

VT8300 Series Installation Guide

24 Vac Low Voltage

Commercial and Hotel/Lodging HVAC Fan Coil Applications



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INSTALLATION

Location

- Do not install on outside wall.
- Do not install in areas with direct heat source.
- Do not install near any air discharge grill.
- Do not install in areas exposed to direct sunlight.
- Ensure Controller has sufficient air circulation.
- Ensure wall surface is flat and clean.

Installation

1. Remove security screw (if any) on bottom of Room Controller cover.
2. Open unit by pulling on bottom side of Room Controller (Figure 1).
3. Read FCC ID and IC label installed in cover before installing any wireless product.
4. Ensure correct side of base faces up.
5. Pull cables 6in (15cm) out from wall.
6. Align base and mark location of two mounting holes on wall (Figure 2).
7. Install anchors in wall.
8. Insert cable in central hole of base.
9. Insert screws in mounting holes on each side of base.
10. Strip each wire 1/4in (0.6cm) from end.
11. Insert each wire and screw according to wiring chart (see following pages).
12. Gently push excess wiring back into hole.
13. Gently align cover to top of base and snap in place from bottom (Figure 3).
14. Install security screw.

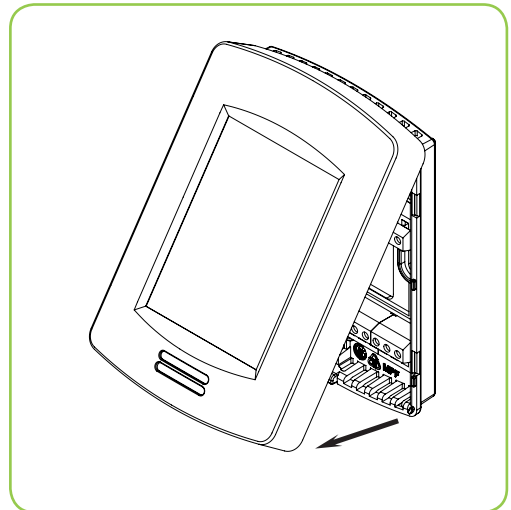


Figure-1 Open the cover

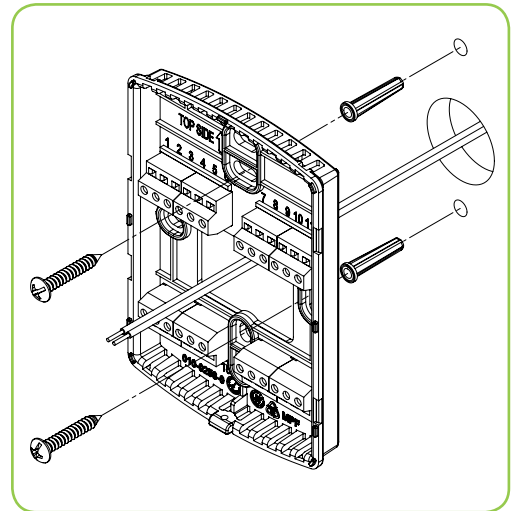


Figure-2 Install the base



- If replacing an existing Line Voltage FCU Controller, label wires before removal of Room Controller.
- Electronic controls are static sensitive devices. Discharge yourself correctly before manipulating and installing Controller.
- A short circuit or wrong wiring may permanently damage Room Controller or equipment.
- All VT8300 series controls are designed for use as operating controls only and are not safety devices. Tampering with the devices or unintended application of the devices will result in a void of warranty.
- This device must be installed to provide a separation distance of at least 8in (20cm) from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

