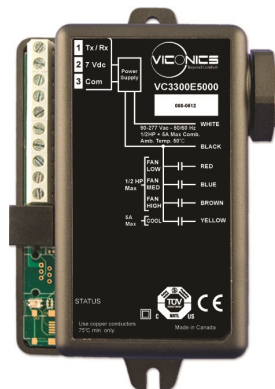


# Room Controllers

## VTR8300 Line Voltage Fan Coil Controller with VC3000 Relay Pack

### Technical Cut Sheet

Application specific room controller with customizable screen colors. The VTR8300 is a line-voltage fan coil terminal equipment controller with relay pack. Suitable for both commercial and high end hospitality markets.





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

This two component retrofit option consists of the VTR8300 room controller and the VC3000 relay pack. Together, they provide an easy solution for retrofitting fan coil unit thermostats without requiring other components such as relays, transformers, controllers, sensors, and network wiring to be upgraded. Existing line voltage wiring between the fan coil unit and room controller can be reused to further minimize overall labor and installation costs for both retrofit and new construction control projects. Additional flexibility and energy savings can be achieved with optional wireless door and window switches.

## Application specific and programmable

The VTR8300 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 room controllers, the VTR8300 series fan coil room controllers provide unmatched return on investment.

## Touch screen with customizable user experience

The touch screen of the VTR8300 offers a customizable user experience with selection of languages, units, 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 VTR8300 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 VTR8300 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 with customizable user experience
- 5 selectable screen colors out of the box
- Supports the upload of a custom standby screen
- Supports the display of custom messages when integrated to a BACnet system
- English, French, Spanish, Chinese and other languages selectable out of the box
- One touch changes °C / °F

### Options and accessories

- VC3000 relay pack to interface with line-voltage fan coil
- On-board PIR 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

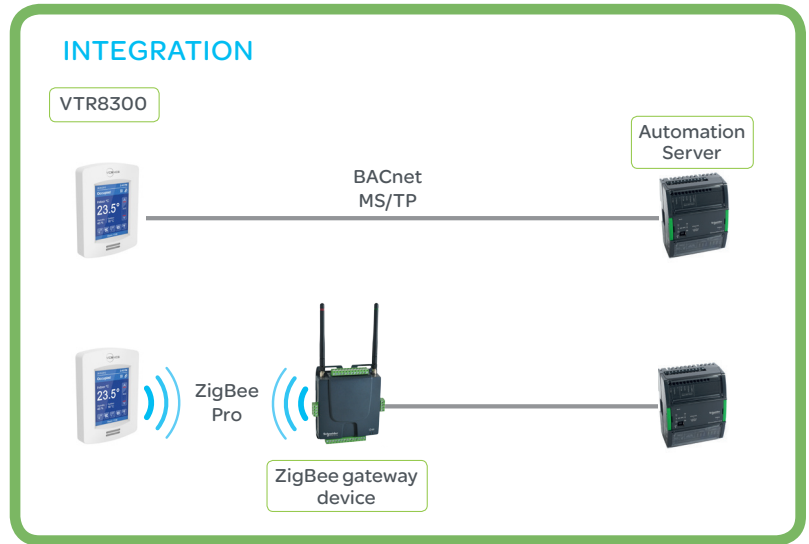
### Integration

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

# VTR8300 Room Controller and VC3000 Relay Pack 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
- Humidity sensor with on-board dehumidification strategy (model dependent)
- Optional occupancy sensor cover
- Advanced occupancy functions for commercial and lodging applications
- Optional wireless door and window switches available for wireless communicating models only
- Configurable fan sequence of operation
- On board configuration interface utility
- Configurable scheduler
- Change of value (COV) function for BMS integration



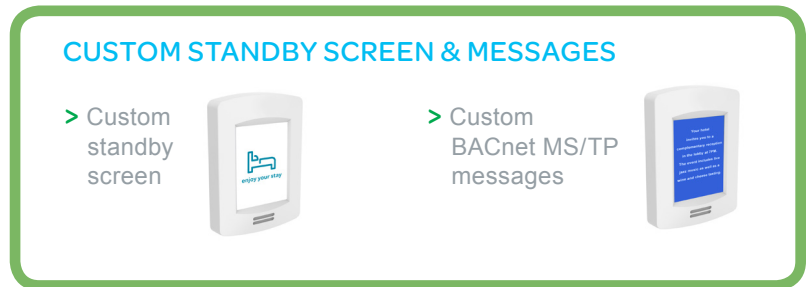
## Networking between VTR8300

- ZigBee PRO wireless mesh network (P)
- BACnet MS/TP (B)

## Integration to BMS systems

VTR8300 can be integrated with Building Management Systems

- Direct wired integration to BACnet MS/TP
- ZigBee Pro integration to ZigBee gateway device
- ZigBee gateway device integration to BACnet IP, oBIX, and EWS



## VC3000

For VC3000 relay pack features consult the VC3000 datasheet.



