VX4 product profile

The Verdant VX4 Series Thermostat delivers optimal comfort and energy efficiency by setting personalized temperature schedules in a sleek and modern design with fingerprint resistant glass.

VERDANT
by COPELAND

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Overview

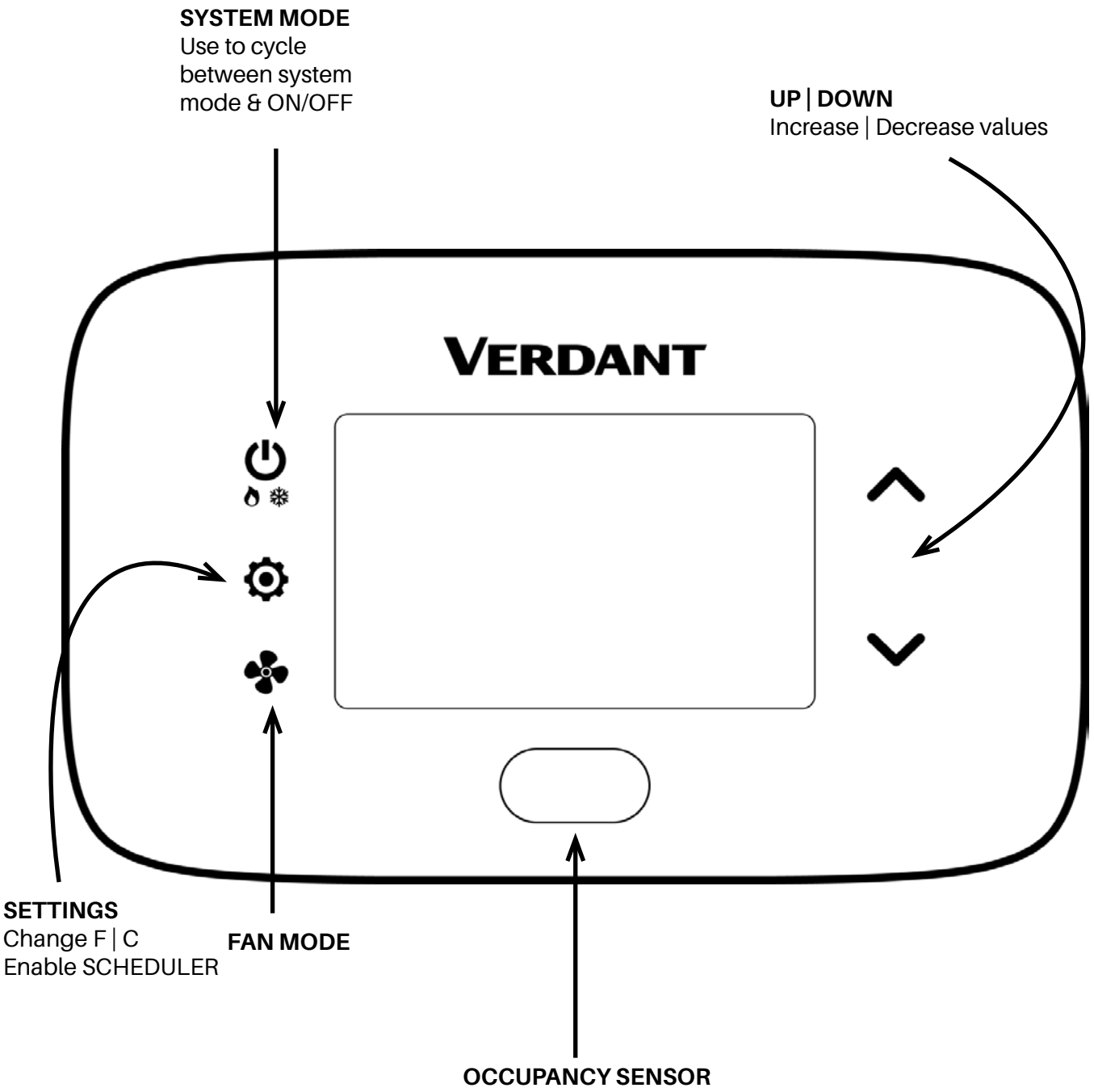
The field-proven Verdant VX4 thermostat is robust, reliable, and offers unparalleled value for property owners. Trusted by thousands of hotels and MDU properties throughout North America, Verdant VX4 comes with all the great features that made Verdant a preeminent leader in guestroom energy management technology.

Verdant VX Series Energy Management Thermostats deliver unprecedented energy savings without compromising the comfort of occupants. An integrated occupancy sensor uses a combination of motion and thermal sensing technologies for accurate occupancy detection. Reliable occupancy detection allows for energy savings when rooms are unoccupied.

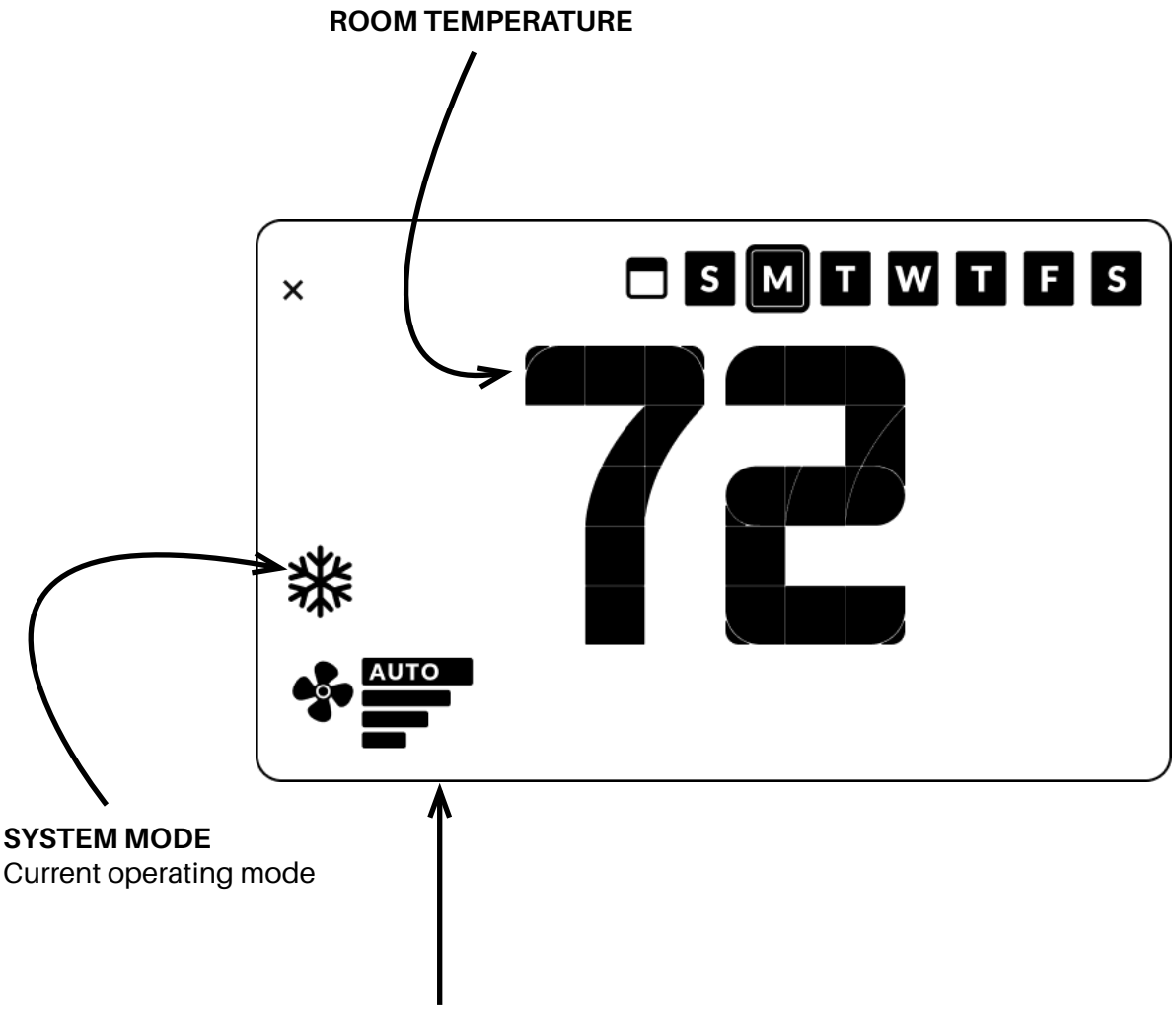
Energy saving presets eliminate the guesswork and make it easy to adjust the energy saving settings. Fully configurable energy saving settings allow for customization of the thermostat settings to fit any situation. Comprehensive configuration options ensure full compatibility with virtually any existing or emerging HVAC system with up to 4 heat and 2 cool stages as well as compatibility with modulating and proprietary communications. Built-in wireless mesh-networking enables online management.

Display

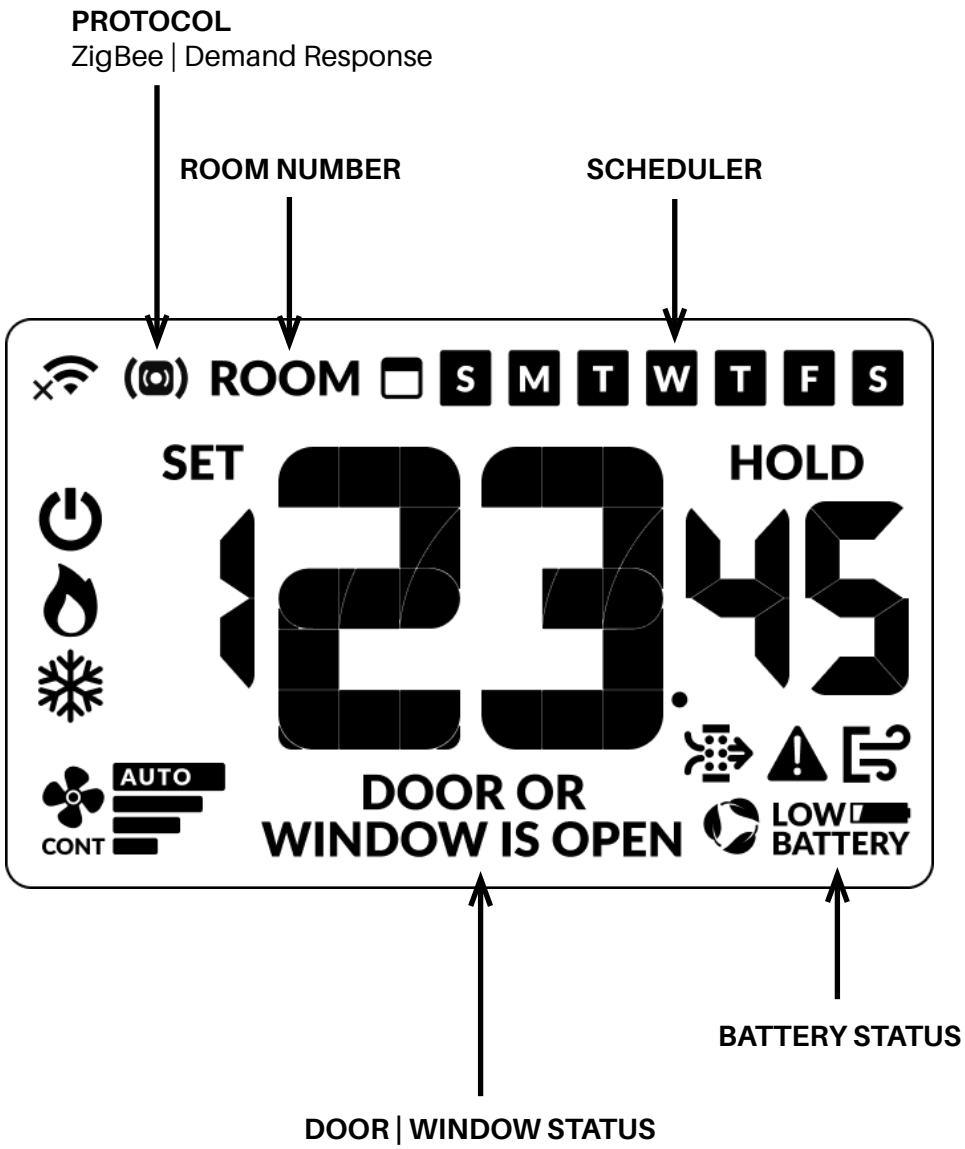
Faceplate



Standard display (typical)



