PROLON

QUICK START GUIDE

VAV Controllers & Wall Sensors

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[IMPORTANT INFORMATION - READ BEFORE YOU BEGIN]

For simplicity and consistency, temperature values shown in this document are displayed in Fahrenheit (°F). Prolon Focus can be configured by the user to display either Fahrenheit (°F) or Celsius (°C) based on preference or regional requirements.

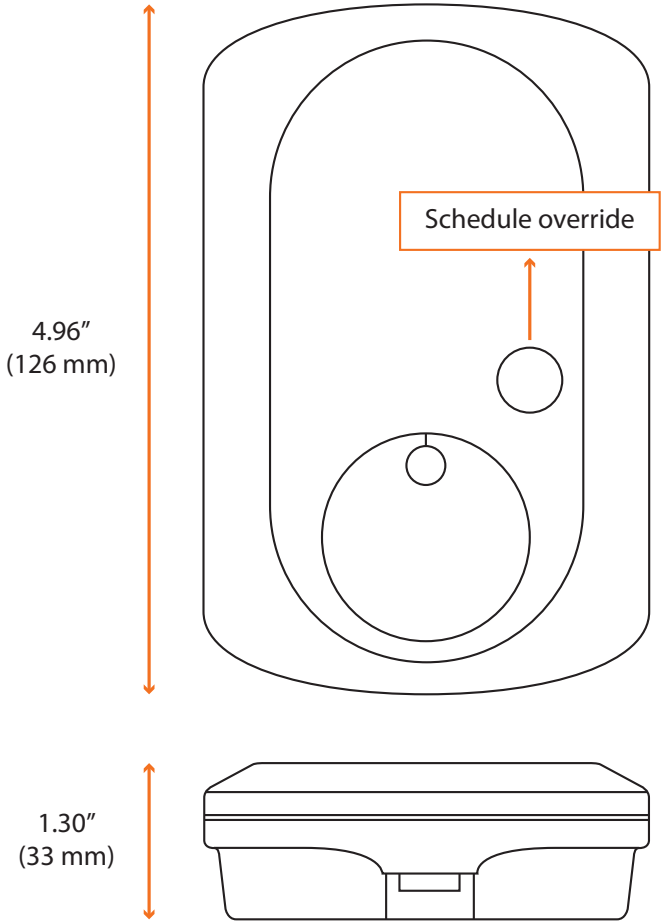
Prolon products also support metric and imperial measurement options, where applicable.

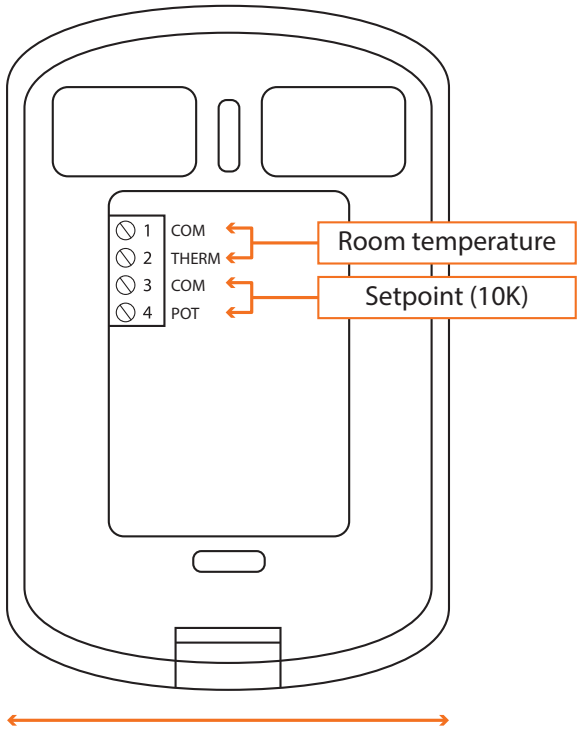
Product availability, features, and specifications may vary by region.

Images and information are provided for reference only and may change without notice.