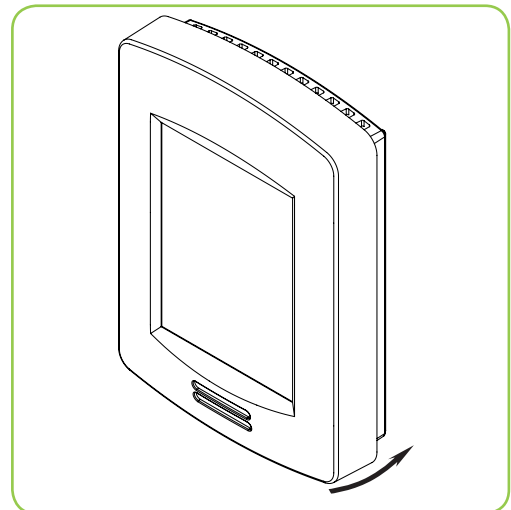


Figure-3 Reinstall cover

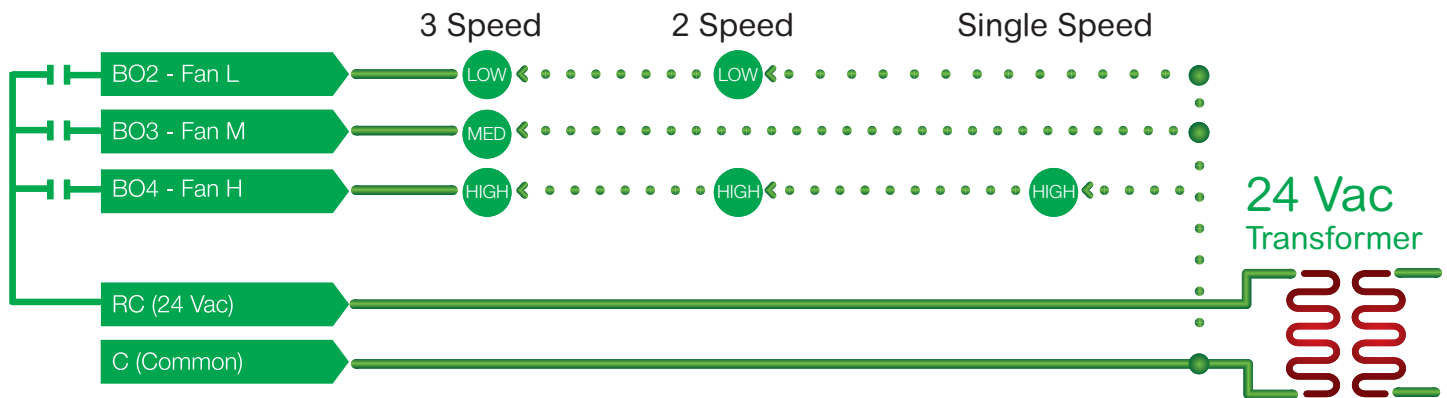
TERMINAL IDENTIFICATION AND FUNCTION

Terminal identification

VT83xxU Description / Application		Used in applications		
	2 & 4 Pipe	2 & 4 Pipe	2 & 4 Pipe	
	Control Type = On/Off	Control Type = Floating	Control Type = Analog	
Internal Temperature	X	X	X	
Internal Humidity	Model Dependent	Model Dependent	Model Dependent	
1- BO1	Not used	Not used	Not used	
2- BO2	Fan-L	Fan-L	Fan-L	
3- BO3	Fan-M	Fan-M	Fan-M	
4- BO4	Fan-H	Fan-H	Fan-H	
5- RC / 24 V~ Hot	24 V~ Hot	24 V~ Hot	24 V~ Hot	
6- C / 24 V~ Com	24 V~ Com	24 V~ Com	24 V~ Com	
7- RH	Aux Heat	Aux Heat	Aux Heat	
8- BO8	Aux Heat	Aux Heat	Aux Heat	
9- UO9	Normally Close Cool Valve	Close Cool Valve	Not used	
10- UO10	Normally Close Heat Valve	Close Heat Valve	Not used	
11- UO11	Normally Open Cool Valve	Open Cool Valve	Analog Heat valve	
12- UO12	Normally Open Heat Valve	Open Heat Valve	Analog Cool Valve	
13- RS485 +	BACnet MS-TP +	BACnet MS-TP +	BACnet MS-TP +	
14- RS485 -	BACnet MS-TP -	BACnet MS-TP -	BACnet MS-TP -	
15- RS485 Ref	BACnet MS-TP Ref	BACnet MS-TP Ref	BACnet MS-TP Ref	
16- UI16	UI16 Function	UI16 Function	UI16 Function	
17- UI17	UI17 Function	UI17 Function	UI17 Function	
18- Scom	Common	Common	Common	
19- UI19	UI19 Function	UI19 Function	UI19 Function	
20- UI20	Remote Room Sensor	Remote Room Sensor	Remote Room Sensor	
21- Scom	Common	Common	Common	
22- UI22	Remote Supply Sensor	Remote Supply Sensor	Remote Supply Sensor	
23- UI23	Not used	Not used	Not used	
24- UI24	Not used	Not used	Not used	