Screen icons

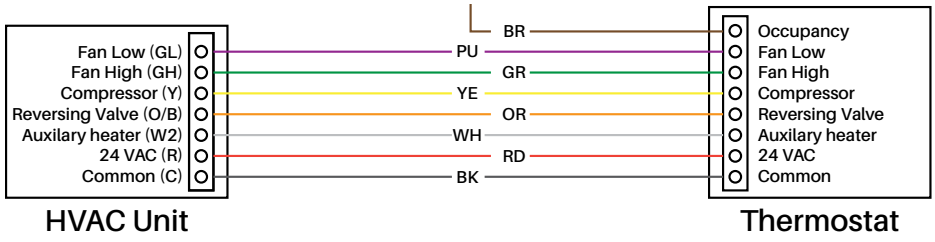


HVAC equipment compatibility

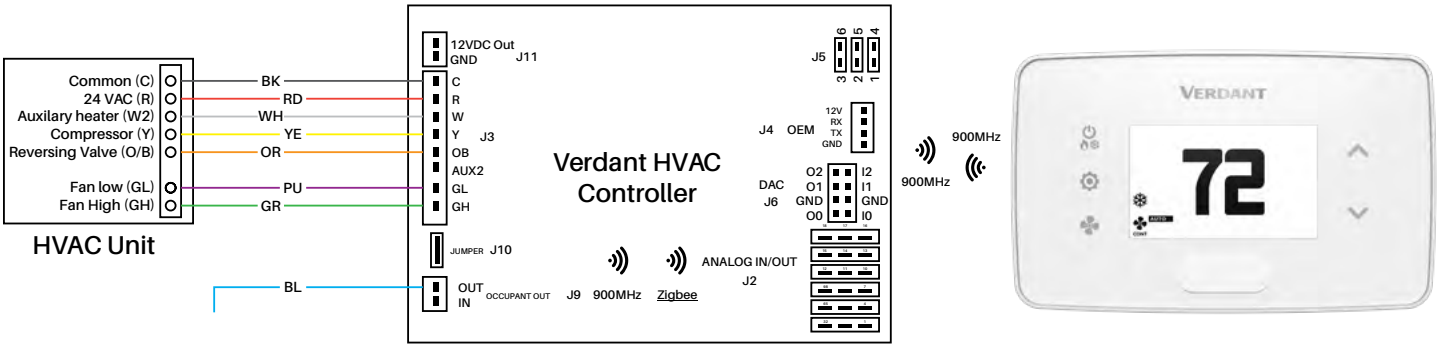
The VX4 line of thermostats is capable of natively integrating with a number of manufacturer's and equipment, allowing for unparalleled energy management with optomized controls with both standard and leading-edge HVAC systems.

The VX4 line offers both a wired and wireless solution for 24 VAC controlled systems including PTAC, PTHP, VTAC, FCU, andUnitary equipment. The platform is capable of handling multi-stage cooling and heating as well as providing an occupancy output for lighting relays, dampers, etc., and optional 10 V fan control (wireless only).

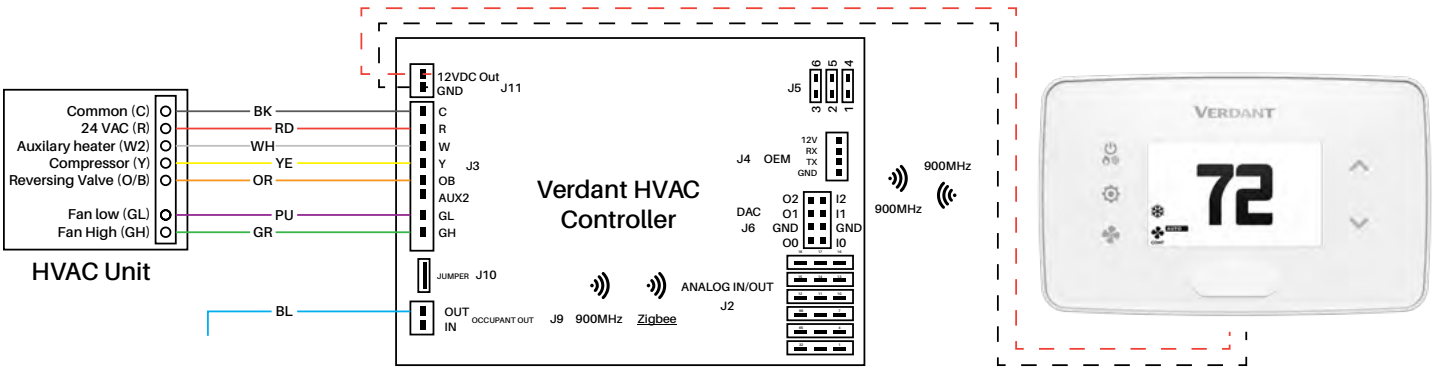
Wired



Wireless



Wireless w/power



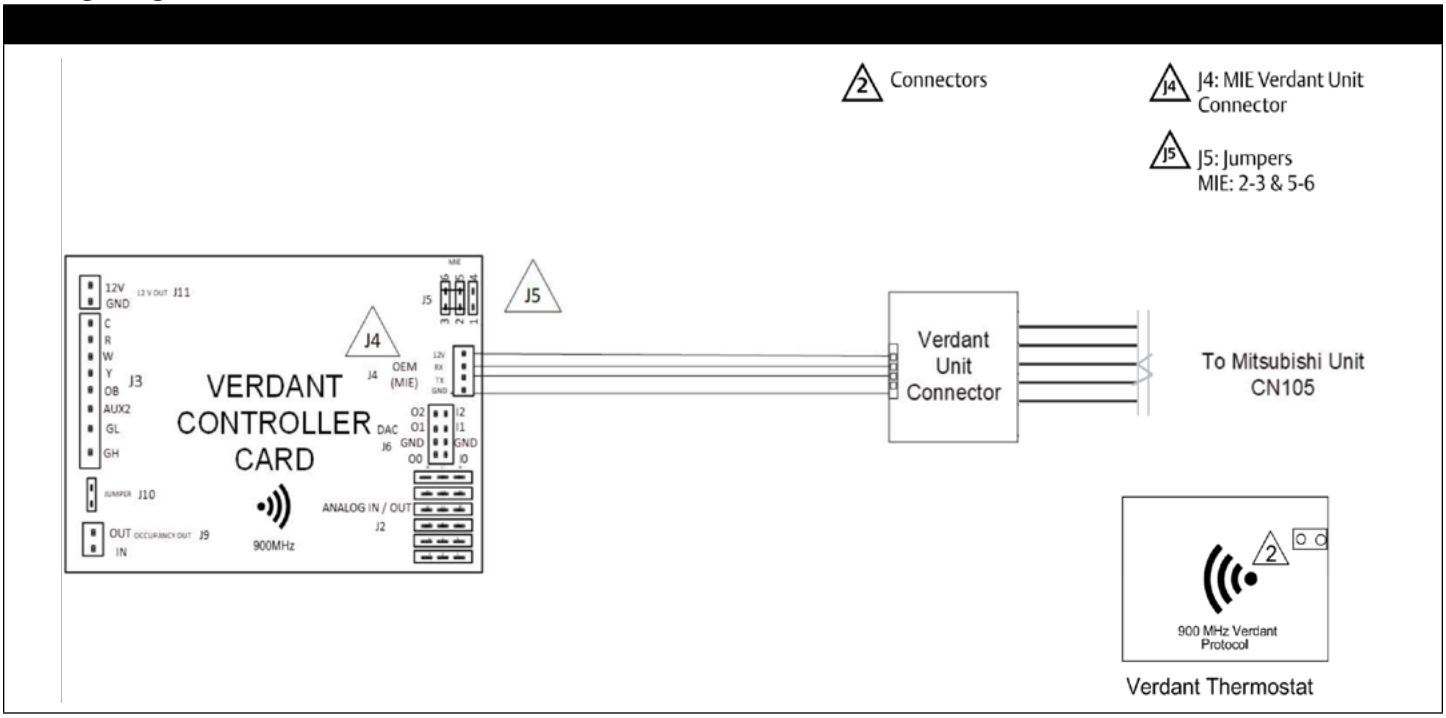
NOTE: In all wireless applications, the thermostat can be powered by the control card by via 12 VDC from the J11 port in leui of batteries.

Unique compatibilites

Mitsubishi/Trane

The MIE thermostats incorporate native connectivity with CITY MULTI(R) Indoor VRF units and M-, P-, and Nv- series mini-splits. The control card connects directly to the CN105/95 port of the compatible METUS unit. Wireless thermostats can be powered with 12 VDC via the J11 port in leui of AA batteries.