Analog Sensor (PL-RS)

Dimensions and Wiring

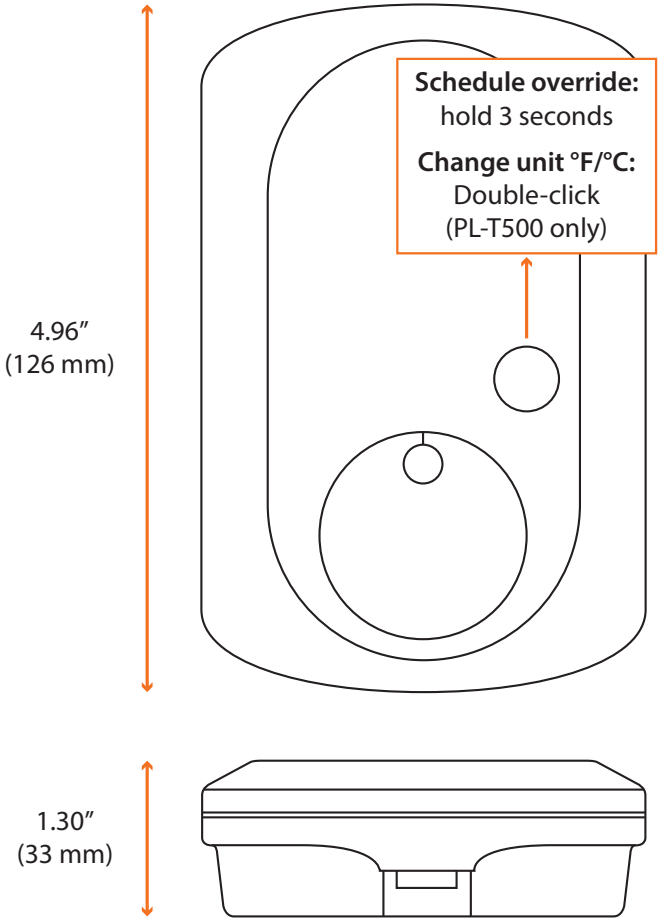


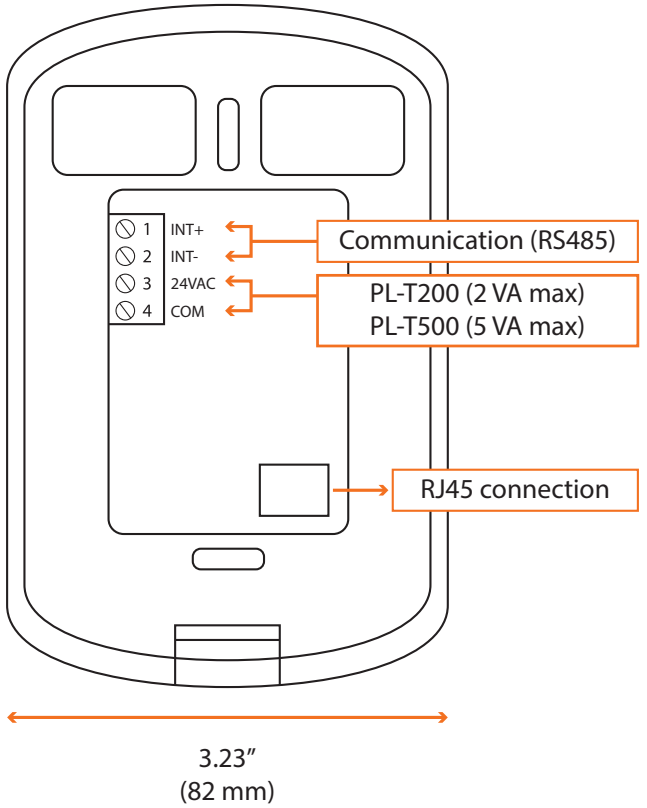


Temperature table (thermistor: 10K-3)								
Fahrenheit	41	50	59	68	77	86	95	104
Celsius	5	10	15	20	25	30	35	40
Ohms	25395	19903	15714	12493	10000	8056	6530	5324

Communicating Wall Sensor (PL-T200 / PL-T500)

Dimensions and Wiring





Installation of communicating wall sensor

(PL-T200, PL-T500, PL-T1000)

Installation

1. Separate the mounting base from the wall sensor by pushing on the tab at the bottom of the assembly. (Figure 1)
2. Pull wire(s) through large center hole of back cover.
3. Fasten the mounting base to the wall using included screws.
4. Connect wires:
    - If using twisted pair wires:
        - Pull out the screw terminal blocks.
        - Remove 1 cm insulation from the end of each wire.
        - Connect the wires to the terminal blocks and re-connect the terminal blocks to the circuit board, if removed. (Figure 2)
    - If using CAT5 cable:
        - Plug the cable into the RJ45 jack of the communicating wall sensor (if CAT5 cable is opened at the controller, refer to Figure 3 for pinout of the RJ45 jack).
5. Reconnect top cover.

