



## Models in this Series



Model	ECP-VAVS	ECP-VAV	ECP-VVT	ECP-VAV-N
Points	7-Point VAV	12-Point VAV	11-Point VVT	11-Point VAV
Universal inputs	2	4	4	4
Built-in flow sensor (0-1 in. W.C.)	■	■		■
Wireless inputs <sup>1</sup>	14	14	14	14
Digital (triac) outputs	2	4	4	4
Digital (0 – 10VDC) LED occupancy output	1	0	0	0
Universal outputs	0	2	2	2
Built-in Actuator	■	■	■	
Product Number (EC-Program)	CDIP-VASX-02	CDIP-VAXX-00	CDIP-VTXX-00	CDIP-VANX-00
Product Number (EC-gfxProgram)	CDIP-VASG-02	CDIP-VAXG-00	CDIP-VTXG-00	CDIP-VANG-00

1. Available when an optional Wireless Receiver is connected to the controller.

## Recommended Applications

Model	ECP-VAVS	ECP-VAV	ECP-VVT	ECP-VAV-N
Cooling Only VAV Box	■		■	
Cooling w/Reheat VAV Box	■		■	
Cooling w/Reheat VAV Box & Perimeter Heating		■	■	
Parallel Fan VAV Box		■		
Series Fan VAV Box		■		
Dual Duct VAV Box <sup>1</sup>	■			
Large Damper VAV Box Requiring More Than 35 in-lb (4 Nm) Actuator Torque				■
Existing Damper Actuator				■
Room Pressurization		■		

1. For a Dual Duct VAV system, two controllers are required or one controller with an external flow sensor and actuator.

## Open-to-Wireless Wireless Receiver – Optional



To reduce the cost of installation, and minimize the impact on existing partition walls, the Wireless Receiver enables every controller from this series to communicate with a line of wireless battery-less room sensors and switches.

- Wireless Receiver (315) - Receiver for EnOcean® 315MHz wireless-enabled sensors and switches
- Wireless Receiver (868) - Receiver for EnOcean 868.3MHz wireless-enabled sensors and switches

Note that controllers have one wireless port to support a single Wireless Receiver.

For more information about the EnOcean technology and Open-to-Wireless, refer to the Open-to-Wireless Solution Guide. For more information about the Wireless Receiver module, refer to the Wireless Receiver Datasheet. These documents can be found on our web site at [www.distech-controls.com](http://www.distech-controls.com).



## Complementary Products

### Temperature Sensors

#### Supported Smart-Sensors (EC-gfxProgram only)



EC-Smart-Sensor-VAV	Communicating sensor with 2-line LCD, setpoint adjustment, occupancy override, room temperature display, and VAV airflow balancing
EC-Smart-Sensor-100	Communicating sensor with 2-line LCD, setpoint adjustment, occupancy override, and room temperature display
EC-Smart-Sensor-200	Communicating sensor with 2-line LCD, setpoint adjustment, fan speed control, occupancy override, HVAC mode selection, and room temperature display
EC-Smart-Sensor-FC	Communicating sensor with 2-line LCD, setpoint adjustment, fan speed control, and room temperature display
EC-Smart-Sensor-FC-CF	Communicating sensor with 2-line LCD, setpoint adjustment, fan speed control, room temperature display, and °C/°F toggle button

#### Allure EC-Sensor

Line of discrete sensors



EC-Sensor	Room temperature sensor with communication jack
EC-Sensor-O	Room temperature sensor with occupancy override button and communication jack
EC-Sensor-S	Room temperature sensor with setpoint adjustment and communication jack
EC-Sensor-SO	Room temperature sensor with setpoint adjustment, occupancy override button, and communication jack
EC-Sensor-SOF	Room temperature sensor with setpoint adjustment, occupancy override button, fan speed selection, and communication jack

### Open-to-Wireless Sensors and Switches (requires Wireless Receiver and EC-gfxProgram)

#### Allure Wireless Battery-less ECW-Sensor

Line of wireless, battery-less sensors. Available in EnOcean 315MHz and 868.3MHz versions.