Wiring diagram



*Compatibility table**

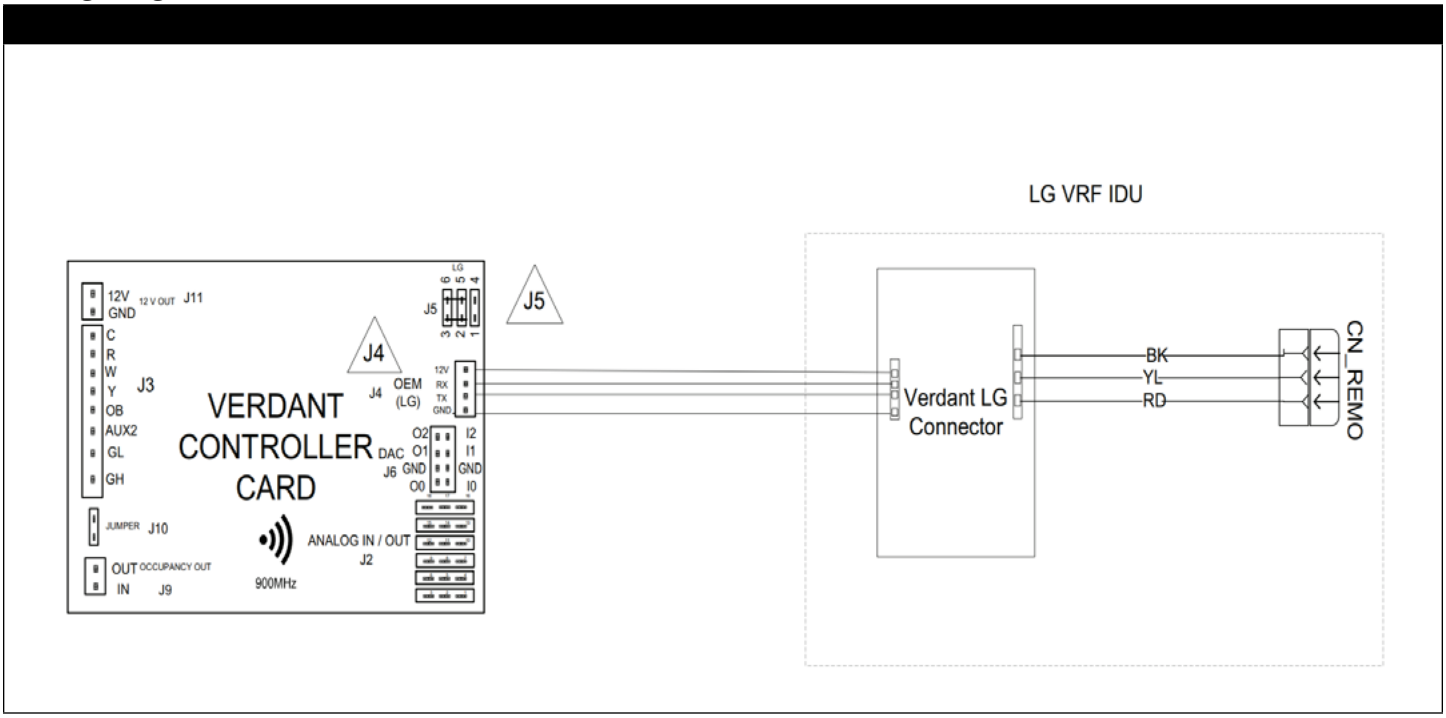
	CITY MULTI®	M-series	Nv-series	P-series
Ceiling cassette	PLFY-NBMU-E2 PLFY-NEMU PLFY-NFMU TPLFYP EM140A TPLFYP EM141A TPLFYP FM140A TPMFY BM140F	MLZ-KP SLZ-KA SLZ-KF	NTXCKS NTXUKS	PKA-KA4.TH PKA-KA6 PKA-KA7 PLA-BA4 PLA-BA6 PLA-EA
Ceiling suspended	TPCFYP KM140B			PCA-KA4 PCA-KA4TH PCA-KA6 PCA-KA7
Ducted	PEFY-NMAU-E3 PEFY-NMHSU PEFY-NMSU-E3 TPEFYP MA143A TPEFYP MH140A TPEFYP MH142A TPEFYP MS140C	SEZ-KD4.1TH SEZ-KDR4R1TH		PEA-AA4 PEA-AA4R1.TH PEA-AA6 PEAD-AA4 PEAD-AA5 PEAD-AA7 TPEAD-AA
Floor mounted	TPFFYP CS140A TPFFYP RE140A	MFZ-KA MFZ-KJ	NTXFKS	
Horizontal ducted			NTXDKS	
Multiposition	PVFY-NAMU PVFY-E00A PVFY--E00B TPVFYP AM141A	MVZ-AA4 MVZ-AA7 SVZ-KP	NTXAMT	PVA-AA4 PVA-AA7
Wall-mounted	TPKFYP BM142B TPKFYP HM142A TPKFYP KM142A	MSY-GE-NA-8 MSY-GL MSY-NA-8 MSZD-NA-8 MSZ-EF MSZ-FE-09-NA-8 MSZ-FE-12-NA-8 MSZ-FE-18-NA MSZ-FH MSZ-GE-24NA MSZ-GE-NA9 MSZ-GL MSZ-HM MSZ-JP MSZ-WR	MSZEF NTXWEL NTXWMT**A111 NTXWMT**A112 NTXWPH NTXWST NTYWST	PKA-HA4 PKA-HA6 PKA-HA7

* Reccommended for use with Heat Pump Systems. For Heat Recovery Systems, please contact Verdant.

LG

The LG thermostats incorporate native connectivity with all LG indoor VRF units, inverter PTACs, and mini-splits. The control card connects directly to the CN_REMO port of the LG unit. The VX4 platform's communication with the indoor LG unit will not interfere with the exitsing communciation and protocol between the indoor and outdoor units.The CN_REMO port on the LG indoor unit is capable or providing power to the VX4 control card. Wireless thermostats can be powered with 12 VDC via the J11 port on the control card in leui of AA batteries.

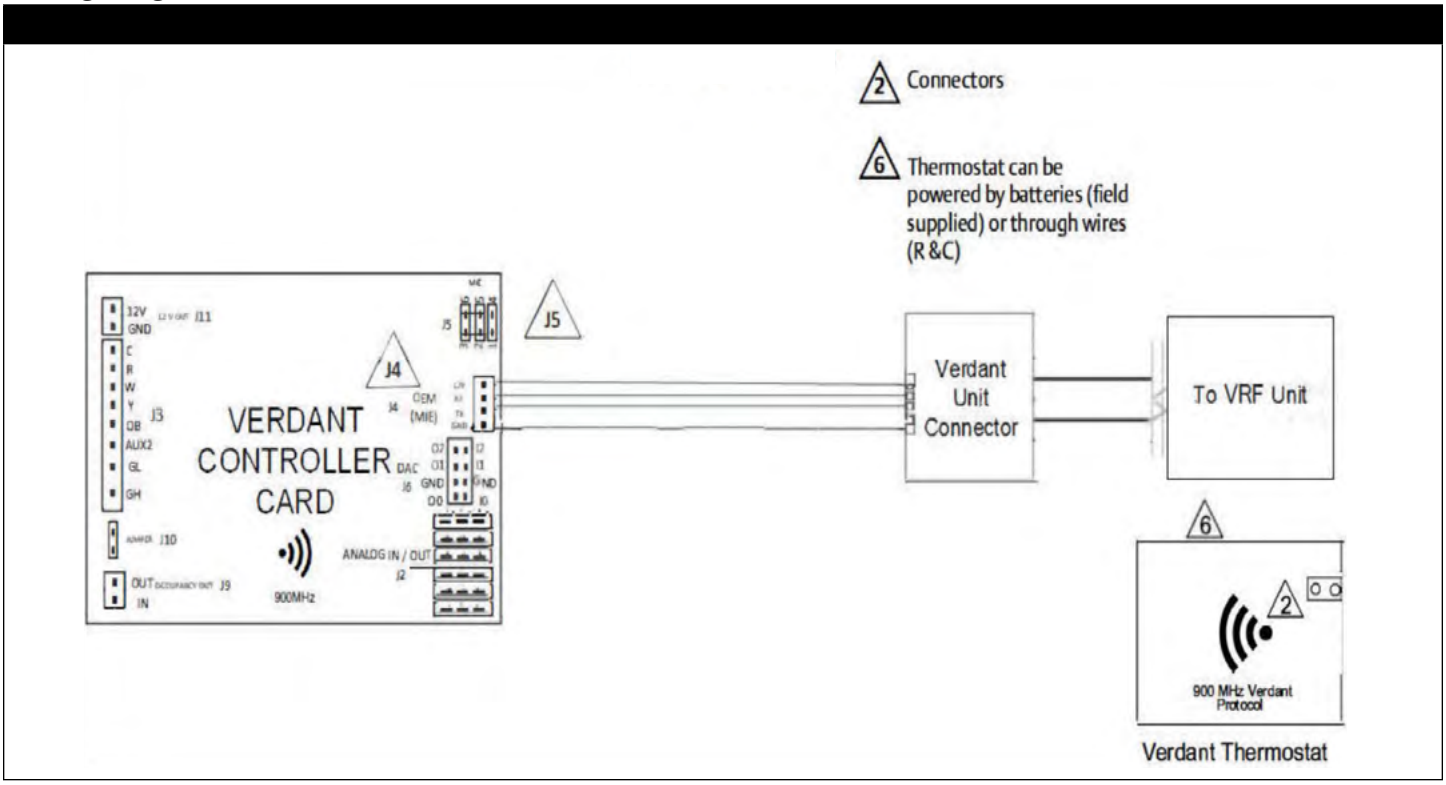
Wiring diagram



Carrier

The CV12 thermostats incorporate native connectivity with Carrier 40VM* indoor VRF units. The control card connects directly to the compatible Carrier unit. The control card is capable of being powered by the Carrier indoor unit via the HA/HB ports on the unit. Wireless thermostats can be powered with 12 VDC via the J11 port on the control card in leui of AA batteries.