IMPORTANT! Do not install the wall sensor under the following conditions:

- Any location exposed to direct sunlight.
- On an outside wall.
- Near an air discharge grill.
- In a location where vertical air circulation is restricted.
- Near a dimmer switch.
- Above a heat source.

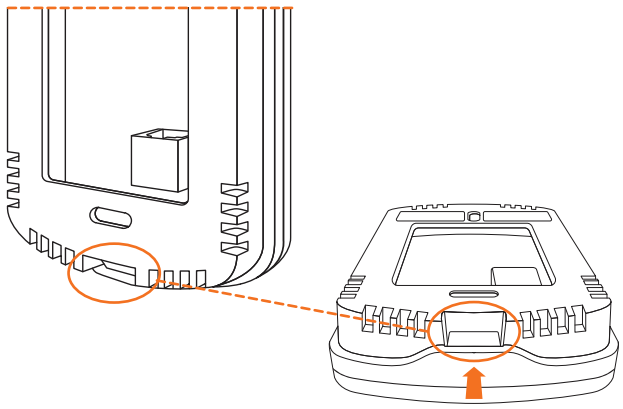


Figure 1

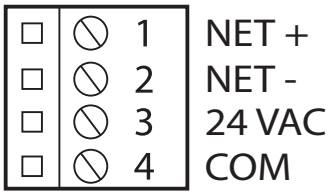


Figure 2

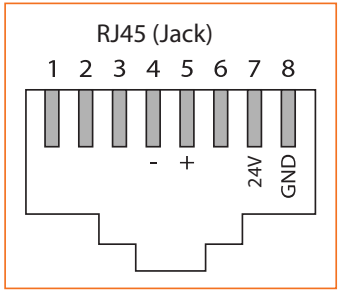


Figure 3

Remote Tempreature Sensor (PL-T1000)

Auxiliary Analog Input

The PL-T1000 has auxiliary analog input which can be used to connect another thermistor. The PL-T1000 can be configured to use this alternate temperature reading for a variety of functions, including temperature averaging or radiant floor slab temperature. The alternate thermistor (10K-3 only) is connected to the auxiliary input using the “AUX IN“ and “COM“ pins.

Case #1 Remote sensor only

- Physical connection: connect remote sensor into terminals 9 and 10 (see Figure 4)
- PL-T1000 configuration: set PL-T1000 analog input to “Aux Only”

Case #2 Averaging 2 sensors (1x remote, 1x internal)

- Physical connection: connect remote sensor into terminals 9 and 10 (see Figure 4)
- PL-T1000 configuration: set PL-T1000 analog input to “Average”

Case #3 Averaging 4 sensors (4x remote)

- Physical connection: connect 4 sensors (10K-3 only) in Series-Parallel configuration (see Figure 5) or in Parallel-Series configuration (see Figure 6) to terminals 9 and 10
- PL-T1000 configuration: set PL-T1000 analog input to “Aux Only”

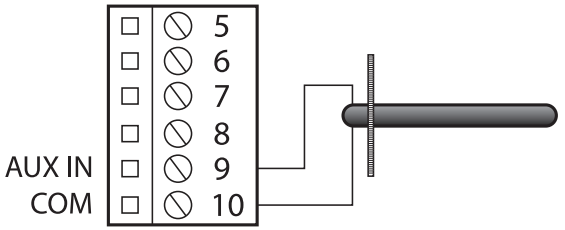


Figure 4 - Remote Temp Sensor

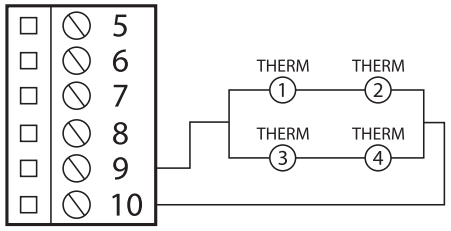


Figure 5 - Averaging multiple remote sensors (Series-Parallel)