Wiring

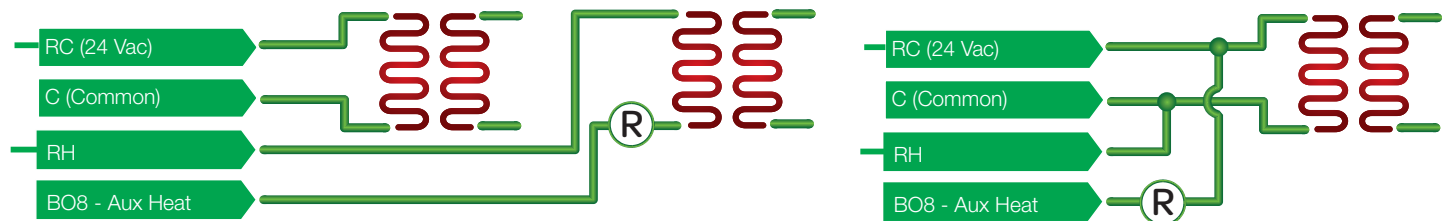
Power and Fan (All Models)



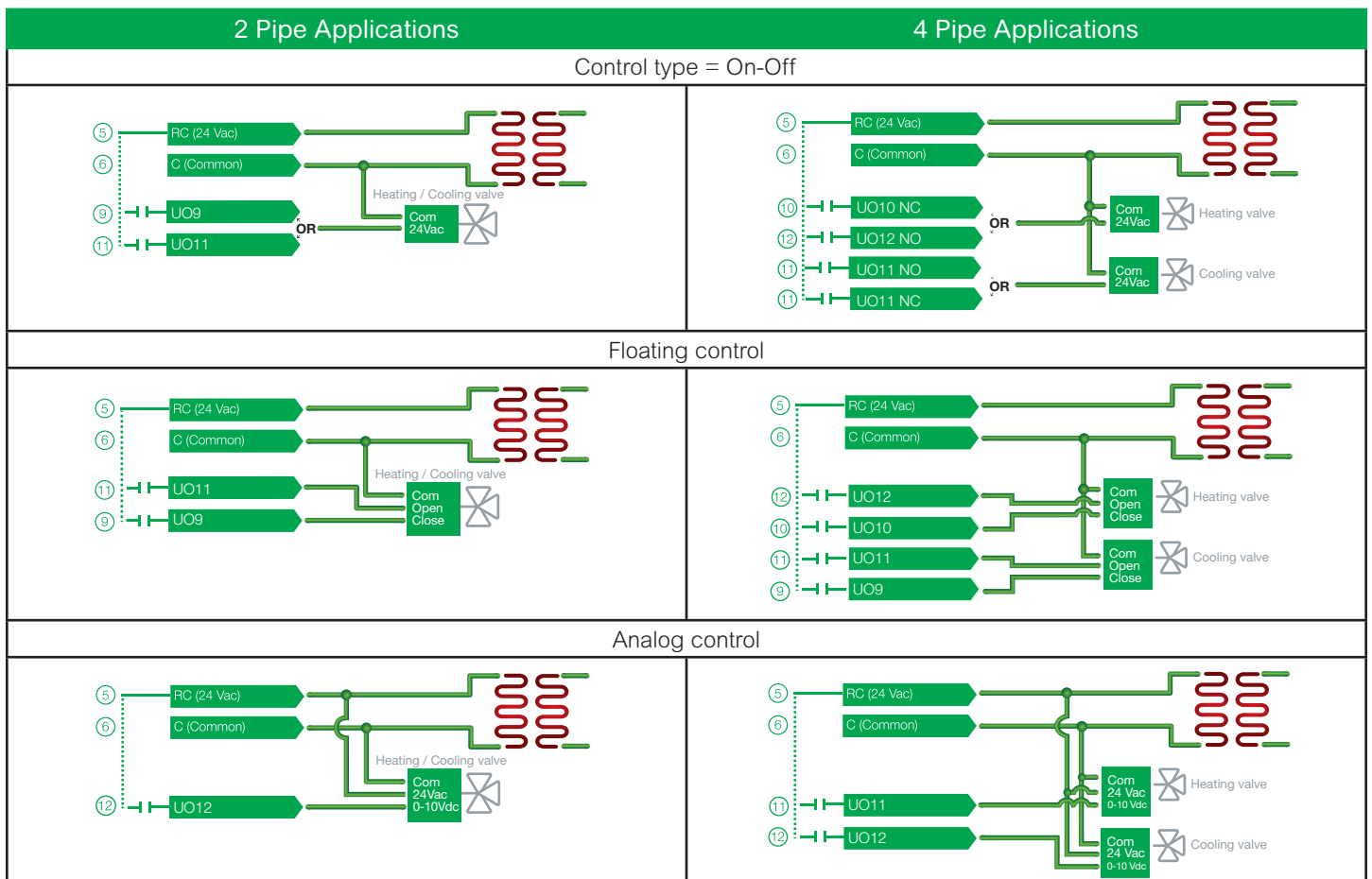
BO8 Auxilliary Output Wiring

Dry contact to end device 24 V~ maximum

24 Vac power to relay

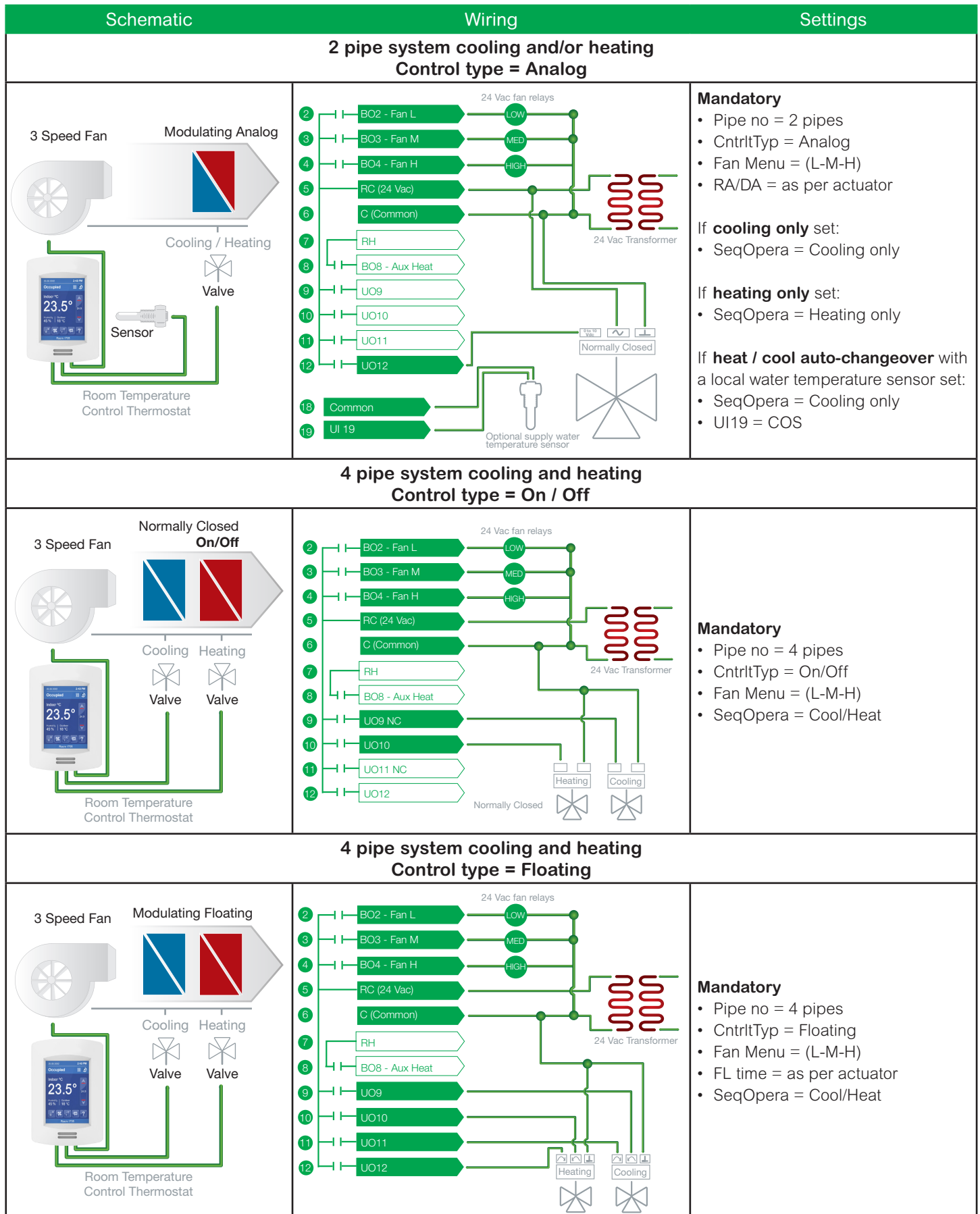


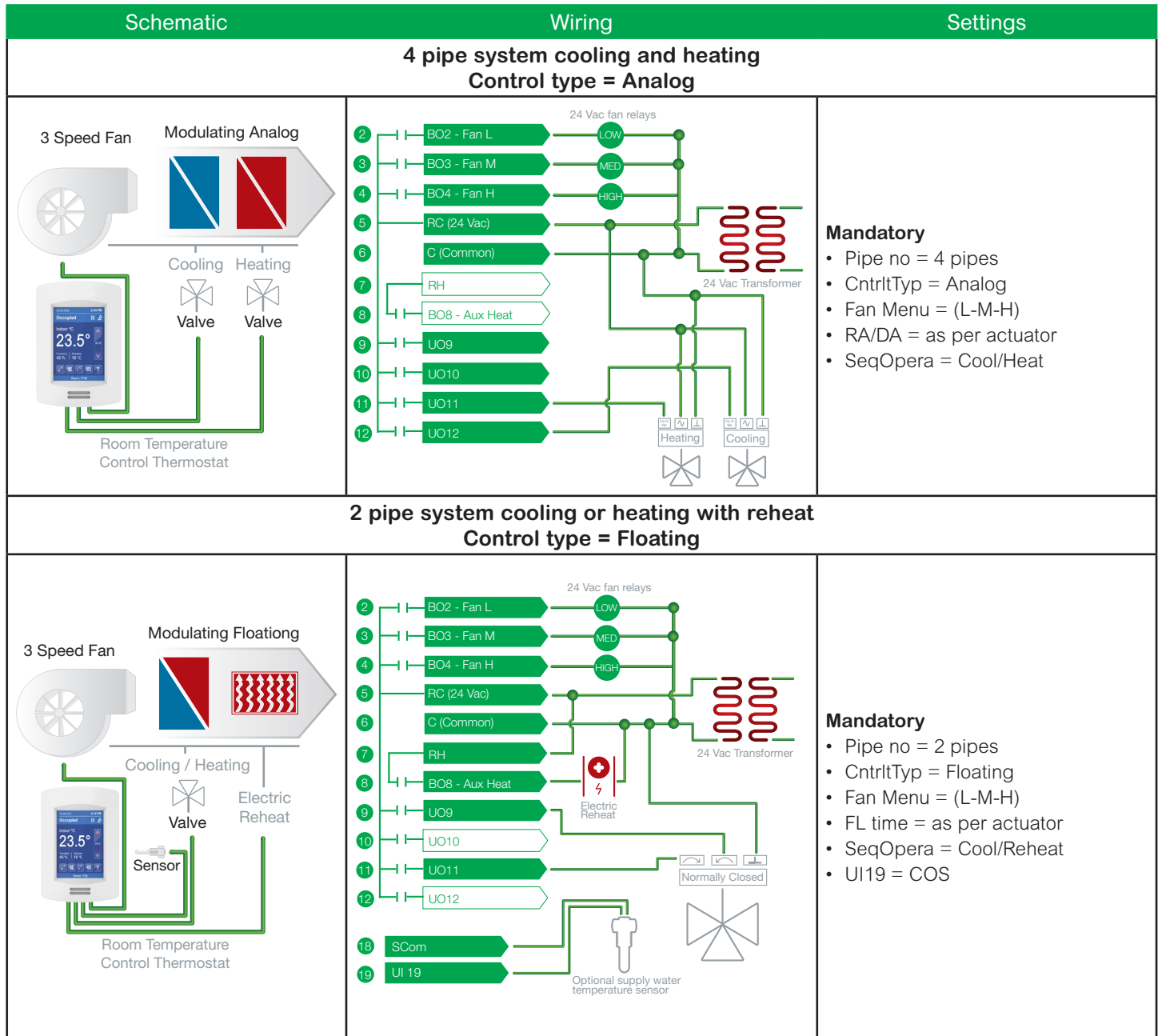
Main Outputs Wiring



TYPICAL APPLICATIONS

Schematic	Wiring	Settings
2 pipe system cooling and/or heating Control type = On / Off		
3 Speed Fan Normally Closed On/Off Cooling / Heating Valve Sensor Room Temperature