Wiring diagram



*Compatibility table**

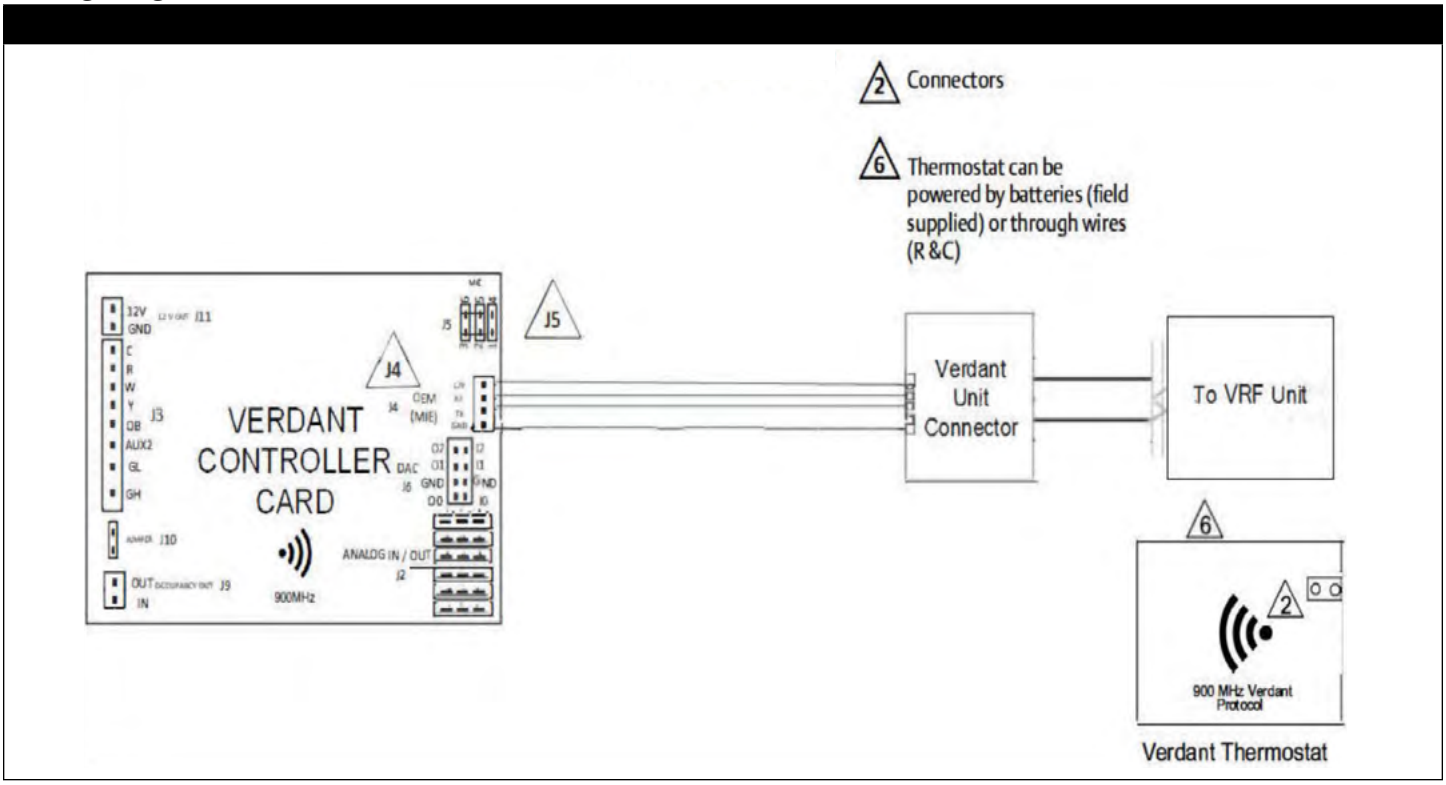
	Indoor Unit Type												
	Outside air	Compact 4-way cassette	Medium static ducted	Vertical AHU	Multiport distribution controller	Floor console	4-way cassette	Under-ceiling IDU	High static ducted	Highwall IDU	One-way compact cassette	Low static ducted	Reheat unit
Model	40VMA	40VMC	40VMM	40VMV	40VMD	40VMR	40VMF	40VMU	40VMH	40VMW	40VMI	40VML	40VMZ

* Recommended for use with Heat Recovery Systems. Verify compatibility if not listed above.

Toshiba Carrier

The TCAB thermostats incorporate native connectivity with Toshiba Carrier indoor VRF and mini-split units. The control card connects directly to the compatible Carrier unit. The control card is capable of being powered by the Carrier indoor unit via the A/B ports on the unit. Wireless thermostats can be powered with 12 VDC via the J11 port on the control card in leui of AA batteries.

Wiring diagram



*Compatibility table**

TU2C-Link models (U series) can be combined with TCC-Link models (non-U series). For details of communication types, refer to the following table.

Communication type	TU2C-link (U series)	TCC-link (non-U series)
Outdoor unit	MMY-*UP*********UL	MMY-*AP**********UL MCY-MAP*******UL RAV-SP**********UL
Indoor unit	MM*-UP*******UL	MM*-AP*******UL RAV-SM********UL

* Recommended for use with Heat Recovery Systems. Verify compatibility if not listed above.

GE Appliances

In addition to being compatible with standard GE PTAC and VTAC units with the standard VX4-TR and VX4-TW products, the VX4 platform is also capable of controlling the new V 12 (AZ9V⁎) series VTAC and the make-up air PTACs with the VX4-GEA line of product.

Compatibility table

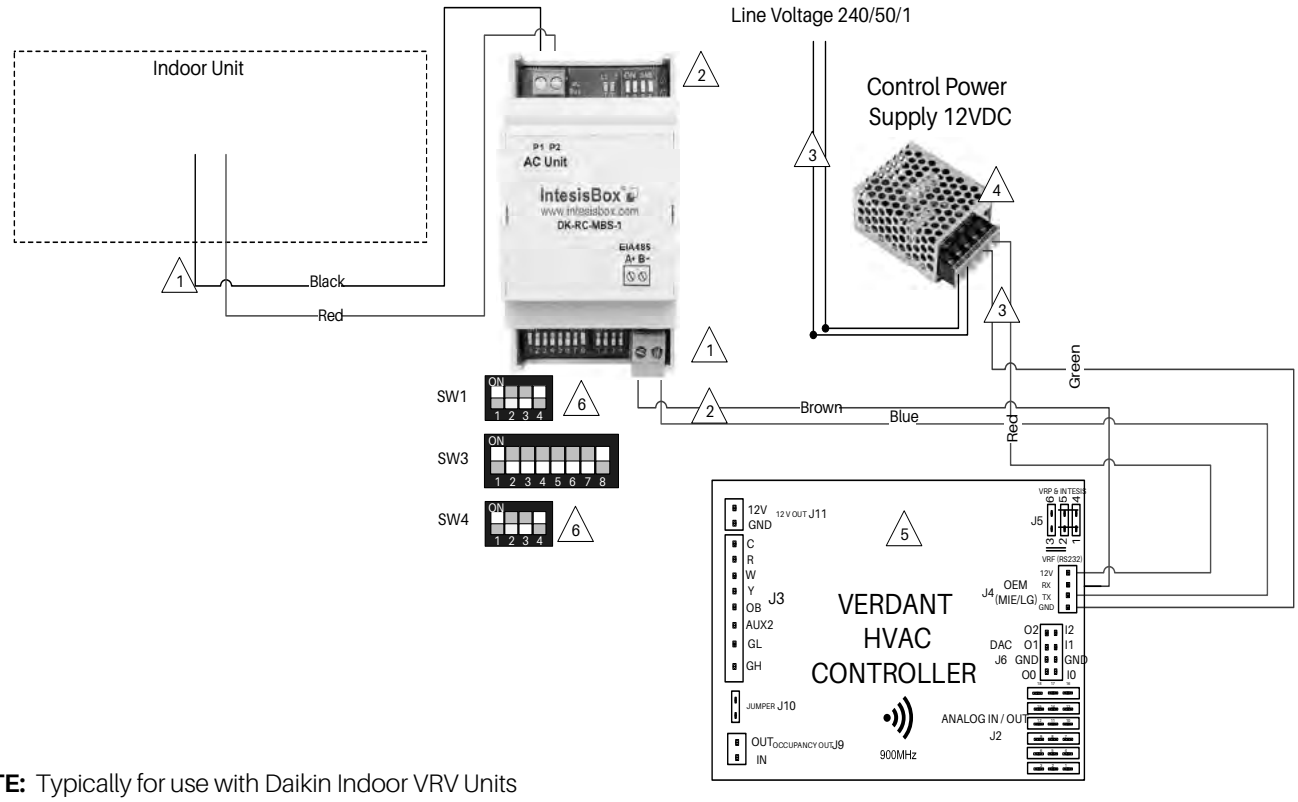
	Hotpoint & AZ45/65 PTAC w/o make-up air	AZ45/65 PTAC with make-up air	AZ90/91 % AZ95 VTAC w/o make-up air	AZ9V VTAC
VX4 model	VX4-TR/TW-⁎	VX4-GEA-⁎	VX4-TR/TW-⁎	VX4-GEA-⁎

NOTE: VX4 GEA models will include secondary wire harness for make-up air control input.

Intensis Appliances

The VX4-RS⁎ thermostats are compatible with Intesis adaptors, allowing for use with VRF indoor units that are also compatible with Intesis.

Wiring diagram

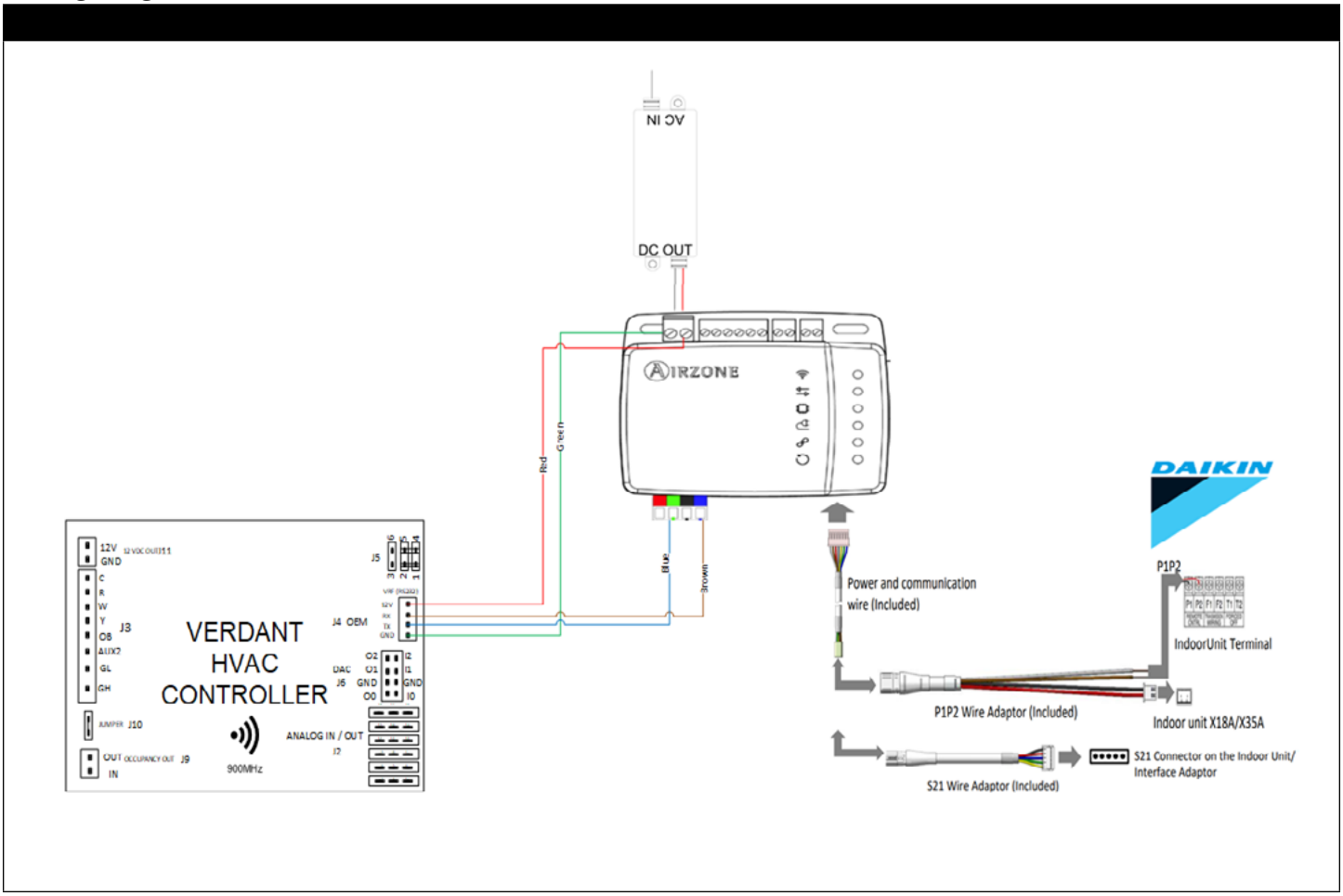


NOTE: Typically for use with Daikin Indoor VRV Units

Daikin & Airzone

The AZA-* accessories allow for integration with Diakin, Fujitsu, and Hitachi VRF systems. The control card connects directly to the Airzone adapter, which then connects directly to the HVAC unit. Wireless thermostats can be powered with 12 VDC via the J11 port on the control card in leui of AA batteries.