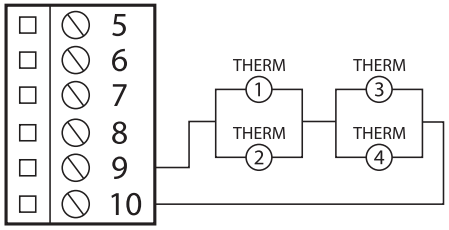
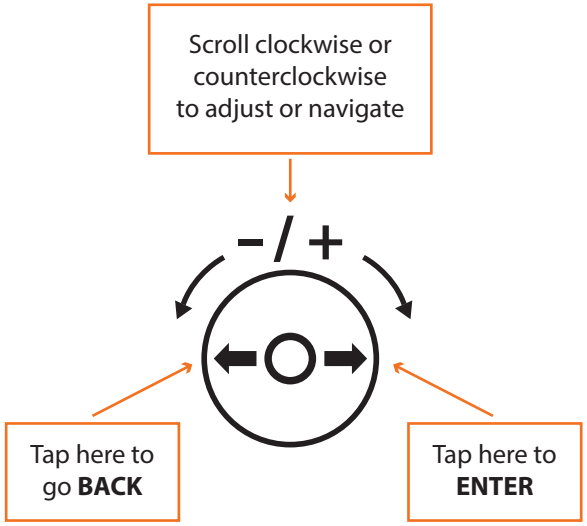


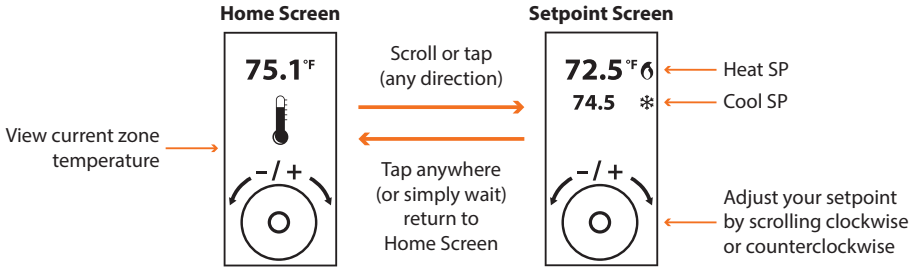
Figure 6 - Averaging multiple remote sensors (Parallel-Series)

Operation

The PL-T1000 is controlled using the circular touch pad on the bottom half of the thermostat. The touch pad uses capacitive sensing technology to detect finger proximity. There are no moving parts to push or rotate. The PL-T1000 is operated using scrolling, tapping, or holding motions around the circular touchpad. The center of the touchpad is not used.