Control Thermostat	24 Vac fan relays 24 Vac Transformer Normally Closed Optional supply water temperature sensor	Mandatory - Pipe no = 2 pipes - CntrlTyp = On/Off - Fan Menu = (L-M-H) - FL time = N/A If cooling only set:: - SeqOpera = Cooling only If heating only set: - SeqOpera = Heating only If heat / cool auto-changeover with a local water temperature sensor set: - SeqOpera = Cooling only - UI19 = COS
2 pipe system cooling and/or heating Control type = Floating		
3 Speed Fan Modulating Floating Cooling / Heating Valve Sensor Room Temperature Control Thermostat	24 Vac fan relays 24 Vac Transformer Normally Closed Optional supply water temperature sensor	Mandatory - Pipe no = 2 pipes - CntrlTyp = Floating - Fan Menu = 0 (L-M-H) - FL time = as per actuator If cooling only set: - SeqOpera = Cooling only If heating only set: - SeqOpera = Heating only If heat / cool auto-changeover with a local water temperature sensor set: - SeqOpera = Cooling only - UI19 = COS





REMOTE SENSOR ACCESSORIES

Model no.	Description
S3010W1000	Wall mounted temperature sensor
S3020W1000	Wall mounted temperature sensor with override button and occupancy status LED

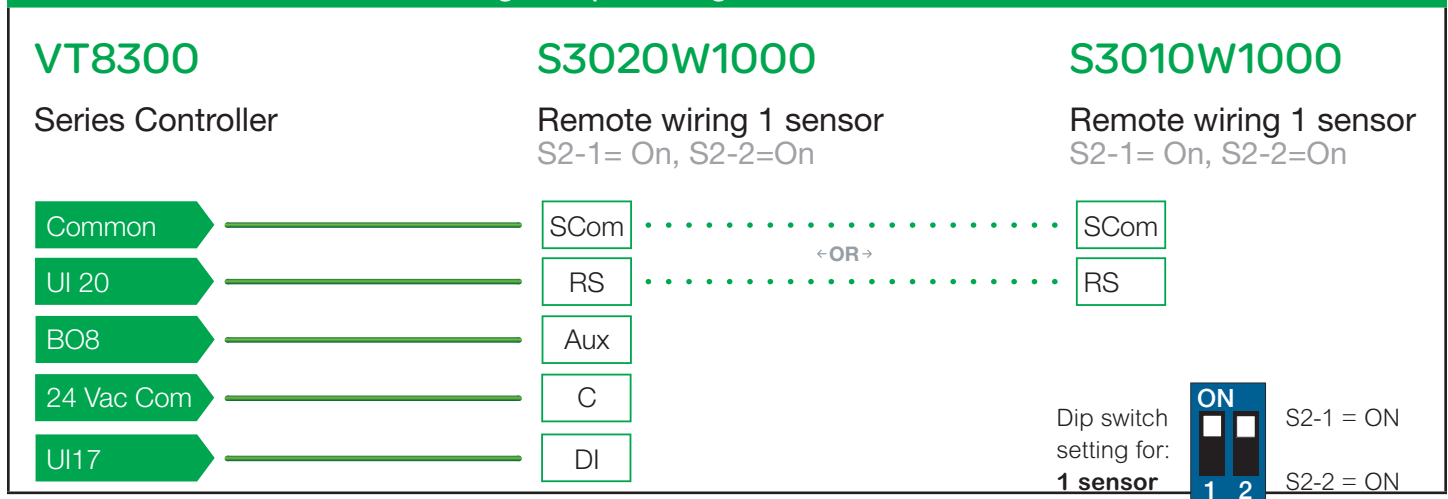
The VT8300 Room Controller is compatible with remote mount temperature sensors using 10K type 2 NTC thermistors.

Note: If one or multiple sensor(s) is/are connected into the RS terminal, the internal temperature sensor is automatically disabled. Disconnecting the sensor(s) in the RS terminal will re-activate the internal sensor.