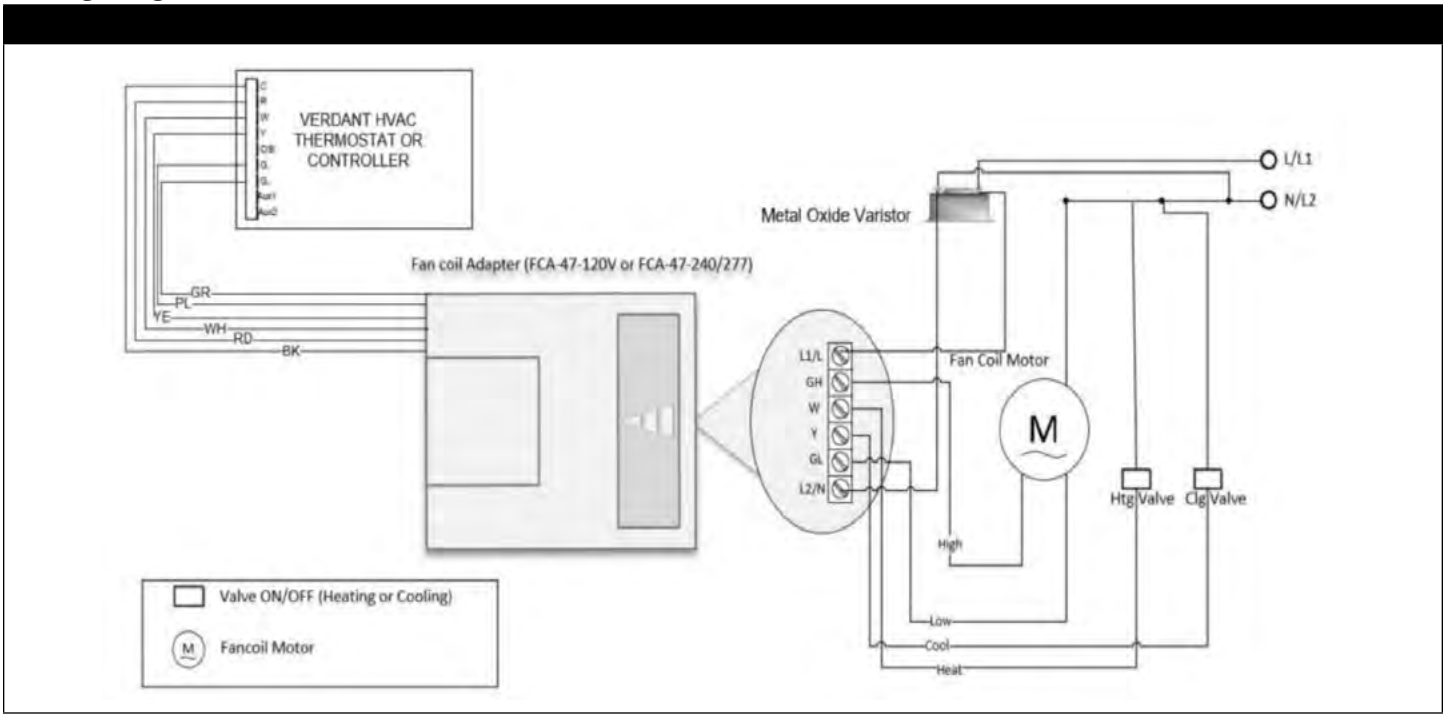
Wiring diagram



Fan coils and high-voltage

The VX4 platform is capable of controlling high-voltage and/or modulating valve fan coils.

Wiring diagram



NOTE: Wireless VX4 only.

Integrations and features

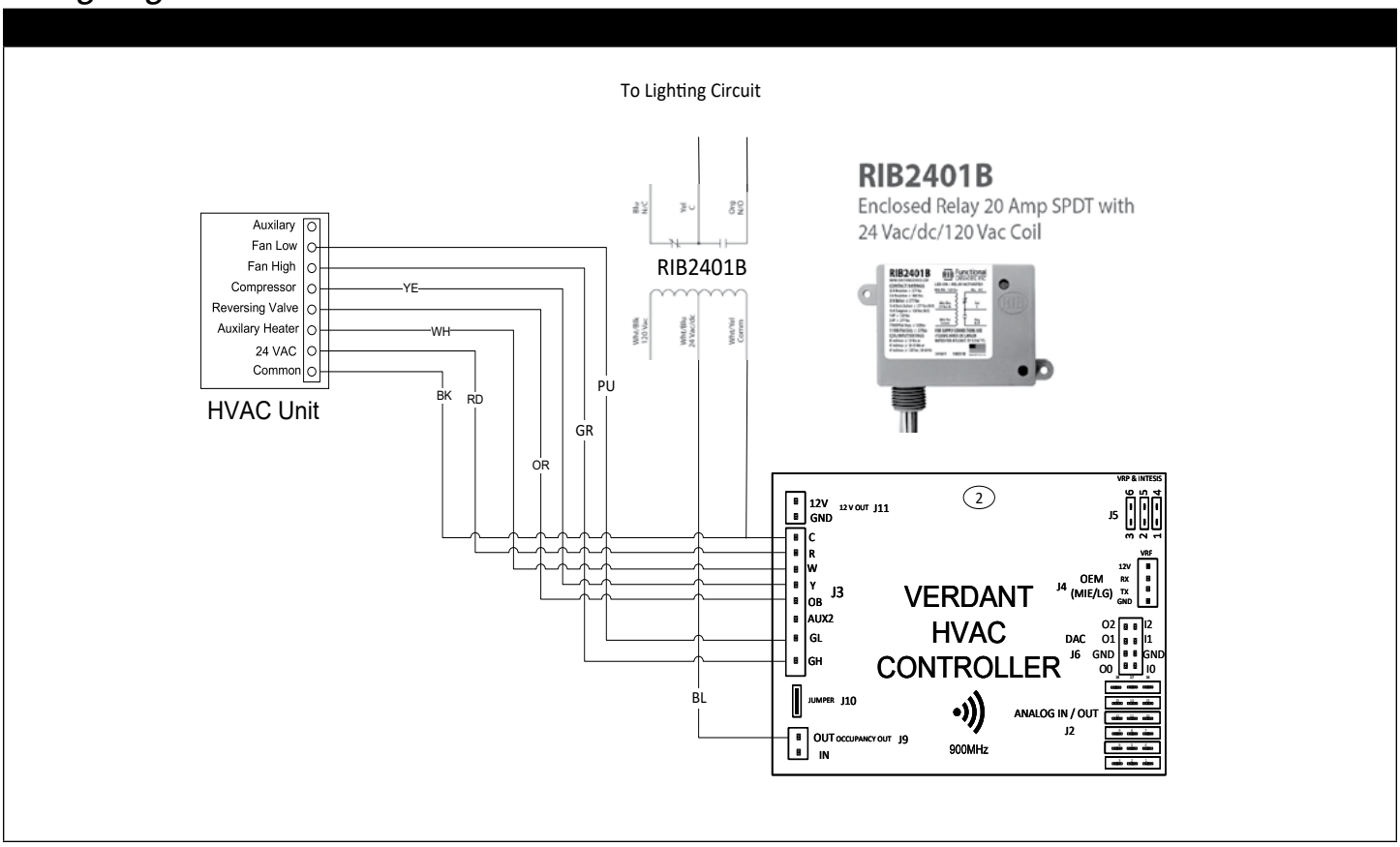
The VX4 platform is capable of integrating with a number of different technology stacks including door lock management systems (DLMS), property management systems (PMS), building automation systems (BAS/BMS), and lighting circuits.

The VX4 platform also offers 7-day schedling capability at the physcial thermostat or remotely. Demand response capability is also available.

Lighting

The VX4 platform is capable of integrating with in-room lighting controls, preventing energy waste by turning lights OFF while the room is unoccpied. The platform uses built-in infrared motion sensors with the option to deploy a remote occupancy sensor or door lock integration to monitor entry to the room for occupancy, allowing for improved response time. Wireless wiring example below:

Wiring diagram

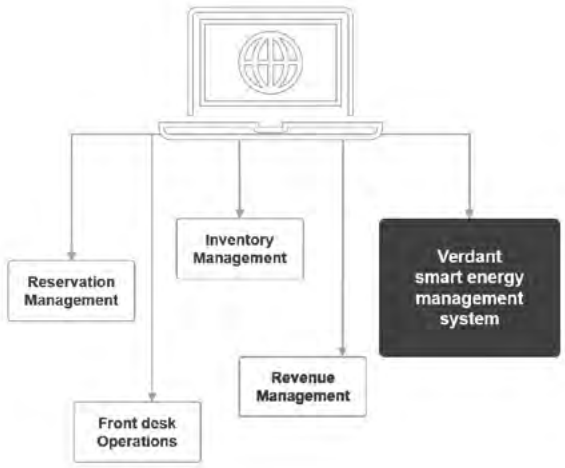


NOTE: Compatible with all wired and wireless VX4 thermostats. A RIB2401B relay is recommended. Wireless example pictured above.

Property management systems

The VX4 platform is capable of integrating with a number property management systems, allowing property operators to seamlessly monitor and control multiple inputs and outputs of their HVAC system within the existing technology ecosystem of their property. Compatible PMS platforms below

Marriott	Hilton	IHG	Other
Fosse	OnQ	IHG edge	Hotel key
Lightspeed			Opera

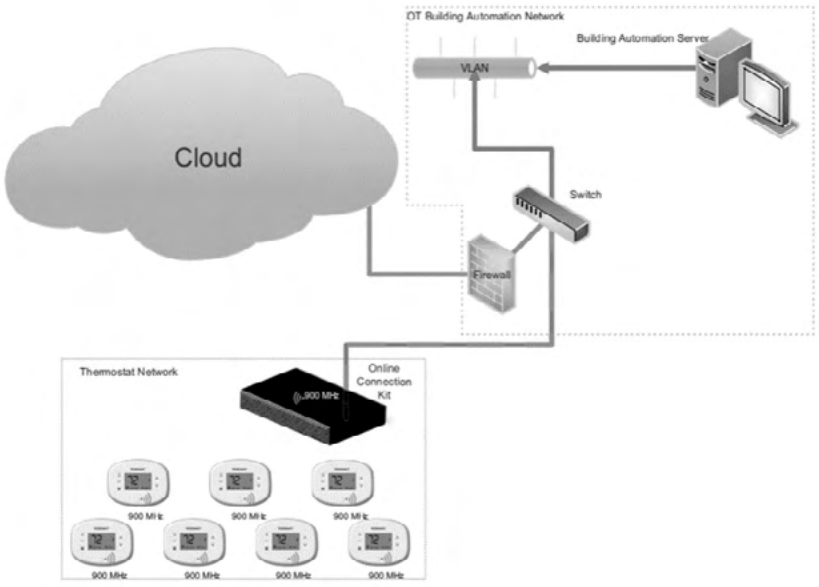


NOTE: Compatible with all wired and wireless VX4 thermostats. Thermostat must be networked (-XMF).