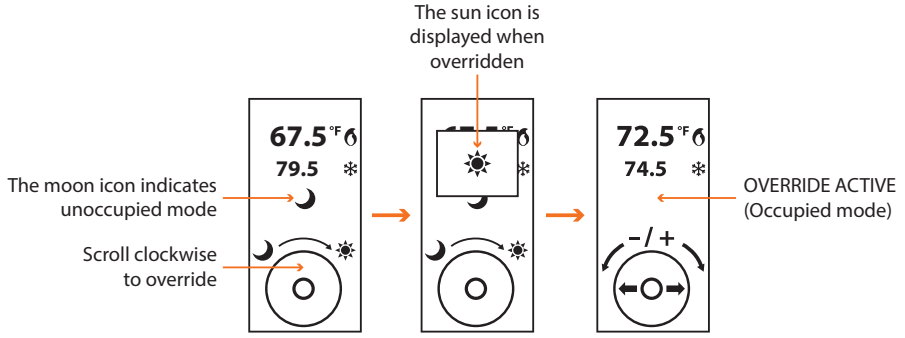


Changing the Setpoint

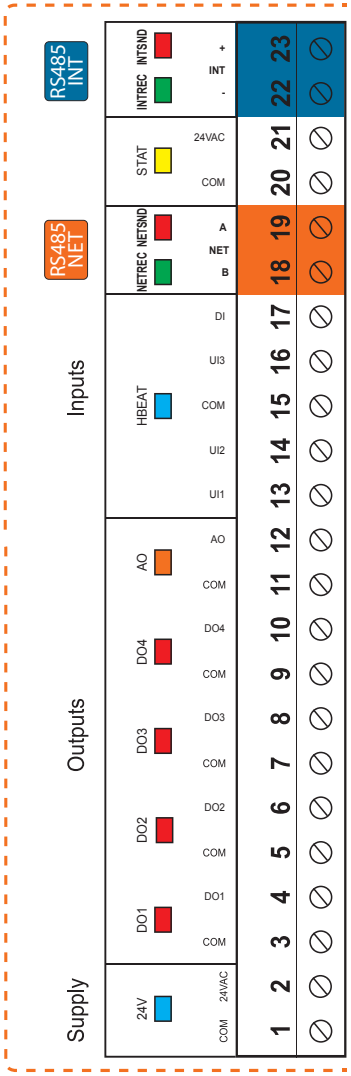


Schedule Override

First, go to the Setpoint screen.



VAV Zone Controller (PL-C1050-VAV)

