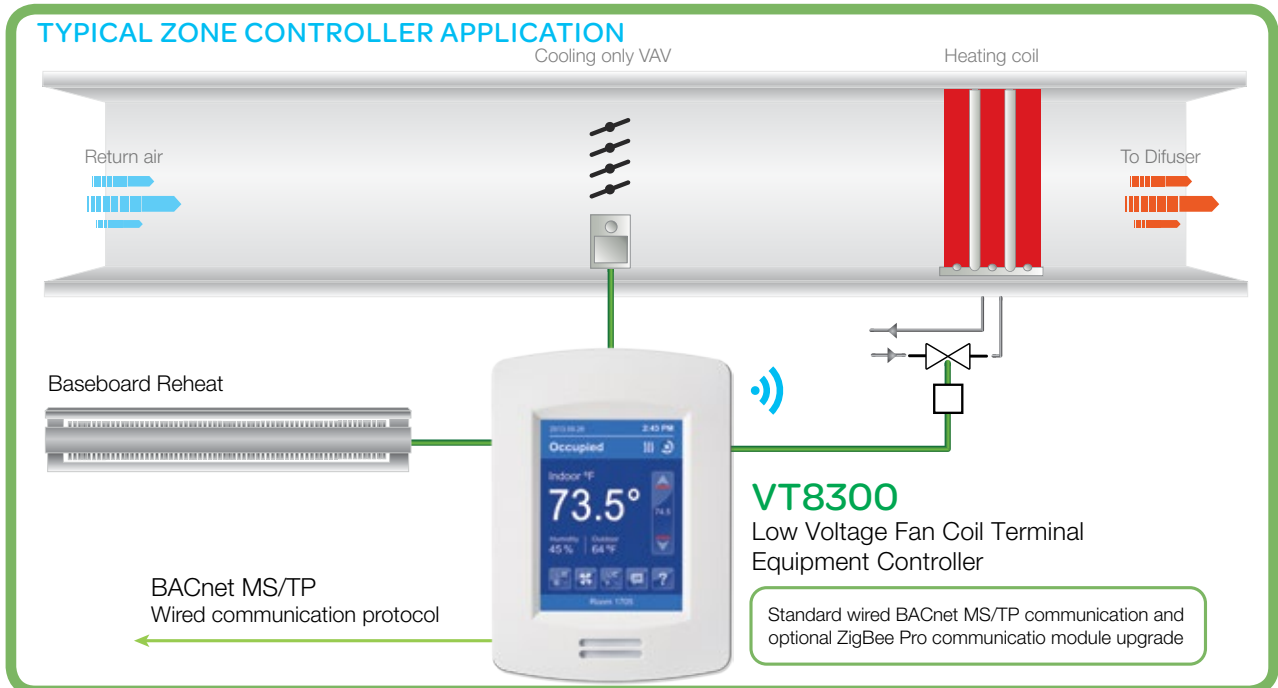
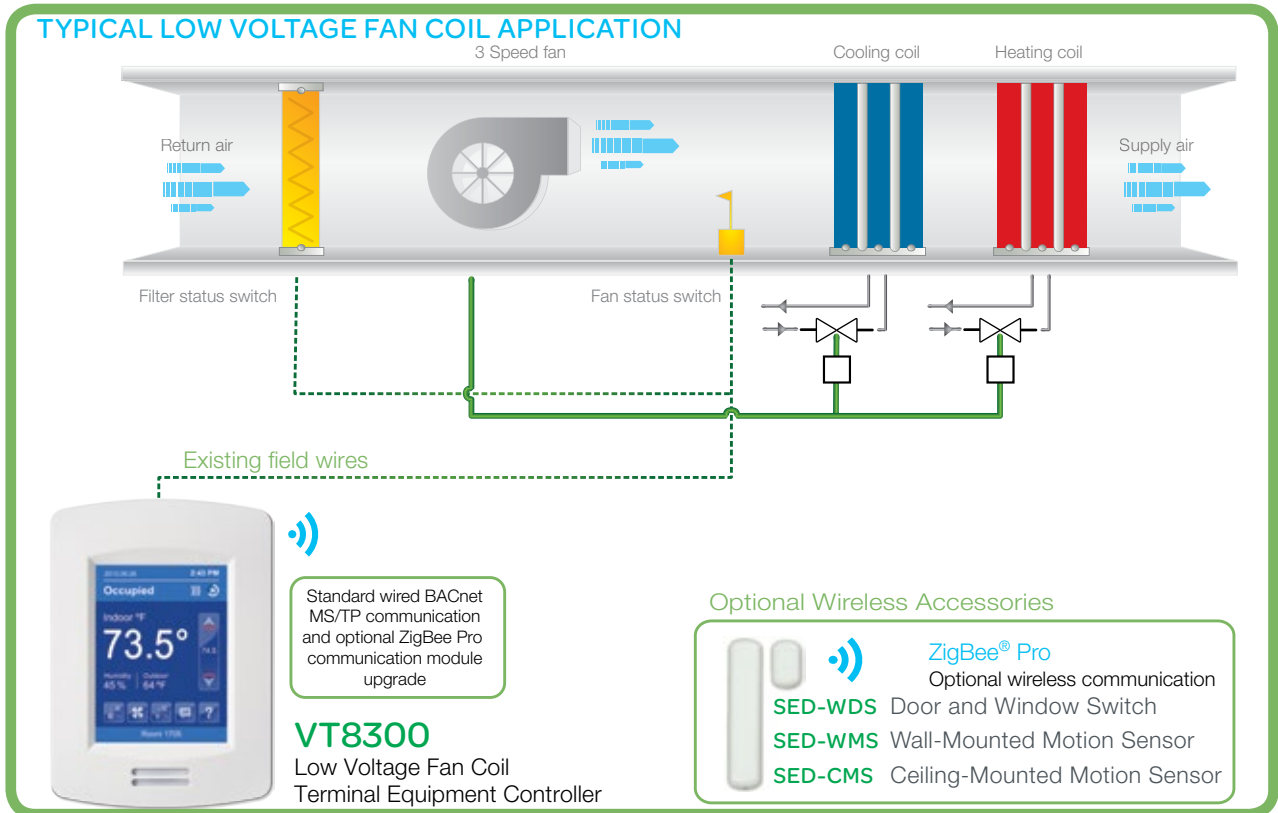
Cooling only VVT zone with reheat