BACnet

The VX4 platform is capable of acting as a BACnet device, providing a handful of I/O values to the BACnet platform via an IP interface. Available data points in table below.

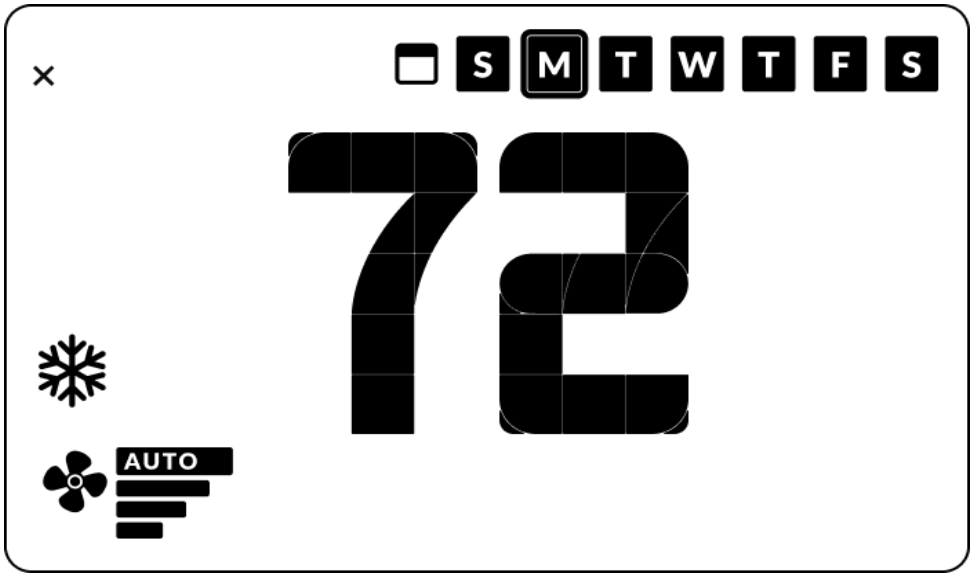
Data	Read/write
Room temperature	Read
Room humidity	Read
Occupancy state	Read
ON/OFF	Read/write
Set point	Read/write



NOTE: Compatible with all wired and wireless VX4 thermostats. Thermostat must be networked (-XMF).

7-day scheduler

All VX4 thermostats come equipped with a 7-day programmable schedule. The schedule is able to be set at the physical device or via an online app. Each day may have up to six disctinct scheduling events.



Demand response

All VX4 thermostats with firmware version 1130 or later are capable of recieving demand response events. Below are general details about the program.

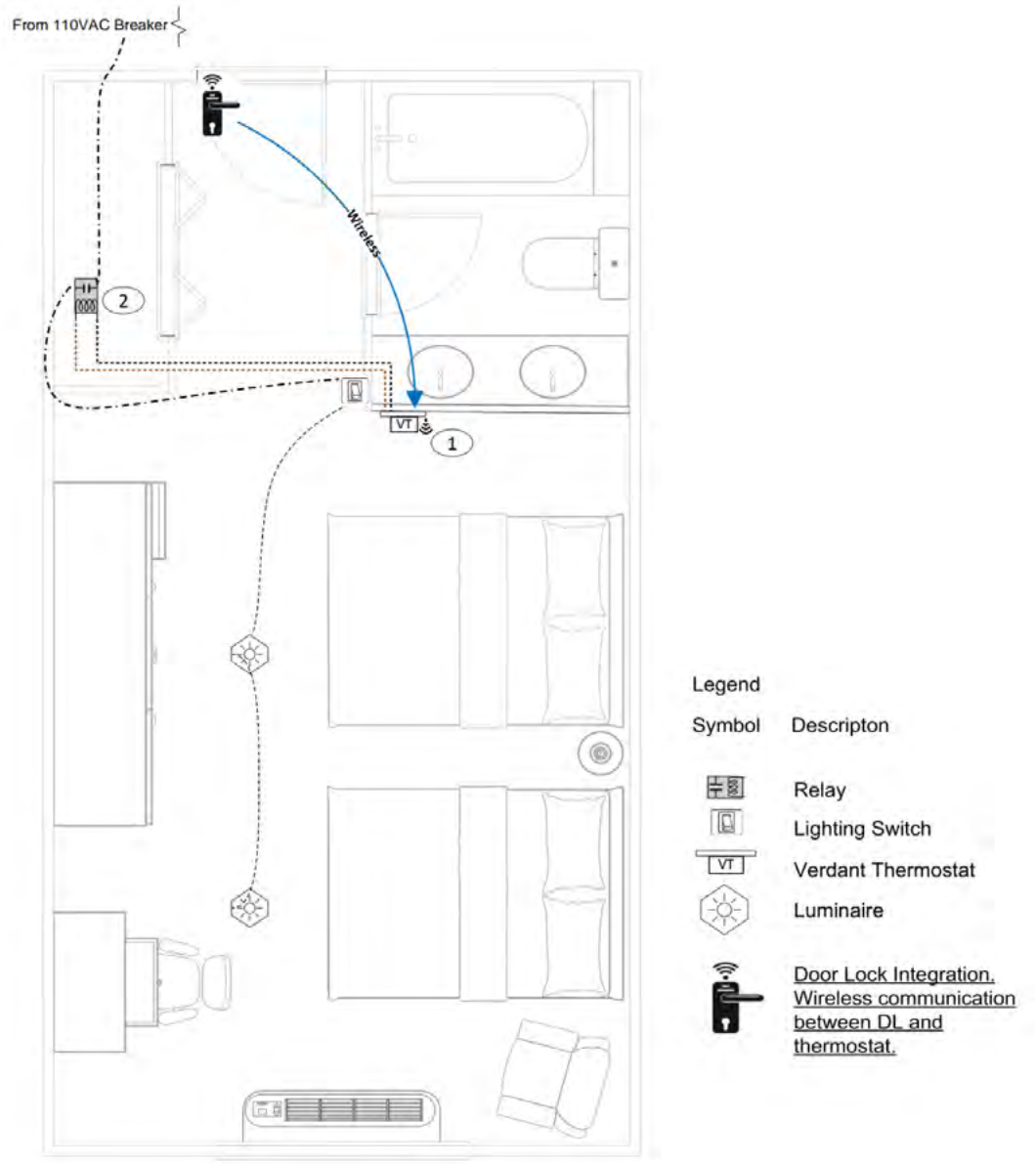
- Sign-up for demand response: Once the property has officially enrolled in Verdant's Demand Response program and its tenants have consented to participate in receiving Demand Response events, the process is set in motion.
- Integration with aggregators: Demand Response aggregators linked to the property's utility company can seamlessly integrate with Verdant's APIs. This integration allows automatic transmission of Demand Response events to our thermostats.
- Active DR event indicator: During an active Demand Response event, thermostats will display a distinctive icon, ensuring clear visibility and awareness for tenants and guests.
- Opt-out option: It's important to note that tenants and guests always retain the flexibility to opt out of medium criticality Demand Response events. This can be done by simply adjusting the setpoint directly from the thermostat.

NOTE: Compatible with all wired and wireless VX4 thermostats. Thermostat must be networked (-XMF).

Door lock management systems and smart locks

The VX4 platform is capable of integrating with door lock management systems (DLMS) and smart locks, adding another layer of occupancy detection to an application. DLMS brand compatability and general application are shown in the table and diagram below. For more details on requirements and compatability, please reference the VX4 Installation and Operations manual or reach out to your Verdant sales representative.

	In room	Server-server
"1-way"	Onity	Dormakaba Assa Abloy
"2-way"	N/A	Dormakaba



Networking overview

A mesh network is a group of connectivity devices that act as a single network, so there are multiple sources of connectivity instead of just a single router. Mesh networks broadcast from each point around the facility rather than from a single location, thereby providing better coverage over a wider space. Networking with the VX4 platform does not require Wi-FI. The VX4 thermostat and ZX-OL-U connection kit utlize a proprietary sub-GHz protocol to mesh devices.

Benefits of a mesh network include:

- Flexible coverage: Additional points can be added to get better coverage in hard-to-cover areas like hallways and near walls.
- Self-healing: In a mesh network, if one point goes down, communication is rerouted through another point.

The online connection kit (ZX-OL-U) enables wireless mesh networking of up to 1,024 thermostats per device. Additional kits can be networked together for large properties, or where a property has multiple buildings spread over a large area.

The ZX-OL-U communicates with thermostats using Verdant's proprietary 900MHz communication protocol. Data collected from each thermostat is uploaded to the cloud at five minute intervals, allowing for remote management of all thermostats from any internet-connected device.

The ZX-OL-U plugs into an internet port with a static IP address with active DHCP and must be whitelisted using its MAC address with unrestricted internet access.

NOTE: Devices should be installed within 100ft of each other.
Ports 80, 443, and 22 (optional) must be open to outbound communication.

Optional accessories

	**ZX-OL-U: online connection kit/gateway** Mesh network end-point device responsible for aggregating all thermostats connected for feedback, access, and control. Requires "-XMF" thermostats.
	**ZX-AOS: remote occupancy sensor** Remote occupancy sensor for multi-room application. Also used for entry occupation status for quicker feedback for lighting (in leui of door lock integration).
	**ZX-TSW: remote temperature sensor** Remote temperature sensor to replace or work in parallel with temperate sensor in the main thermostat.
	**ZX-DWS: remote door and window sensor** Remote, magnetized sensor for exterior door or window. If open, thermostat will shut the HVAC system OFF after a specified amount of time.

Best practices and general notes

Location

- Do not install on an exterior wall.
- Do not install behind a door.
- Do not install in areas with a direct heat source or sunlight.
- Do not install near any air discharge grill.
- Do not install wireless adapter inside any closed metal container.
- Do not install near elevator shafts or solid metal plates.
- Ensure device has sufficient natural air circulation.
- Ensure the wall surface is flat and clean.
- Install approximately 60 inches (1.5m) above the floor or required height per local, state, or national code.

Notes

- Batteries can power wireless thermostats for up to 18 months.
- Wireless thermostats can be powered with 12 VDC via 2-wires from the J11 port of the wireless control card in leui of batteries.
- Ensure correct network and wireless communication information gets entered to the thermostat.
- Each ZX-OL-U has a unique net ID (NID) that each thermostat needs to be paired to.
- Reccomended lightning integration is accomplished with ZX-AOS in leui of door-lock integration.