ECW-Sensor	Room temperature sensor
ECW-Sensor-O	Room temperature sensor with occupancy override button
ECW-Sensor-S	Room temperature sensor with setpoint adjustment
ECW-Sensor-SO	Room temperature sensor with setpoint adjustment and occupancy override button
ECW-Sensor-SOF	Room temperature sensor with setpoint adjustment, occupancy override button, and fan speed selection

#### Wireless EnOcean Sensors and Switches



41-580	Wireless solar-cell powered motion detector. Available at 868.3MHz.
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2-channel Light Switch 4-channel Light Switch	2-/4-channel wireless light switches (European models). Available at 315MHz or 868.3MHz.
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PTM265 PTM265D	2-/4-channel wireless light switches (North American models). Available at 315MHz or 868.3MHz.
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For a complete list of the Open-to-Wireless EnOcean sensors and switches that are compatible with the controllers in this series, refer to the Open-to-Wireless Solution Guide which can be found on our web site at [www.distech-controls.com](http://www.distech-controls.com).

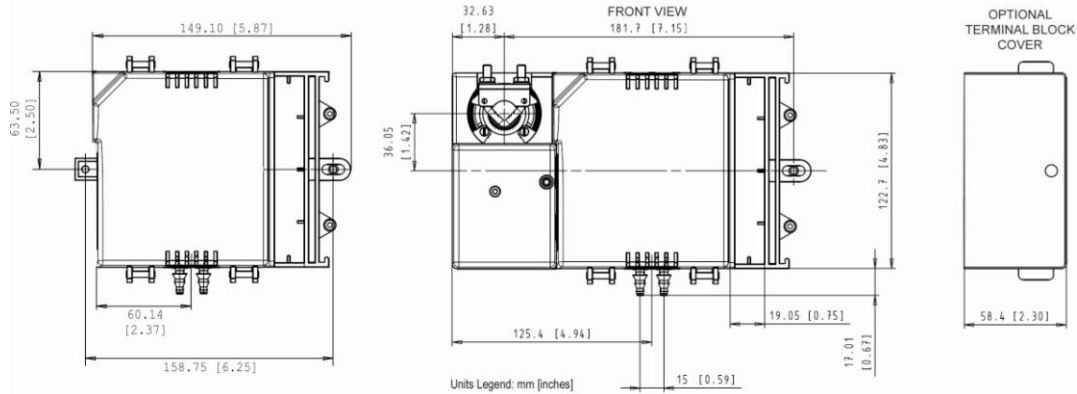
#### Other



Terminal Block Cover	Cover designed to conceal the wire terminals. Required to meet local safety regulations in certain jurisdictions.
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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).

## Controller Dimensions



## Product Specifications

### Power

Voltage	24VAC; $\pm 15\%$ ; 50/60Hz; Class 2
Protection	3.0A user-replaceable fuse for triac outputs when using the internal power supply
Typical Consumption	
- ECP-VAVS	12VA; triac outputs (1 valve @ 4VA) & 1 output with 20mA load @ 12VDC
- Other models	18VA; triac outputs (2 valves @ 4VA) & 2 outputs with 20mA load @ 12VDC
Maximum Consumption	
- ECP-VAVS	40VA - if internal power supply is used
- Other models	70VA - if internal power supply is used

### Interoperability

Communication Channel	LonTalk protocol
Channel	TP/FT-10; 78Kbps
LONMARK Interoperability Guidelines	Version 3.4
Device Class	Multi I/O module
LONMARK Functional Profile	
- Input objects	Open-Loop Sensor #1
- Output objects	Open-Loop Actuator #3

### Hardware

Processor	Neuron <sup>®</sup> 3150; 8 bits; 10MHZ
Memory	Non-volatile Flash 64K (APB applications) Non-volatile Flash 128K (storage)

### Environmental

Operating Temperature	0°C to 50°C; 32°F to 122°F
Storage Temperature	-20°C to 50°C; -4°F to 122°F
Relative Humidity	0 to 90% Non-condensing