## Architects and designers can match their decor

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

> 5 configurable screen colors



# VTR8300 Room Controller and VC3000 Relay Pack Features

## Programming the VTR8300 with Lua

The VTR8300 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 VTR8300 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 VTR8300 offers 10 Program BACnet objects, each able to contain 480 characters. 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 to the VTR8300 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 to upload scripts using PC software tool and a USB/Micro-USB cable

## HVAC applications and beyond

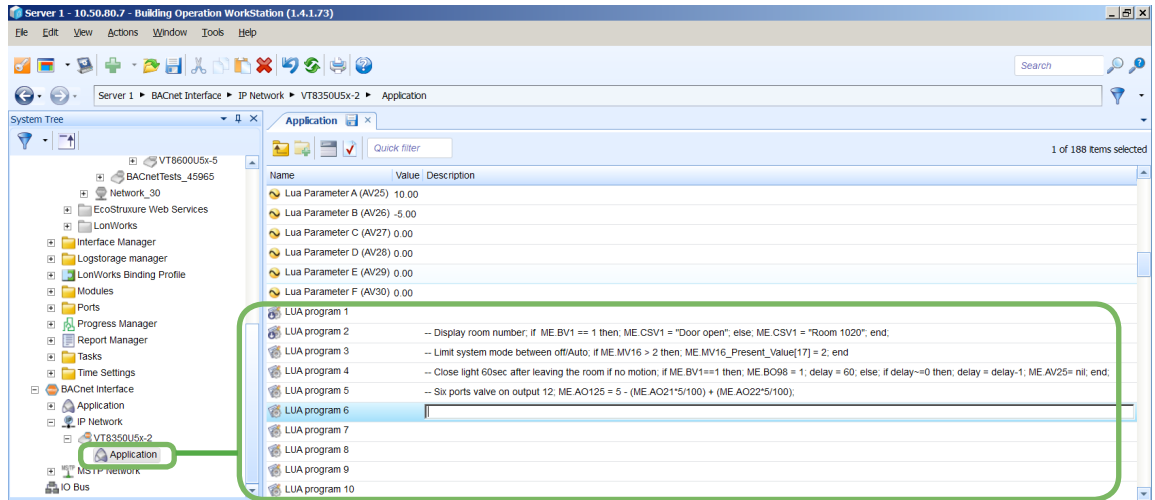
Programming can be used to go beyond the pre-configured control sequences of the VTR8300 to create customized HVAC applications. It can also be used to comply with specific project requirements and manage other applications, such as lighting and other equipment.

Using Lua scripts enables you to take advantage of the extra inputs and outputs of the VTR8300 to manage other devices, such as sensors and relays.

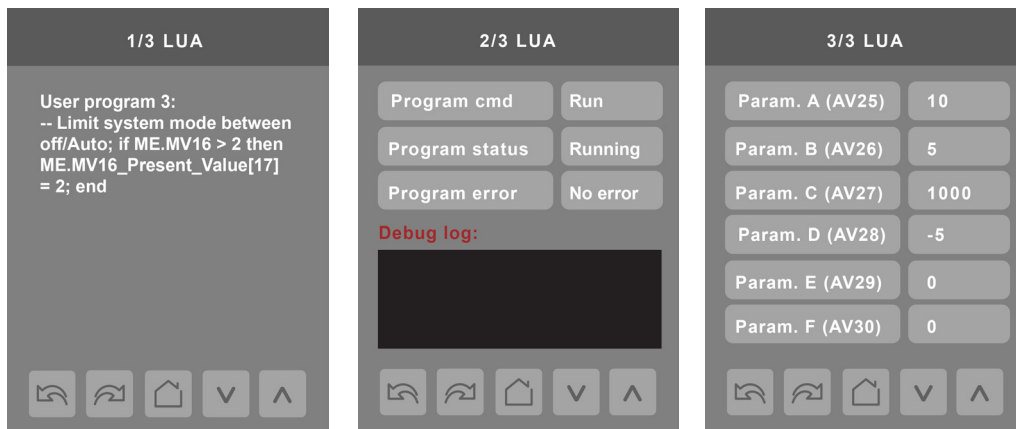
## Uploader VT8000

Lua scripts, standby screen images and firmware upgrades can be loaded to the VTR8300 using the Uploader VT8000 tool and a USB/Micro-USB cable.