General specifications

Interface

- The simplified VX4 user interface provides ease-of-use for the occupant. The interface includes five physical buttons:

   cycles through system modes (COOL, HEAT, OFF, AUTO)

   changes temperature display between farenheit and celsius and/or enables or disables scheduler.

   cycles through available fan speeds and modes (high, medium, low, auto, continuous).

   increases system mode set point.

   descreases system mode set point.

- The VX4 thermostat operation screen includes the following icons and indicators: Set point, room temperature, system mode, fan mode/speed, schedule, door/window status, wireless connection status, protocol status (e.g. Zigbee & demend response), room number, and battery status.

- The VX4 thermostat provides a deep settings menu accessible via a CONFIG button with the faceplate removed. For a full list of configurable settings reference the VX4 Installation and Operations Manual.

Sensors

- The VX4 thermostat platform is equipped with the following integrated sensors by default:
  1. Room temperature: Data provided and displayed in celsius or farenheit.
  2. Space relative humidity: Data provided as a percentage.
  3. Occupancy: Input provided by a passive infrared sensor integral to all thermostats (exception: "-NOS" models).

- The VX4 thermostat platform provides the following optional sensors as stand-alone accessories. Data from optional sensors is trasmitted wirelessly to the primary thermostat:
  1. Remote occupancy sensor: Input provided by a passive infrared sensor. To be used in tandem with primary thermostat.
  2. Remote door or window switch: Input provided by magentic contact. Will signal HVAC unit to power off after window or door is open/ajar for a specified amount of time.
  3. Remote temperature sensor: Provides primary or secondary room temperature feedback to thermostat.

Energy management routines, definitions, and settings

Routines and definitions

- Automatic temperature changeover (system mode): thermostat automatically activates heating or cooling to maintain the desired room temperature.
- Automatic fan control mode: fan runs only when there is an active demand for heating or cooling.
- Manual fan control mode: user can select between automatic or continuous fan operation and available speeds.
- Incidental occupancy: control state when the system initailly recognizes occupancy in the space. If the space is occupied for longer than the "incidental occupancy threshold" the system will enter the "guest occupancy" state. If the room becomes physically unoccupied again within the threshold, the system will return to "setback mode".
- Guest occupancy: the primary occupancy state. Occurs if "incidental occupancy" persists beyond the "incidental occupancy threshold".
- Setback mode: state that occurs if the space is unoccupied beyond the "temperature setback delay". The state will alter the operational parameters to the setback set points for energy savings.
- Night occupancy: the state where occupancy is determined at any time during the "night occupancy period", "guest occupancy" will persist, at minimum, until the end of said period.
- Scheduler: the VX4 platform includes an optional 7-day scheduling program.

Settings

- Minimum set point: operator can set the minimum set point a guest can select.
- Maximum set point: operator can set the maximum set point a guests can select.
- Auto changeover set point offset: operator can set the difference between the guest-selected set point and the heat and cool changeover temperatures in AUTO system mode.
- 1st stage differential heat: operator can set the temperature differential that the thermostat has to sense between the automatic changeover temperature for heat and the room temperature before a call for the 1st stage heating is initiated.
- 2nd stage differential heat: operator can set the temperature differential between 1st stage heating temperature and room temperature before the 2nd stage heating is initiated.
- 1st stage differential cool: operator can set the temperature that the thermostat has to sense between the automatic changeover temperature for cool and the room temperature before a call for the 1st stage cooling is initiated.
- Forced 2nd stage heating: operator can set the number of minutes 1st stage heating will run before 2nd stage heating is automatically initiated if the guest set point is not reached and the 2nd stage heating is not initiated through differential settings.
- Recovery temperature: operator can set the room temperature that needs to be restored after setback within the "temperature recovery time".
- Temperature recovery time: operator can set the maximum period of time allowed for restoring the "recovery temperature".
- Maximum setback temperature: operator can set the highest room temperature allowed when thermostat is in the setback mode.
- Minimum setback temperature: operator can set the lowest room temperature allowed when thermostat is in the setback mode.

Settings cont...

- Temperature setback delay: operator can set the length of time for which the room that is in the occupied mode needs to be unoccupied before setback mode is initiated.
- Incidental occupancy threshold: operator can set the minimum period of time (in minutes) for which occupancy needs to be detected in order to enter the "guest occupancy" mode.
- Night occupancy threshold: operator can set the minimum period of time during the "night occupancy" period for which occupancy needs to be detected in order to enter the "night occupancy" mode.
- Night occupancy period: operator can set the period of time during the day during which the "night occupancy" mode can be activated if occupancy longer than the "night occupancy threshold" is detected.
- Auto restore: operator can set whether or not the thermostat will restore the most recent guest settings when new occupancy is detected.

Integrations and interoperability

- The VX4 platform integrates with lighting circuits to allow lighting based on occupancy. A RIB relay is needed to handle circuit based on the occupancy signal.
- The VX4 platform integrates with property management systems (PMS) for interoperability between existing property platforms and the Verdant energy management platform.
- The VX4 platform integrates with BACnet systems via IP protocol.
- The VX4 platform integrates with smart locks and door lock management systems (DLMS)
    1. Onity: utlizes in-room BLE technology for "1-way" communication.
    2. Dormakaba: can utilize "1-way" communication via server to server protocols or "2-way" communication with server to server and in-room Zigbee tandem protocols.
    3. Assa Abbloy: utilizes "1-way" communication via server to server protocols.

Networking and connectivity

- The VX4 platform utilizes sub-GHz (902-928MHz) frequency for wireless mesh communcation between thermostat devices and the gateway.
- A single gateway (ZX-OL-U) on property is capable of connecting with up to 1024 thermostat devices based 100ft maximum distance between any two devices. Varies depending on building materials.
- The VX4 platform, when networked, connects to a Verdant energy managment portal providing the following features:
    1. GUI of room states overlayed on property blueprint (optional).
    2. Visibility into each thermostat's readings on property: room temperature, humidity, and occupancy state.
    3. Visibility and control into each thermostat's operating parameters: system mode, fan mode/speed, set point(s), and on/off.
    4. Deep settings (refer to "Settings" on page 23).
- The VX4 platform is capable of providing over-the-air updates for connected applications (-XMF).

Thermostat Specs

Mechanical		
Case dimensions	5.60" x 3.46" x 0.91" (142mm x 88mm x 23mm)	
Screen dimensions	2.60" x 1.65" (66mm x 42mm)	
Operating temperature	32-105°F (0 - 41°C)	
Display temperature range	32-99°F (0-41°C)	
Setpoint temperature range	64-85°F (18-29°C) adjustable	
Terminals*	Fan High (GH) Fan Low (GL) Compressor (Y)	Heat Pump (OB) Heat (W) AUX 1 (dry contact)

**Standard configuration. All terminals are reconfigurable.*

Sensors	
Temperature Accuracy	±1°F
Built In Occupancy Sensor	Yes
Built In Occupancy Sensor Specs	Passive InfraRed (PIR) with detection range of ±47° (94°)
Compatible with Verdant Window/Door Sensors	Yes
Compatible with Verdant Wireless Occupancy Sensors	Yes
Compatible with Verdant Wireless Temperature Sensors	Yes

Electicial	
Operating Voltage	Operating Range 12-27 VAC/VDC

Communications	
Wireless Frequency	902-928MHz (NA) 863-870MHz (EU)
Mesh Network	No provisioning needed. Proprietary Sub-GHz communication protocol
Bluetooth	2.4 GHz; used during commissioning, triangulation, and communication to wireless sensors
Zigbee	Module available for Zigbee based in room integrations

Integrations	
Lighting	Yes
PMS	Yes, requires networking
Door Lock	Yes, requires networking
BACNet	Yes, requires networking
API	Yes, requires networking
Demand Response	Yes, requires networking

Certifications		
North America Certifications	ENERGY STAR: 3555667 FCC ID: 2A4JN-VX4001 IC: 28229-VX4001	
Europe Certifications	CE: Yes REACH: Yes	ROHS: Yes WEEE: Yes

Verdant Accessories

Verdant Window/Door Sensor	ZX-DWS
Verdant Wireless Occupancy Sensor	ZX-AOS
Wireless Temperature Sensor	ZX-TWS
Online Connection Kit	ZX-OL-U
Wallplate	VX4-WPT
Lighting Integration Accessories	ACC-LIT-XXX

Additional VX4 Assets

View Full Thermostat Profile	PROFILE
Download Submittal Sheet	SUBMITTAL

Thermostat Specs

Mechanical	
Case dimensions	5.60" x 3.46" x 0.91" (142mm x 88mm x 23mm)
Screen dimensions	2.60" x 1.65" (66mm x 42mm)
Operating temperature	32-105°F (0 - 41°C)
Display temperature range	32-99°F (0-41°C)
Setpoint temperature range	64-85°F (18-29°C) adjustable

Sensors	
Temperature Accuracy	±1°F
Built In Occupancy Sensor	Yes
Built In Occupancy Sensor Specs	Passive InfraRed (PIR) with detection range of ±47° (94°)
Compatible with Verdant Window/Door Sensors	Yes
Compatible with Verdant Wireless Occupancy Sensors	Yes
Compatible with Verdant Wireless Temperature Sensors	Yes

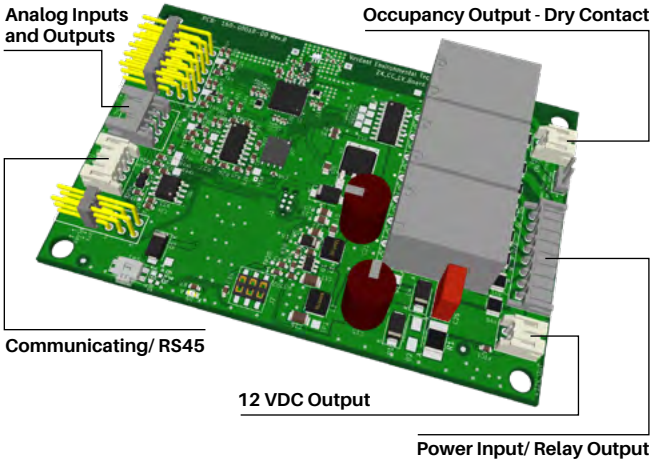
Electicial	
Operating Voltage	2 x 1.5VDC AA Alkaline Non-rechargeable Batteries - Field Supplied 24VAC or 12VDC

Communications	
Wireless Frequency	902-928MHz (NA) 863-870MHz (EU)
Mesh Network	No provisioning needed. Proprietary Sub-GHz communication protocol
Bluetooth	2.4 GHz; used during commissioning, triangulation, and communication to wireless sensors
Zigbee	Module available for Zigbee based in room integrations

Integrations	
Lighting	Yes
PMS	Yes, requires networking
Door Lock	Yes, requires networking
BACNet	Yes, requires networking
API	Yes, requires networking
Demand Response	Yes, requires networking

