



### Overview

The ECC-VAVS Series makes use of the latest technology to provide more flexibility of control and reliability than traditional VAV controllers. The 16-bit analog-digital converter provides high accuracy input and flow pressure sensor readings and allows for precise VAV balancing. The ECC-VAVS series wireless models feature an integrated wireless receiver that can be used with a variety of wireless sensors and contacts.

ECC-VAVS series features an I/O capability of 2 universal (analog or digital) inputs, 2 digital (triac) and 1 LED output that allows you to simultaneously control multiple instances of virtually any type of HVAC equipment including baseboards, single and multi-stage duct heaters, fans and floating valve actuators, lights, etc. The ECC-VAVS model features a drift-free differential pressure sensor that resists loss of accuracy over time due to dust particle accumulation.

Easily configured by using the EC-Configure plug-in through any LNS-based software such as Distech Controls Lonwatcher 3, or by using a multi-protocol platform software supporting LONWORKS devices such as EC-Net<sup>AX</sup> software powered by the Niagara<sup>AX</sup> Framework. These configuration interfaces are designed to simplify configuring and sequencing methods by prompting the user for the necessary configuration data.

Distech Controls also offers the EC-Smart-Sensor-VAV, a communicating sensor and balancing tool designed to work with the ECC-VAVS / ECC-VVTS as a fixed or portable tool. The EC-Smart-Sensor-VAV is a multi-purpose device that shows readings and status on its LCD display, allows users to adjust temperatures and facilitates flow calibration.

### Applications

- Designed to meet the requirements of single duct variable air volume (VAV) or variable volume according to temperature (VVT) applications.
- Recommended control applications such as:
  - Cooling only VAV box
  - Cooling with reheat VAV box

### Features & Benefits

- LONMARK VAV Controller approved to ensure interoperability and interchangeability with other manufacturers' LonMark-approved VAV Controllers.
- LNS-based EC-Configure plug-ins or Niagara<sup>AX</sup>-based EC-Configure Wizards, allowing you to choose a preferred platform to configure and interface with the controller.
- Save time with the configurable window-based drop-down menus, text and check boxes, to configure inputs and outputs only (the sequences will adapt to the configured parameters). Complies with standard control sequences found in the market.
- Extended actuator lifetime with the ECC-VAVs' built-in brushless constant-speed damper actuator when compared to brush motor technologies.
- No damper de-synchronization or periodic damper re-initialization required as the ECC-VAVs' integrated position feedback allows for precise damper positioning.
- Accurate on-board air flow sensor with 16-bit A/D converter for precise air flow monitoring and controls at low and high flow values.
- Universal inputs (which support from 100 Ohms to 100 000 Ohms) allow retrofit of an existing installation by reusing existing sensors. The universal inputs let you use engineer-specified sensors or even your own preferred sensors.
- Two triac outputs to control floating valves, two-stage duct heaters or other 2-position equipment.
- One LED output to indicate the system status to building occupants.

## Product Warranty & Total Quality Commitment

All Distech Controls product lines are built to meet rigorous quality standards and carry a two-year warranty. Distech Controls is an ISO 9001 registered company. Distech Controls' products provide both the contractor and the end user with the flexibility of using "best-of-breed" products in system design.

## Available Smart-Sensor Models



ECC-VAVS

### ECC-VAVS

#### 5-Point Single Duct VAV (Variable Air Volume) Configurable Controllers

- 2 universal inputs
- 2 digital (triac) outputs
- 1 LED output
- Integrated air-flow sensor
- Built-in actuator

### ECC-VVTS

#### 5-Point Single Duct VVT (Variable Volume Temperature) Configurable Controller

Same features as ECC-VAVS with built-in actuator but no integrated air-flow sensor.

### ECC-VAVS-W

#### 5-Point Single Duct VAV (Variable Air Volume) Configurable Wireless Controller

Same as ECC-VAVS but with integrated 868.3MHz receiver with internal antenna. Not intended for installation inside of a metal enclosure.