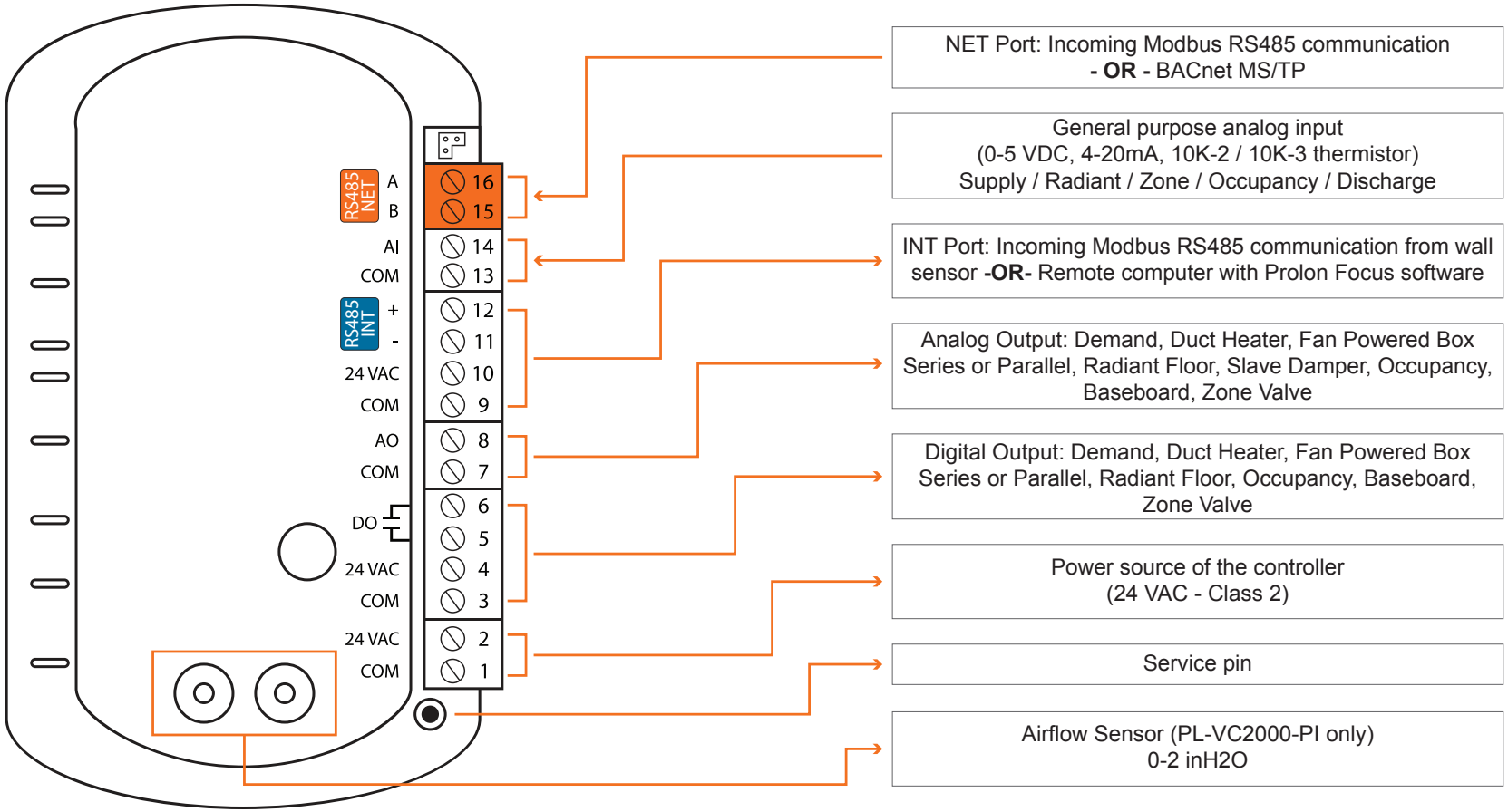


- INT Port: Incoming Modbus RS485 communication from wall sensor **- OR -** Remote computer with Prolon Focus software
- Power supply to digital sensor (24 VAC)
- NET Port: Incoming Modbus RS485 communication **- OR -** BACnet MS/TP
- Digital Input for night setback / Standby mode
- Multi-function analog input
- Common for all the inputs
- Temperature setpoint (0-10K potentiometer)
- Room temperature sensor (10K-2 / 10K-3 thermistor)
- Output 5 (analog 0-10VDC) (Max Current: 40 mA)
- Output 4 - Isolated or source, TRIAC 24 VAC (max current: 300 mA)
- Output 3 - Isolated or source, TRIAC 24 VAC (max current: 300 mA)
- Output 2 - Isolated or source, TRIAC 24 VAC (max current: 300 mA)
- Output 1 - Isolated or source, TRIAC 24 VAC (max current: 300 mA)
- Power source of the controller (24 VAC - Class 2)

-4 to 122 °F (-20 to 50 °C) Non-condensing

cULus Listed; UL 916 Energy Management Equipment, File E364757, Vol.1

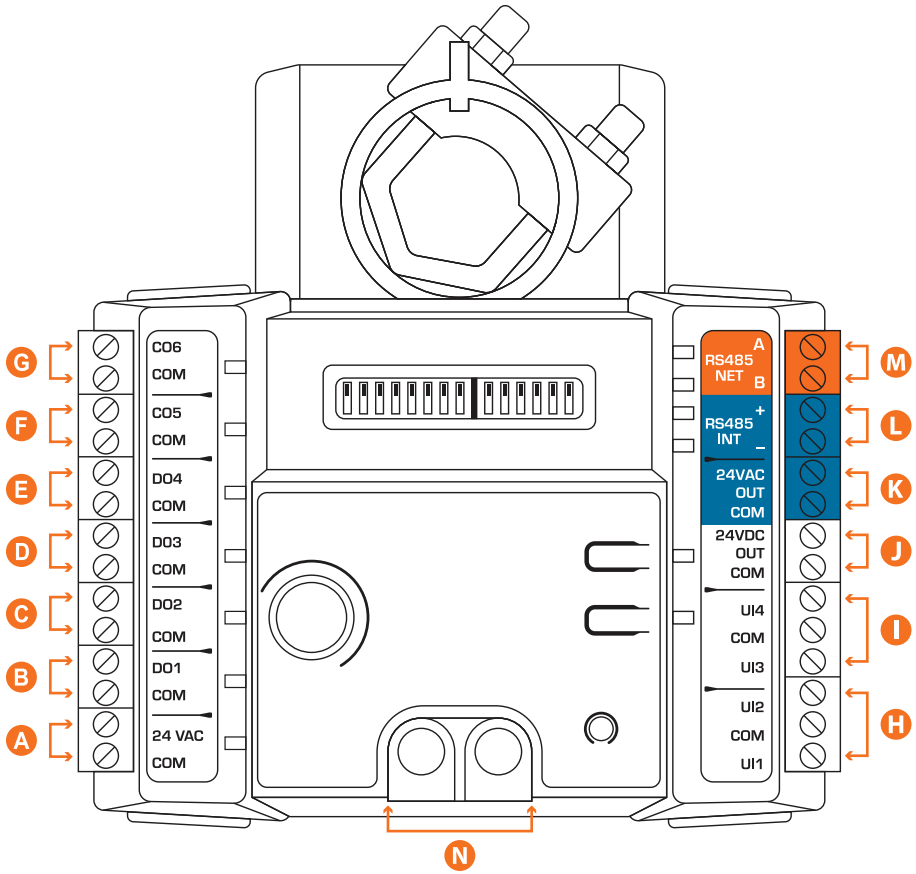
VAV Zone Controller (PL-VC2000(-PI))