- Fin-tube radiators
- Cabinet heaters
- Radiant panel heaters
- Electric re-heat zones
- Pressure dependent VAV system
- Terminal reheat

VT8300 as a Zone Controller

The VT8300 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 above options are similar to those provided by the VT7200 series Room Controllers.



VT8300 Room Controller Specifications

Specifications

VT8300

Dimensions

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

Power Requirements

Input: 24Vac \pm 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% - 95% R.H. non-condensing

Storage Conditions

-30 °C - 50 °C (-22 °F - 122 °F)

0% - 95% 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 UI16, UI17 and UI19 to Common

Remote Temperature Sensor Requirements

10 K NTC type 2 thermistor

Wire Gauge

16 gauge maximum, 22 gauge recommended, 24 gauge minimum

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

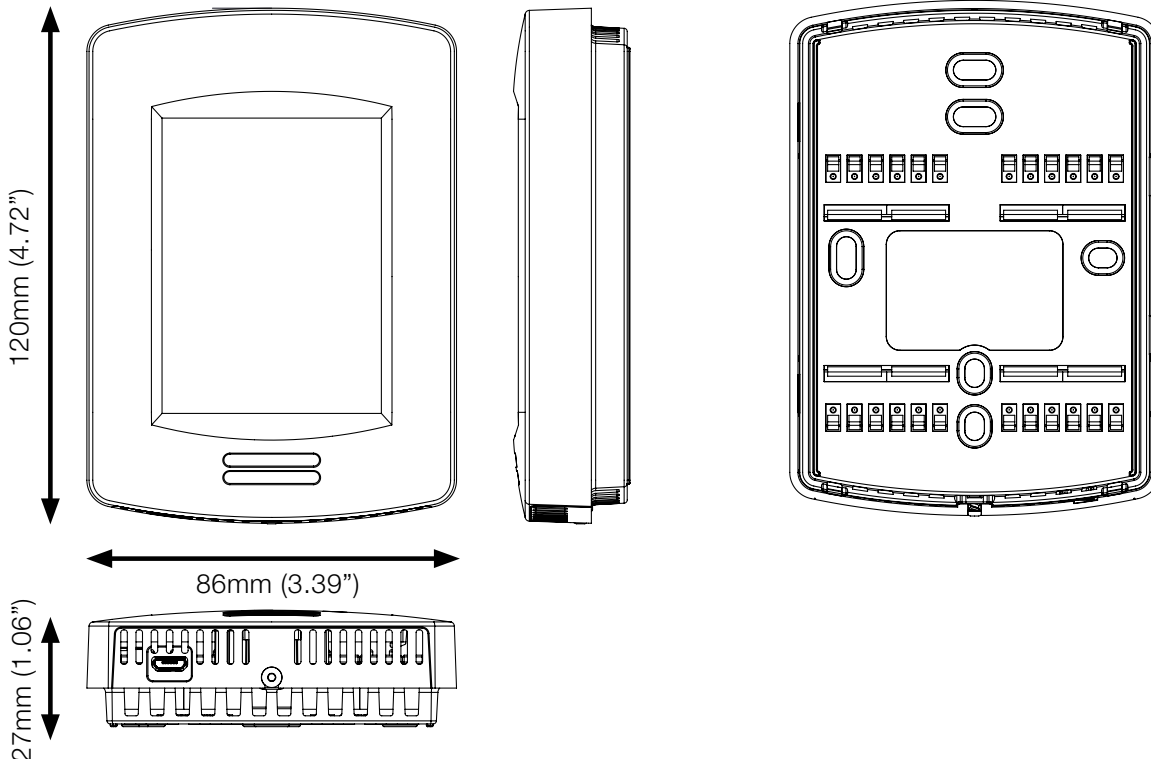
RSS 210

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 UNDESIRABLE OPERATION.



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

Dimensions



* Note: VT8300 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)

VT8300 Room Controller Ordering Information

Ordering information

VT8300 **U** 5 **5** 000 **B**

Compatibility
-U = Universal outputs

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

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

ZigBee® Pro communication module (ordered separately)
VCM8000V5045P

Part numbers

VT8300 Part numbers	RH sensor & control	PIR motion sensor
VT8300U5000B		
VT8350U5000B	x	
VT8300U5500B		x
VT8350U5500B	x	x

Part numbers

For **Communication modules**
Consult their respective datasheets for the latest available part numbers and features