### ECC-VAVS-W (with External Antenna)

#### 5-Point Single Duct VAV (Variable Air Volume) Configurable Wireless Controller

Same as ECC-VAVS but with integrated 868.3MHz receiver with external antenna. Recommended when installed in a metal enclosure.



ECC-VVTS

### ECC-VVTS-W

#### 5-Point Single Duct VVT (Variable Volume Temperature) Configurable Wireless Controller

Same as ECC-VVTS but with integrated 868.3MHz receiver with internal antenna. Not intended for installation inside of a metal enclosure.

### ECC-VVTS-W (with External Antenna)

#### 5-Point Single Duct VVT (Variable Volume Temperature) Configurable Wireless Controller

Same as ECC-VVTS but with integrated 868.3MHz receiver with external antenna. Recommended when installed in a metal enclosure.



All controller models requiring the external antenna must have the antenna ordered at the initial purchase. The external antenna cannot be added to the controller at a later time.

## Supported Platforms



### LonWorks Network Services (LNS)

LNS is a client-server platform that allows multiple users, running different LNS-compatible applications, to access a common source for directory, installation, management, monitoring and control services for the network system being managed. Distech Controls' Lonwatcher is an example of a LonWorks-based network management tools that can use Plug-Ins to configure and monitor controllers and devices in the control system.



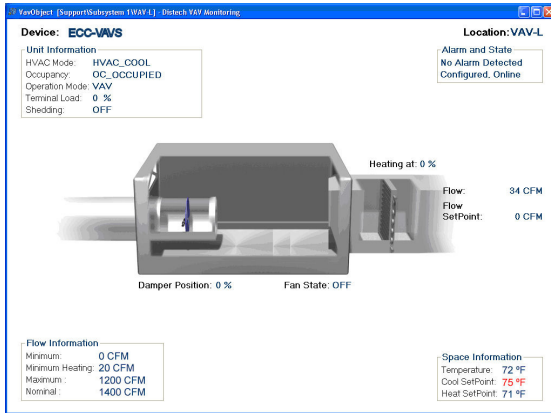
### Niagara<sup>AX</sup> Framework

The Niagara<sup>AX</sup> Framework is the next generation of Niagara that builds on the multi-protocol, web-based concept of its predecessor. Niagara<sup>AX</sup> normalizes the development environment for building new software. Distech Controls' EC-Net<sup>AX</sup> Pro is a multi-protocol software platform that can use Wizards to configure and monitor controllers and devices in the control system.

## Distech Controls Software LNS Plug-Ins and EC-Net<sup>AX</sup> Wizards

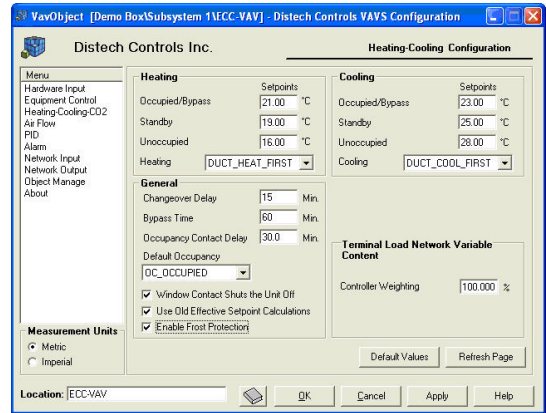
### EC-Monitor Plug-in

The monitoring plug-in is a graphical user interface that monitors all device parameters including inputs, outputs, alarms and device status. There is no more need to create any graphics pages and as it can be launched from any GUI that supports plug-in applications, graphics dynamically adapt themselves to the configuration of the device as well as the real time values being monitored.