Features:

- Each sensor can be configured for various averaging combinations
- Optional occupancy led
- Optional override key

Wiring example of single remote room sensor

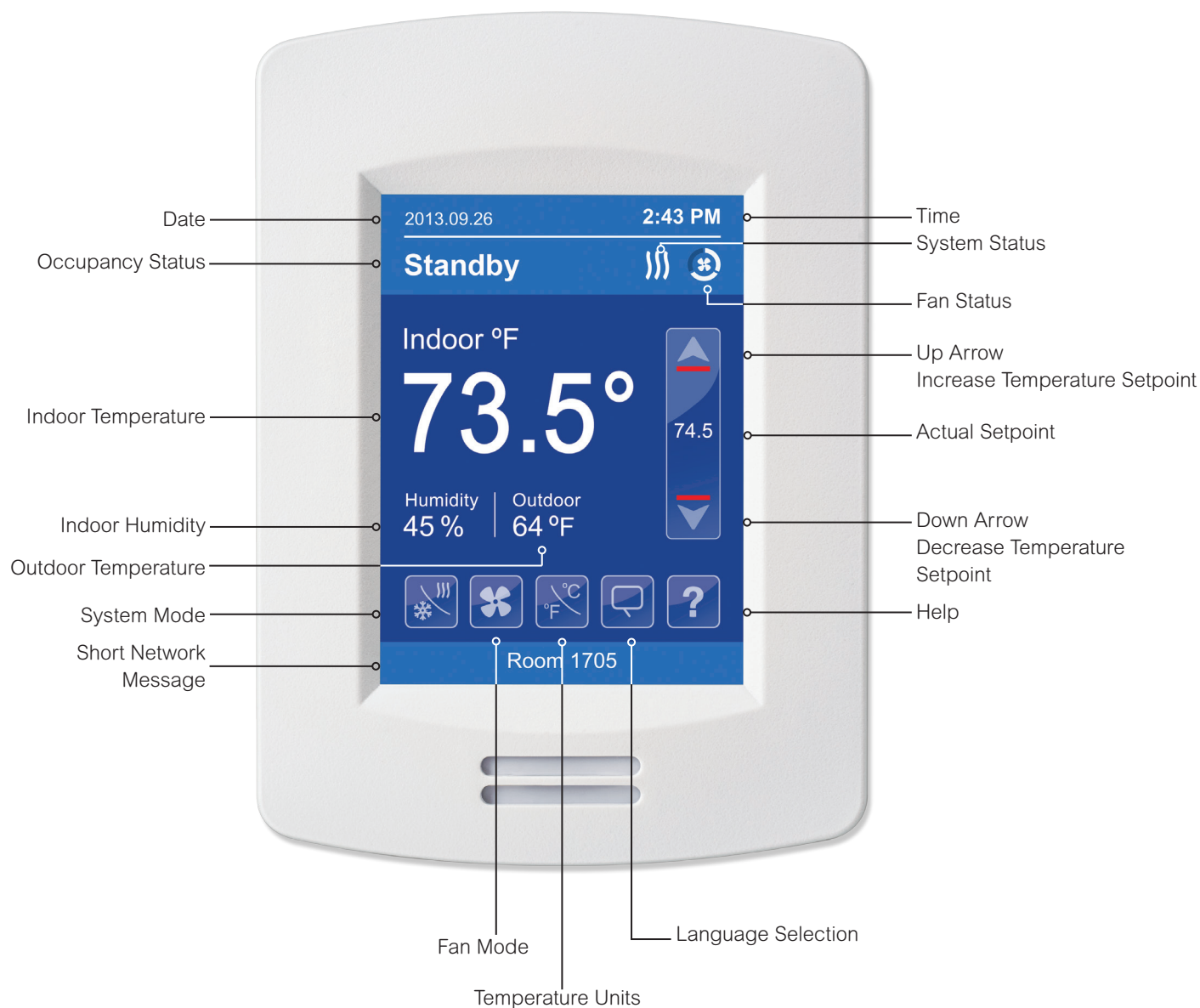


Temperature vs. resistance chart for 10 Kohm NTC thermistor ($R_{25^{\circ}\text{C}} = 10\text{K}\Omega \pm 3\%$, $B_{25/85^{\circ}\text{C}} = 3975\text{K} \pm 1.5\%$)