32-122 °F (0-50 °C) Non-condensing

cULus Listed; UL 916 Energy Management Equipment, File E364757, Vol.1

Zone / Bypass Damper Controllers (PL-VC3000XX(-XX))



LETTER	PL-VC3000-FL-PI	PL-VC3000-LT(-XX)
A	Power Supply for controller 24 VAC (Class 2)	Power Supply for controller 24 VAC (Class 2)
B	Digital Outputs (24 VAC)	Digital Outputs (24 VAC)
C		Not Available
D		Not Available
E		Not Available
F	Configurable Outputs 0-10 VDC or 24 VAC Dry contact	Not Available
G		Configurable Outputs 0-10 VDC or 24 VAC Dry contact
H	Universal Inputs (10K-2, 10K-3, 0-5/1-5/0-10/2-10 VDC, 0-20/4-20mA, Dry contact)	Universal Inputs (10K-2, 10K-3, 0-5/1-5/0-10/2-10 VDC, 0-20/4-20mA, Dry contact)
I		Not Available
J	24 VDC power OUT	Not Available
K	Wall Sensor Power Out	Wall Sensor Power Out
L	Wall Sensor Communication	Wall Sensor Communication
M	Network Communication	Network Communication
N	Flow Sensor (0-2 inH2O)	Flow Sensor (0-2 inH2O) *(not available on the PL-VC3000-LT-PD)*

32-122 °F (0-50 °C) Non-condensing

Compliance

Digital Sensor (PL-T1000)

- FCC Compliant to CFR47, Part 15, Subpart B, Class B
- Industry Canada (IC) Compliant to ICES-003, Issue 5: CAN ICES-3 (B) / NMB-3(B)
- RoHS Directive (2002/95/EC)

VAV Zone Controller (PL-C1050-VAV / PL-VC2000-XX)

- cULus Listed; UL 916 Energy Management Equipment, File E364757, Vol.1
- CAN/CSA-C22.2 No. 2015-12, Signal Equipment
- FCC Compliant to CFR47, Part 15, Subpart B, Class B
- Industry Canada (IC) Compliant to ICES-003, Issue 5: CAN ICES-3 (B) / NMB-3(B)
- RoHS Directive (2002/95/EC)

Zone / Bypass Damper Controllers (PL-VC3000XX-XX)

- FCC Compliant to CFR47, Part 15, Subpart B, Class A
- Industry Canada (IC) Compliant to ICES-003, Issue 5: CAN ICES-3 (B)/NMB-3(B)
- RoHS Directive (2002/95/EC)
- EN 55032 – Class A
- EN 55035
- EN 61000-3-2
- EN 61000-3-3
- And the EMC portions of the following standards: IEC/EN 60730-1:2022/2024

FCC User Information

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.

Industry Canada

This Class (B) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment regulations.

Cet appareil numérique de la Classe (B) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Electrical Specifications

PL-RS

- **Supply**: None

PL-T200

- **Supply**: 24 VAC ±10%, 50/60 Hz, Class 2
- **Consumption**: 2 VA max

PL-T500 / PL-T1000

- **Supply**: 24 VAC ±10%, 50/60 Hz, Class 2
- **Consumption**: 5 VA max

PL-C1050-VAV

- **Supply**: 24 VAC ±10%, 50/60 Hz, Class 2
- **Consumption**: 2 VA (Typ), 32 VA (Input)

PL-VC2000(-PI)

- **Supply**: 24 VAC ±10%, 50/60 Hz, Class 2
- **Consumption**: 3 VA (Typ), 5 VA (Max), 24 VA (Input)

PL-VC3000LT(-XX)

- **Supply**: 24 VAC ±10%, 50/60 Hz, Class 2
- **Consumption**: 2.0 VA (Typical), 2.5 VA (Max), 30 VA (input @ max rated specs)

PL-VC3000FL(-PI)

- **Supply**: 24 VAC ±10%, 50/60 Hz, Class 2
- **Consumption**: 2.0 VA (Typical), 2.5 VA (Max), 85 VA (input @ max rated specs)