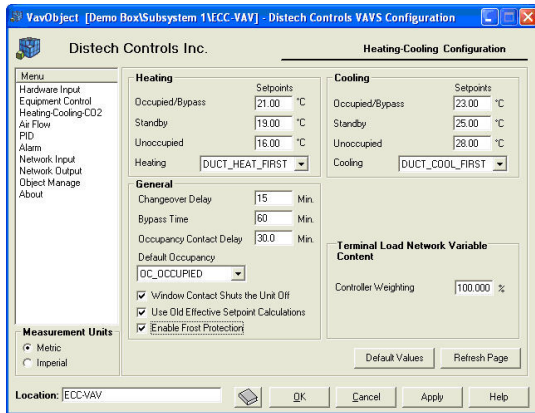
### EC-Configure Plug-in

Easily configure all of the devices' parameters including inputs, outputs, fan and valve settings, heating and cooling setpoints, amongst others. You can also enable and configure additional built-in features such as morning warm-up, load shedding, frost protection and slave operation mode.



### EC-Configure EC-Net<sup>AX</sup> Wizards

Designed for use with EC-Net<sup>AX</sup> (powered by the Niagara<sup>AX</sup> Framework), the EC-Configure EC-Net<sup>AX</sup> Wizards offer all the same features accessible within the LNS plug-in. Simply add the device to your LON network and immediately launch the configuration wizard with a couple clicks of your mouse!



## Recommended Peripherals

### EC-Smart-Sensor-VAV



#### EC-Smart-Sensor-VAV:

- Communicating sensor with 2-line LCD
- Setpoint adjustment
- Occupancy override
- Indoor and outdoor air temperature display
- VAV balancing

### Temperature Sensors



EC- SENSOR	Room temperature sensor
EC-SENSOR-LO	Room temperature sensor with LED and override push button
EC-SENSOR-SLO-F	Room temperature sensor with LED, override push button and setpoint adjustment (°F)
EC-SENSOR-SLO-C	Room temperature sensor with LED, override push button and setpoint adjustment (°C)
EC-SENSOR-SLO-CW	Room temperature sensor with LED, override push button and setpoint adjustment (cool/warm)
EC-SENSOR-AVG	Averaging room temperature sensor, no setpoint (Up to 3 in parallel)

### Wireless Sensors (Wireless models only)



SR04 Series

Wireless, solar-cell powered room temperature sensor with optional setpoint adjustment and override button.



41-580

Wireless solar-cell powered motion detector.



2-channel Light Switch  
4-channel Light Switch

2-/4-channel wireless light switches (European models).