> PG objects of the VTR8300 viewed through a BMS



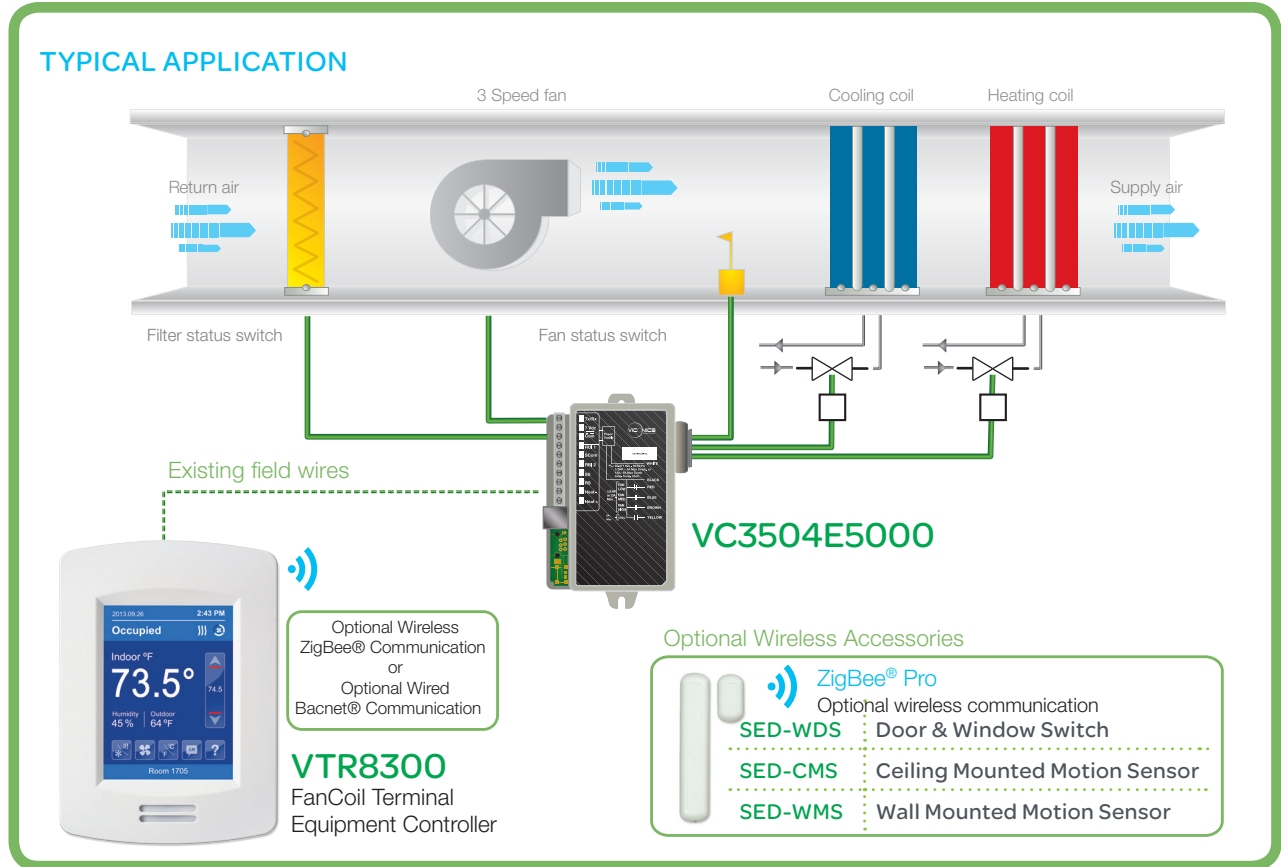
> PG objects of the VTR8300 viewed through its touch-screen display



# VTR8300 Room Controller and VC3000 Relay Pack Features

## Line Voltage Fan Control Units

The VTR8300 is configured to manage up to 10 different VC3000 relay packs, each controlling a line voltage fan coil installation. The diagram below shows an example of a typical line voltage fan coil application and how it would be wired to the relay pack controlled by the VTR8300.



## Specifications

### VTR8300 and VC3000

#### Dimensions

Height: 12cm/4.72in

Width: 8.6cm/3.39in

Depth: 2.7cm/1.06in

#### VC3000 Power Requirements

90 - 277 Vac universal, 50/60Hz

#### VTR8300 Power Requirements (supplied by VC3000)

7 Vdc

2.4 watts minimum

#### 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 & Heating: Default: 1.8°C ( 3.2°F )

#### Binary Inputs

Dry contact across terminal BI1,

BI2 and UI3 to Scom

#### Wire Gauge

Power supply: 18 gauge or larger,

Communications: 24 gauge or larger

#### Fan Line Voltage Contact Electrical Ratings

Brown, Blue, Red wires 1/2 HP or 13A maximum.