$^{\circ}\text{C}$	$^{\circ}\text{F}$	Kohm	$^{\circ}\text{C}$	$^{\circ}\text{F}$	Kohm	$^{\circ}\text{C}$	$^{\circ}\text{F}$	Kohm	$^{\circ}\text{C}$	$^{\circ}\text{F}$	Kohm	$^{\circ}\text{C}$	$^{\circ}\text{F}$	Kohm
-40	-40	324.3197	-20	-4	94.5149	0	32	32.1910	20	68	12.4601	40	104	5.3467
-35	-31	234.4009	-15	5	71.2430	5	41	25.1119	25	77	10.0000	45	113	4.3881
-30	-22	171.3474	-10	14	54.1988	10	50	19.7390	30	86	8.0694	50	122	3.6202
-25	-13	126.6109	-5	23	41.5956	15	59	15.6286	35	95	6.5499	55	131	3.0016

HOME SCREEN DISPLAY

Hospitality User Interface Shown



Note: User HMI is configurable and allows display functions such as Date, Time, Humidity, Outdoor Temperature, Setpoint, and others to be enabled or disabled by setting various parameters.

HOW TO ENTER SET-UP SCREEN

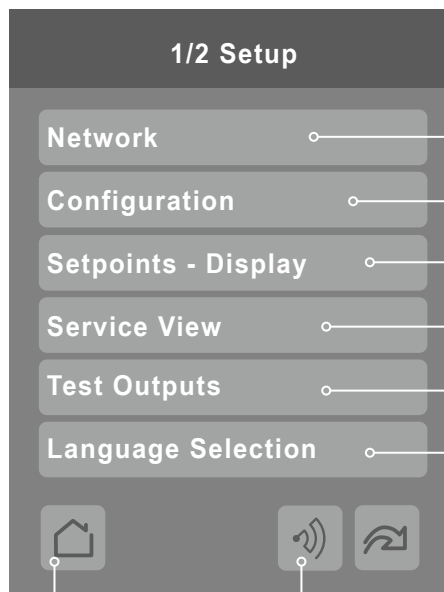


Touch and hold this point for 3 seconds to enter set-up mode

Note: If a configuration/installer password is activated to prevent unauthorised access to the configuration menu parameters, a password entry prompt shows to prevent access to device configuration components.

For more information on using and configuring the functions of the HMI, refer to the **VT8300 User Interface Guide**

SET-UP SCREEN DISPLAY



Return to home screen

Discover Mode The Controller becomes discoverable on the wireless ZigBee® network for 1 minute (this button is hidden if ZigBee® settings are not configured)

Enter BACnet® & ZigBee® network settings

Enter parameter configuration menu

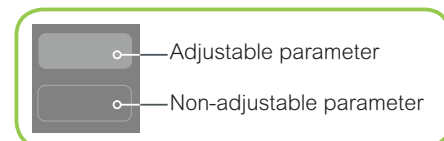
Enter setpoint & display settings

Enter status and service view

Enter output testing mode

Enter language selection

General Note:



APPENDIX A TERMINAL CORRESPONDANCE

The terminals of a VT8300 are identified differently and have a wider range of possible functions compared to those of any of the VT7300 series Room Controllers. Nonetheless, there is a direct correspondance of functions between the terminals of the VT7300 series and the VT8300 series. Consult the table below to verify the appropriate terminal when replacing a VT7300 Room Controller with a VT8300 Room Controller.

VT7300		VT8300	
Terminal name	Terminal ID	Terminal name	Terminal ID
Binary Input 1	BI1	Universal Input 16	UI16
Binary Input 2	BI2	Universal Input 17	UI17
Universal Input 3	UI3	Universal Input 19	UI19
Sensor Common	Scom	Terminal 18 Common	COM
Remote Sensor	RS	Universal Input 20	UI20 - RS
Sensor Common	Scom	Terminal 21 Common	COM
Mix/Supply Sensor	MS	Universal Input 22	UI22 - SS

APPENDIX B POWER OUTAGE CLOCK RESET

In the event of a power outage, VT8300 Room Controllers retain the correct time as long as the duration of the power outage is not prolonged. Depending on the duration of the power outage, the Room Controllers internal clock may need to be updated or reset completely. The following table gives an indication of the expected clock performance after a power outage.

Outage duration	Room Controller behaviour
0 - 24 hours	Clock functions are normal
24 - 36 hours	Clock accuracy not guaranteed, time may need to be adjusted
36 - 72 hours	Clock no longer increments and must adjusted when power is restored
72+ hours	Clock functions are fully reset, and must be reinitialized as per a new installation