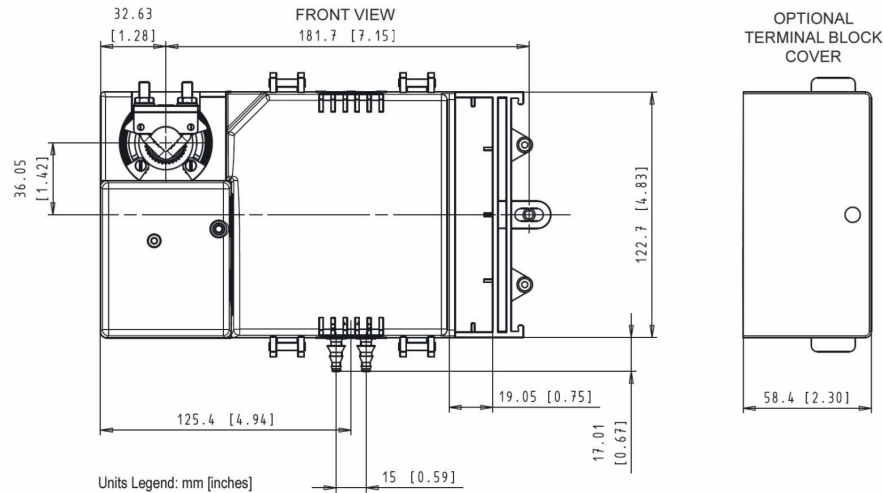


PTM265  
PTM265D

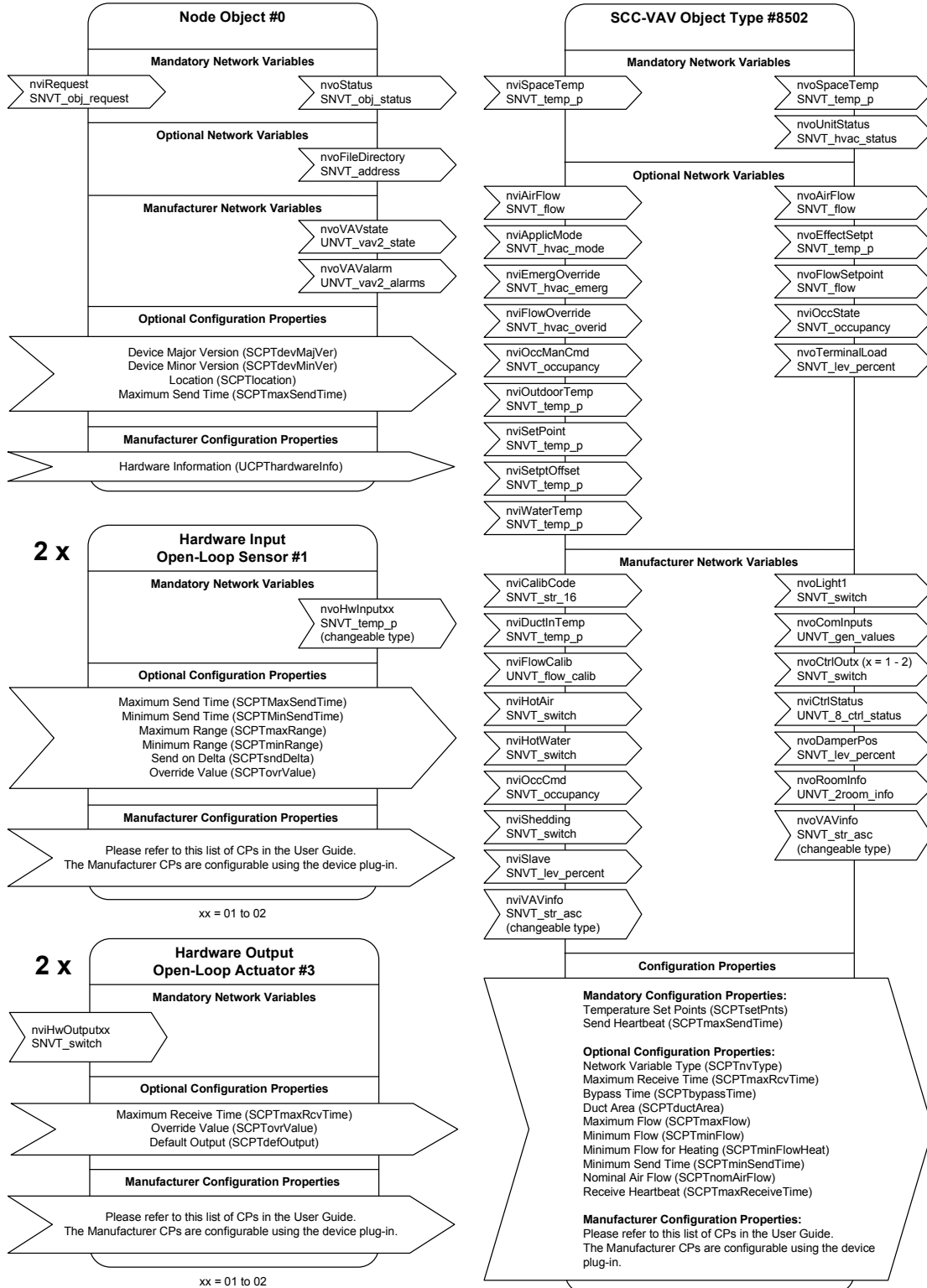
2-/4-channel wireless light switched (North American models).

For more information on these or other Distech Controls products please refer to our web site at [www.distech-controls.com](http://www.distech-controls.com) or contact [sales@distech-controls.com](mailto:sales@distech-controls.com).

