Carrier

TruVu

i-Vu® Building Automation System

TruVu™ Dual IP Bypass Controller

Part Number: TV-VVTBP-E2

i Vu

The TruVu dual IP VVT bypass controller is used to regulate the supply duct static pressure for a variety of pressure-dependent VVT applications and allows constant volume HVAC equipment to provide zone level temperature control. This completely programmable advanced controller features an integrated actuator for easy installation onto bypass dampers. It ships with Carrier factory engineered and tested applications for bypass control. The daisy chained BACnet IP communications deliver plug-and-play connectivity to the Carrier i-Vu building automation system.

Application Features

- Sophisticated factory-engineered and tested control programs provide reliability and energy efficiency
- Temperature protection minimizes the occurrence of air source heating and/or cooling lockouts based on unacceptable discharge temperatures
- Provides automatic pressure sensor calibration
- Can drive multiple damper actuators
- VFD support via 0-10VDC analog output to provide drive speed modulation
- Supports two simultaneous application control programs, for customized application solutions
- Programmable control of dampers, VFDs and other auxiliary equipment using Snap graphical programming
- Supports Carrier communicating sensors which are available in a variety of zone and equipment sensing combinations
- Supports Carrier TruVu touchscreen interfaces for managing and troubleshooting the connected equipment easily and for occupant engagement
- Conforms to the BACnet Advanced Application Controller (B-AAC) Standard Device and BACnet Broadcast Management Device (B-BMD), as defined in BACnet 135-2001 2012 Annex L and tested to Protocol Revision 15

Hardware Features

- Integrated 45 in-lb 154 second actuator for reliability and longevity
- Dual 10/100 Mbps, BACnet IP and DCHP IP addressing
- Native BACnet IP or MS/TP communications
- Supports home run, daisy chain and ring IP network topologies
- Capacitor-backed real-time clock keeps time in the event of power failure or network interruption for up to three days
- Controls up to 9 points (3 binary outputs, 4 universal inputs and 2 analog output) plus up to 2 Act Net Smart Actuators
- USB port for local device updates, hard-wired, and wireless service connections
- Reversible airflow connections allows for error free tube installation

System Benefits

- Integrated Carrier airside linkage algorithm for plug-and-play integration with Carrier air sources
- Fully plug-and-play with the i-Vu building automation system

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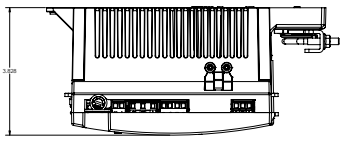
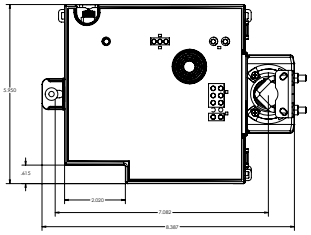
Specifications

BACnet Support		Conforms to the BACnet Advanced Application Controller (B-AAC) and BACnet Broadcast Management Device (B-BBMD) standard device profiles, as defined in BACnet 135-2012 Annex L Protocol rev. 15
Power Requirements		24Vac +/- 15% , 50 - 60Hz, 50VA | 24Vdc +/- 10%, 18W. (75VA / 35W if additional Act Net devices are connected)
Communication	BAS Primary Port	Dual 10/100 BaseT Ethernet ports with built-in fail safe, supporting direct connection or daisy chain topology natively using BACnet/IP (non-routing)
	Serial Port 1	EIA-485 port for BACnet MS/TP communications (9600 bps to 115.2 kbps)
	Rnet Port	12Vdc @ 260mA supports the following: Up to 10 ZS sensors (mix ZS zone, ZS duct, ZS immersion and ZS outdoor sensors), i-Vu Equipment Touch, or TruVu ET Displays (external power required)
	Act Net Port	Supports up to 2 Act Net communicating i-Vu smart valves
	2 USB Ports	For TruVu ET Display support |configuration | wireless service access | firmware updates and controller recovery via USB drive
Inputs	Universal	4 Universal Inputs electronically configurable to any of the following types: Dry | Pulse Counting |Thermistor | 0-10 Vdc
Outputs	Analog	2 Analog Outputs 10Vdc @ (D/A Resolution 12 bits) | PWM 12Vdc @ 80Hz
	Digital	3 Digital outputs (Dry Contact) Rated @30Vac/Vdc @ 1.4 Amp. Configured normally open
Actuator		Brushless DC motor, torque 45 inch-pounds (5Nm), runtime 154 seconds for 90 degree travel during control
Integral Pressure Sensor		Precision low flow AWM series 0–2 in. H_2O, sensitive down to ±0.001 in. H_2O. Barbed tapered airflow connections accept 3/16 in. (4.75 mm) I.D. tubing. Allows for readings across the 0–2 in. H_2O range, accurate to ±3% of reading. Reversible connections
Real Time Clock		Real-time clock keeps track of time in the event of a power failure for at least 3 days
Status Indicators		LED status indicators for IP and S1 communications, run status, error, power, all outputs, and locator LEDs for controller identification and actuator rotation feedback
Memory		4 GBs eMMC Flash memory and 256 MB DDR3 DRAM. User data is archived to non-volatile flash memory when parameters are changed every 90 seconds
Compliance		**United States:** FCC compliant to Title CFR47, Part 15, Subpart B, Class A; UL Listed, File E143900; CCN PAZX, UL 916, Energy Management Equipment; **ANZ**: RCM Mark AS/NZS 61000-6-3; **Canada**: UL Listed File E143900, CCN PAZX7, CAN/CSA C22.2 No. 205 Signal Equip., Industry Canada Compliant ICES-003, Class A; **CE Mark** Compliant with 2014/30/EU, and **RoHS** Compliant: 2015/863/EU; **UKCA** Mark compliant with Electromagnetic Compatibility Regulations 2016 – Gov.UK and RoHS for Electrical and Electronic Equipment 2012.
Environmental Operating Range		**Operating:** 32 to 122ºF (0 to 50ºC) 10 to 95% RH, non-condensing **Storage:** -24 to 140ºF (-30 to 60ºC) 0 to 90% RH, non-condensing
Plastic		Fire-retardant plastic ABS, UL94-5VA
Dimensions		**Width:** 8.367 in. (21.25 cm) **Length:** 5.95 in. (15.11 cm) **Depth:** 3.828 in. (9.72 cm) **Weight:** 1.8 lbs (0.82 kg) **Minimum Shaft Diameter:** 3/8 in. (.95 cm) **Maximum Shaft Diameter:** 1/2 in. (1.27 cm) **Minimum Shaft Length:** 1 3/4 in. (4.45 cm)





For more information, contact your local Carrier Controls Expert.

Controls Expert Locator:
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