Wireless Control Card Specs

Mechanical		
Case dimensions	4.08" x 2.76" x 1.02" (123mm x 70mm x 26mm)	
Inputs	(3) Analog 12VDC	
Outputs	(5) Terminal Relays (2) Aux Relays (3) Analog	(2) RS485 12VDC
Operating Voltage	12-27 VDC/VAC	
Terminals	Fan High (GH) Fan Low (GL) Compressor (Y)	Heat Pump (OB) Heat (W) AUX 1 AUX 2



Certifications		
North America Certifications	ENERGY STAR: 3543493 FCC ID: 2A4JN-VX4001 IC: 28229-VX4001	
Europe Certifications	CE: Yes REACH: Yes	ROHS: Yes WEEE: Yes

Verdant Accessories

Verdant Window/Door Sensor	ZX-DWS
Verdant Wireless Occupancy Sensor	ZX-AOS
Wireless Temperature Sensor	ZX-TWS
Online Connection Kit	ZX-OL-U
Wireless Control Card	AC-CC
Wallplate	VX4-WPT
Lighting Integration Accessories	ACC-LIT-XXX
Door Lock Integration	ACC-DK/AA/BLE

Additional VX4 Assets

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Thermostat Specs

Mechanical		
Case dimensions	5.60" x 3.46" x 0.91" (142mm x 88mm x 23mm)	
Screen dimensions	2.60" x 1.65" (66mm x 42mm)	
Operating temperature	32-105°F (0 - 41°C)	
Display temperature range	32-99°F (0-41°C)	
Setpoint temperature range	64-85°F (18-29°C) adjustable	
Terminals	Fan High (GH) Fan Low (GL) Compressor (Y)	Heat Pump (OB) Heat (W) AUX 1

Sensors	
Temperature Accuracy	±1°F
Built In Occupancy Sensor	No
Compatible with Verdant Window/Door Sensors	Yes
Compatible with Verdant Wireless Occupancy Sensors	No
Compatible with Verdant Wireless Temperature Sensors	Yes

Electicial	
Operating Voltage	2 x 1.5VDC AA Alkaline Non-rechargeable Batteries - Field Supplied 24VAC or 12VDC

Communications	
Wireless Frequency	902-928MHz (NA) 863-870MHz (EU)
Mesh Network	No provisioning needed. Proprietary Sub-GHz communication protocol
Bluetooth	2.4 GHz; used during commissioning, triangulation, and communication to wireless sensors
Zigbee	Module available for Zigbee based in room integrations

Integrations	
PMS	Yes, requires networking
Door Lock	Yes, requires networking
BACNet	Yes, requires networking
API	Yes, requires networking
Demand Response	Yes, requires networking

Certifications		
North America Certifications	ENERGY STAR: 3555667 FCC ID: 2A4JN-VX4001 IC: 28229-VX4001	
Europe Certifications	CE: Yes REACH: Yes	ROHS: Yes WEEE: Yes

Verdant Accessories

Verdant Window/Door Sensor	ZX-DWS
Verdant Wireless Occupancy Sensor	ZX-AOS
Wireless Temperature Sensor	ZX-TWS
Online Connection Kit	ZX-OL-U
Wallplate	VX4-WPT

Additional VX4 Assets

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Thermostat Specs

Mechanical	
Case dimensions	5.60" x 3.46" x 0.91" (142mm x 88mm x 23mm)
Screen dimensions	2.60" x 1.65" (66mm x 42mm)
Operating temperature	32-105°F (0 - 41°C)
Display temperature range	32-99°F (0-41°C)
Setpoint temperature range	64-85°F (18-29°C) adjustable

Sensors	
Temperature Accuracy	±1°F
Built In Occupancy Sensor	Yes
Built In Occupancy Sensor Specs	Passive InfraRed (PIR) with detection range of ±47° (94°)
Compatible with Verdant Window/Door Sensors	Yes
Compatible with Verdant Wireless Occupancy Sensors	Yes
Compatible with Verdant Wireless Temperature Sensors	Yes

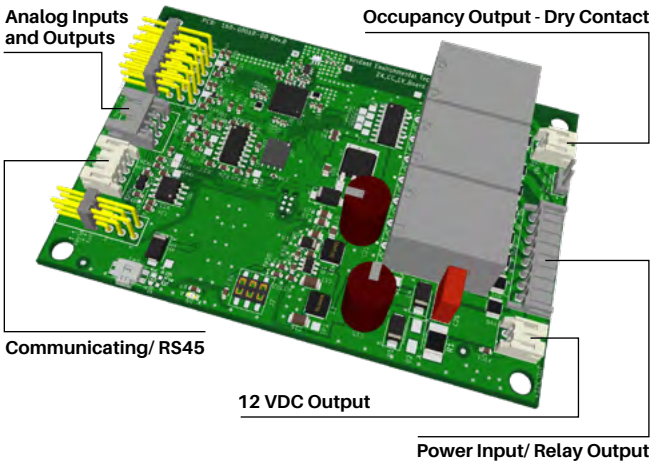
Electicial	
Operating Voltage	2 x 1.5VDC AA Alkaline Non-rechargeable Batteries - Field Supplied 24VAC or 12VDC

Communications	
Wireless Frequency	902-928MHz (NA) 863-870MHz (EU)
Mesh Network	No provisioning needed. Proprietary Sub-GHz communication protocol
Bluetooth	2.4 GHz; used during commissioning, triangulation, and communication to wireless sensors
Zigbee	Module available for Zigbee based in room integrations

Integrations	
Lighting	Yes
PMS	Yes, requires networking
Door Lock	Yes, requires networking
BACNet	Yes, requires networking
API	Yes, requires networking
Demand Response	Yes, requires networking

Wireless Control Card Specs

Mechanical		
Case dimensions	4.08" x 2.76" x 1.02" (123mm x 70mm x 26mm)	
Inputs	(3) Analog 12VDC	
Outputs	(5) Terminal Relays (2) Aux Relays (3) Analog	(2) RS485 12VDC
Operating Voltage	12-27 VDC/VAC	
Terminals	Fan High (GH) Fan Low (GL) Compressor (Y)	Heat Pump (OB) Heat (W) AUX 1 AUX 2



Certifications		
North America Certifications	ENERGY STAR: 3543493 FCC ID: 2A4JN-VX4001 IC: 28229-VX4001	
Europe Certifications	CE: Yes REACH: Yes	ROHS: Yes WEEE: Yes

Verdant Accessories

Verdant Window/Door Sensor	ZX-DWS
Verdant Wireless Occupancy Sensor	ZX-AOS
Wireless Temperature Sensor	ZX-TWS
Online Connection Kit	ZX-OL-U
Wireless Control Card	AC-CC
Wallplate	VX4-WPT

Additional VX4 Assets

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Thermostat Specs

Mechanical		
Case dimensions	5.60" x 3.46" x 0.91" (142mm x 88mm x 23mm)	
Screen dimensions	2.60" x 1.65" (66mm x 42mm)	
Operating temperature	32-105°F (0 - 41°C)	
Display temperature range	32-99°F (0-41°C)	
Setpoint temperature range	64-85°F (18-29°C) adjustable	
Terminals*	Fan High (GH) Fan Low (GL) Compressor (Y)	Heat Pump (OB) Heat (W) AUX 1 (dry contact)

**Standard configuration. All terminals are reconfigurable.*

Sensors	
Temperature Accuracy	±1°F
Built In Occupancy Sensor	Yes
Built In Occupancy Sensor Specs	Passive InfraRed (PIR) with detection range of ±47° (94°)
Compatible with Verdant Window/Door Sensors	Yes
Compatible with Verdant Wireless Occupancy Sensors	Yes
Compatible with Verdant Wireless Temperature Sensors	Yes

Electicial	
Operating Voltage	Operating Range 12-27 VAC/VDC

Communications	
Wireless Frequency	902-928MHz (NA) 863-870MHz (EU)
Mesh Network	No provisioning needed. Proprietary Sub-GHz communication protocol
Bluetooth	2.4 GHz; used during commissioning, triangulation, and communication to wireless sensors
Zigbee	Module available for Zigbee based in room integrations

Integrations	
Lighting	Yes
PMS	Yes, requires networking
Door Lock	Yes, requires networking
BACNet	Yes, requires networking
API	Yes, requires networking
Demand Response	Yes, requires networking

Certifications		
North America Certifications	FCC ID: 2A4JN-VX4001 IC: 28229-VX4001	
Europe Certifications	CE: Yes REACH: Yes	ROHS: Yes WEEE: Yes

Verdant Accessories

Verdant Window/Door Sensor	ZX-DWS
Verdant Wireless Occupancy Sensor	ZX-AOS
Wireless Temperature Sensor	ZX-TWS
Online Connection Kit	ZX-OL-U
Wallplate	VX4-WPT
Lighting Integration Accessories	ACC-LIT-XXX
Add VRF Adapter for Daikin, Fujitsu, Hitachi	ACC-AZA-X

Additional VX4 Assets

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Thermostat Specs

Mechanical		
Case dimensions	5.60" x 3.46" x 0.91" (142mm x 88mm x 23mm)	
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Operating temperature	32-105°F (0 - 41°C)	
Display temperature range	32-99°F (0-41°C)	
Setpoint temperature range	64-85°F (18-29°C) adjustable	
Terminals	Fan High (GH) Fan Low (GL) Compressor (Y)	Heat Pump (OB) Heat (W) AUX 1

Sensors	
Temperature Accuracy	±1°F
Built In Occupancy Sensor	No
Compatible with Verdant Window/Door Sensors	Yes
Compatible with Verdant Wireless Occupancy Sensors	No
Compatible with Verdant Wireless Temperature Sensors	Yes

Electicial	
Operating Voltage	2 x 1.5VDC AA Alkaline Non-rechargeable Batteries - Field Supplied 24VAC or 12VDC

Communications	
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Integrations	
PMS	Yes, requires networking
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BACNet	Yes, requires networking
API	Yes, requires networking
Demand Response	Yes, requires networking

Certifications	
North America Certifications	FCC ID: 2A4JN-VX4001 IC: 28229-VX4001
Europe Certifications	CE: Yes REACH: Yes ROHS: Yes WEEE: Yes

Verdant Accessories

Verdant Window/Door Sensor	ZX-DWS
Verdant Wireless Occupancy Sensor	ZX-AOS
Wireless Temperature Sensor	ZX-TWS
Online Connection Kit	ZX-OL-U
Wallplate	VX4-WPT
Lighting Integration Accessories	ACC-LIT-XXX
Add VRF Adapter for Daikin, Fujitsu, Hitachi	ACC-AZA-X

Additional VX4 Assets

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Warranty

Refer to **www.verdant.copeland.com/verdant-warranty**.

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.

US PATENTS: 8,369,994; 8,141,791; 7,918,406; 7,841,542; 7,838,803; RE40,437; 7,232,075; 7,185,825; 7,156,318; 7,152,806; 7,145,110; 7,058,477; 7,050,026; 7,028,912; 6,902,117; 6,789,739; 6,786,421; 6,619,555; 6,581,846; 6,578,770;
CANADIAN PATENTS: CA2615065; CA2633113; CA2633121; CA2633200; OTHER PATENTS PENDING.