#### Approximate Shipping Weight

0.34 kg (0.75 lb)

#### Main Heat Voltage Electrical Ratings

Orange wire, 10A maximum

#### Cool Line Voltage Electrical Ratings

Yellow wire, 5A maximum

#### Output Ratings

Fan: Brown, Blue, Red wires 1/2 HP or 13A at 277Vac maximum.

#### Safety Standards All Models

UL 61010 - 1 (3rd edition)

CSC 61010 - 1 (3rd edition)

IEC 61010 - 1 (3rd edition)

#### 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

IEC 61326-1:2005

EN 301 489-1 V1.9.2

EN 301 328 V1.8.1

FCC 15 Subpart C

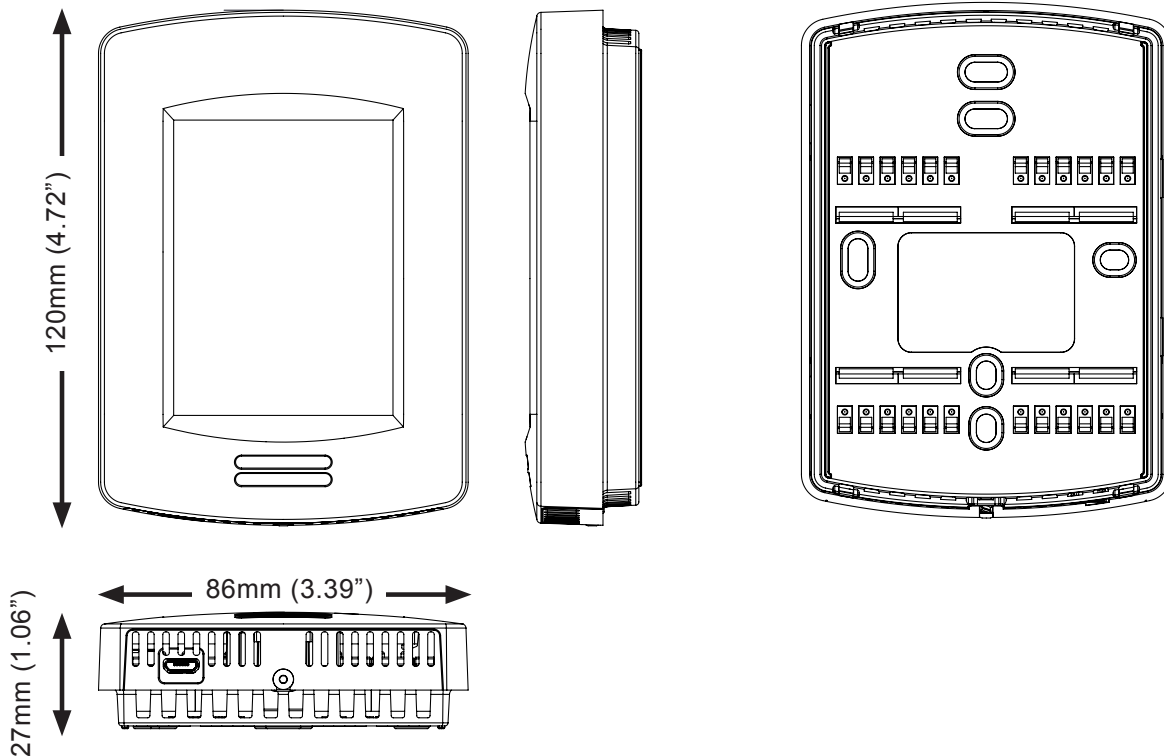
RSS 210

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 UNDESIRE OPERATION.



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

## Dimensions



## Ordering information

VTR83 **50A5500B**

### RH sensor and control

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

PIR:  
 -0 = No PIR  
 -5 = PIR on board

### Network

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

ZigBee® Pro communication module (ordered separately)  
 VCM8000V5000P

## Part numbers

VTR8300 Part numbers	RH sensor & control	PIR motion sensor
VTR8300A5000B		
VTR8350A5000B	x	
VTR8300A5500B		x
VTR8350A5500B	x	x
VTR8300A5000BLTD		

## Part numbers

### ZigBee Wireless Communication Modules VC3000 Relays

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