## Product Specifications



<b>Power</b>		<b>Wireless Receiver<sup>1</sup></b>	
Voltage:	24VAC/DC; ±15%; 50/60HZ; Class 2	Wireless Receiver:	EnOcean RCM120 – 868.3MHz
Protection:	2.0A removable fuse for triacs when using the internal power supply	Number of Wireless Inputs: <sup>4</sup>	4
Typical Consumption:	12VA; Triac outputs (1 valve @ 4VA) & 1 outputs with 20mA load @ 10VDC	<b>Inputs</b>	
Maximum Consumption:	60VA (if internal power supply is used)	Quantity:	2
<b>Environmental</b>		Input Types:	Universal (software configurable)
Operating Temperature:	0°C to 70°C; 32°F to 158°F	-Voltage:	0-10VDC
Storage Temperature:	-20°C to 70°C; -4°F to 158°F	Resolution:	0.1 °C; 0.18 °F
Relative Humidity:	0 to 90% Non-condensing	-Current:	4-20mA with 249Ω external resistor (wired in parallel)
<b>General</b>		-Digital:	Dry contact
Processor:	Neuron <sup>®</sup> 3150; 8 bits; 10MHZ	-Pulse:	Dry contact; 500ms minimum ON/OFF
Memory:	Non-volatile Flash 64K (APB applications and configuration properties)	-Resistor:	
Communication:	LonTalk protocol	<i>Thermistor:</i> <sup>2</sup>	10KΩ Type 2, 3
Channel:	TP/FT-10; 78Kbps	<i>Platinum:</i>	Range: -40°C to 150°C; -40°F to 302°F
<b>Enclosure</b>		<i>Potentiometer:</i>	Pt1000 (1KΩ)
Material:	FR/ABS	Range: -40°C to 150°C; -40°F to 302°F	Pt100 (100Ω)
Color:	Black & blue casing & grey connectors	Range: -40°C to 135°C; -40°F to 275°F	Translation table configurable on several points
Dimensions (with Screws):	4.8" x 8.4" x 2.5" (122.7mm x 214.3mm x 63.0mm)	Input Resolution:	16-bit analog / digital converter
Shipping Weight:	2.30lbs (1.05kg)	<b>Outputs</b>	
<b>Electromagnetic Compatibility</b>		Quantity:	3
CE -Emission:	EN61000-6-3: 2001; Generic standards for residential, commercial and light-industrial environments	2 Digital:	24VAC Triac, digital (on/off), PWM or floating
-Immunity:	EN61000-6-1: 2001; Generic standards for residential, commercial and light-industrial environments		- 0.75A @ 70°C; 158°F
FCC:	This device complies with FCC rules part 15, subpart B, class B		- 1A @ 40°C; 104°F
			- PWM control: adjustable period from 2 seconds to 15 minutes
<b>Agency Approvals</b>			- Floating control: requires two consecutive outputs
UL Listed (CDN & US)	UL916 Energy management equipment	1 Digital:	- Min pulse on/off: 500msec.
Material: <sup>3</sup>	UL94-5VA	Output Resolution:	- Adjustable drive time period
			External or internal power supply (jumper selectable)
<b>Supported Platforms and Communication Protocols</b>			0-10VDC dedicated output for occupancy sensor
			LED. Max. 20mA
		<b>Damper Actuator</b>	10-bit digital / analog converter
		Motor:	Belimo LMZS-H (Brushless)
		Torque:	35in-lb, 4Nm
		Angles of Rotation:	95°adjustable
		Fits Shaft Diameter:	5/16-3/4"; 8.5-18.2mm
		Power Supply:	From controller
<ol style="list-style-type: none"> <li>Available only on ECC-VAVS series wireless models.</li> <li>For temperature type inputs it is recommended that a 10KΩ thermistor be used due to better accuracy over the Pt1000 or Pt100.</li> <li>All materials and manufacturing processes comply with the Waste Electrical and Electronic Equipment (WEEE) directive  and the RoHS directive .</li> <li>Some wireless sensors may use more than one wireless input from the controller.</li> </ol>			



Specifications subject to change without notice.

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