### Enclosure

Material	FR/ABS
Color	Black & blue casing & grey connectors
Dimensions (with Screws)	
- ECP-VAV-N	4.8" x 5.9" x 2.5" (122.7mm x 149.1mm x 63.0mm)
- Other models	4.8" x 8.4" x 2.5" (122.7mm x 214.3mm x 63.0mm)
Shipping Weight	
- ECP-VAV-N	0.92lbs (0.42kg)
- Other models	2.30lbs (1.05kg)

### Integrated Damper Actuator

Motor	Belimo LMZS-H brushless DC motor
Torque	35 in-lb, 4 Nm
Degrees of Rotation	95° adjustable
Fits Shaft Diameter	5/16 to 3/4"; 8.5 to 18.2mm

### Inputs

Input Types	Universal; software configurable
-Voltage	0-10VDC
-Current	4-20mA with 249Ω external resistor (wired in parallel)
-Digital	Dry contact
-Pulse	Dry contact; 500ms minimum ON/OFF
-Resistor	
<i>Thermistor</i>	10KΩ Type 2, 3 (10KΩ @ 25°C; 77°F) Range: -40°C to 150°C; -40°F to 302°F
<i>Platinum</i>	Pt1000 (1KΩ @ 0°C; 32°F) Range: -40°C to 150°C; -40°F to 302°F
<i>Nickel</i>	Pt100 (100Ω @ 0°C; 32°F) Range: -40°C to 135°C; -40°F to 275°F
<i>Potentiometer</i>	RTD Ni1000 (1KΩ @ 0°C; 32°F) Range: -40°C to 150°C; -40°F to 302°F
Input Resolution	Translation table configurable on several points
Differential Pressure	16-bit analog / digital converter Range: 0 to 250 Pa (0 to 1.0 in. W.C.) Resolution: 0.000162 milli-in. W.C. Accuracy: $\pm 3\%$ full scale

### Outputs

Digital	24 VAC Triac, digital (on/off), PWM, or floating <sup>1</sup> ; software configurable
	- 0.5A continuous
	- PWM control: adjustable period from 2 seconds to 15 minutes
	- Floating control: requires two consecutive outputs <sup>1</sup>
	- Min pulse on/off: 500msec.
	- Adjustable drive time period
	External or internal power supply (jumper selectable)
Digital LED occupancy output	0-10VDC dedicated output for occupancy sensor LED. Max. 20mA
Universal	0-10VDC, digital 0-12VDC (on/off), floating <sup>1</sup> or PWM
	- PWM control: adjustable period from 2 seconds to 15 minutes
	- Floating control: requires two consecutive outputs <sup>1</sup>
	- Min pulse on/off: 500msec.
	- Adjustable drive time period
	- 20mA max. @ 12VDC
	- Minimum load resistance 600Ω
Output Resolution	10-bit digital / analog converter

## Product Specifications (continued)



### Wireless Receiver<sup>2,4</sup>

Communication	EnOcean wireless standard
Number of wireless inputs <sup>3</sup>	14
Supported Wireless Receivers	Wireless Receiver (315) Wireless Receiver (868)
Cable	Telephone cord
- Connector	4P4C modular jack
- Length	6.5ft; 2m

### Electromagnetic Compatibility

CE -Emission	EN61000-6-3: 2007; Generic standards for residential, commercial and light-industrial environments
-Immunity	EN61000-6-1: 2007; Generic standards for residential, commercial and light-industrial environments
FCC	This device complies with FCC rules part 15, subpart B, class B



- Available only when controller is programmed with EC-gfxProgram.
- Available when an optional external Wireless Receiver is connected to the controller. Refer to the Open-to-Wireless Solution Guide for a list of supported EnOcean wireless modules.
- Some wireless sensors may use more than one wireless input from the controller.
- An EC-Smart-Sensor and Wireless Receiver cannot be used at the same time. However, an EC-Smart-Sensor can be temporarily connected to a controller in wireless mode to perform VAV airflow balancing.
- All materials and manufacturing processes comply with the RoHS directive  and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive .

### EC-Smart-Sensors<sup>4</sup>

Models Supported	EC-Smart-Sensor-VAV, EC-Smart-Sensor-100 EC-Smart-Sensor-200, EC-Smart-Sensor-FC EC-Smart-Sensor-FC-CF
Power & communication	2-wire
Number of sensors supported	1

### Agency Approvals

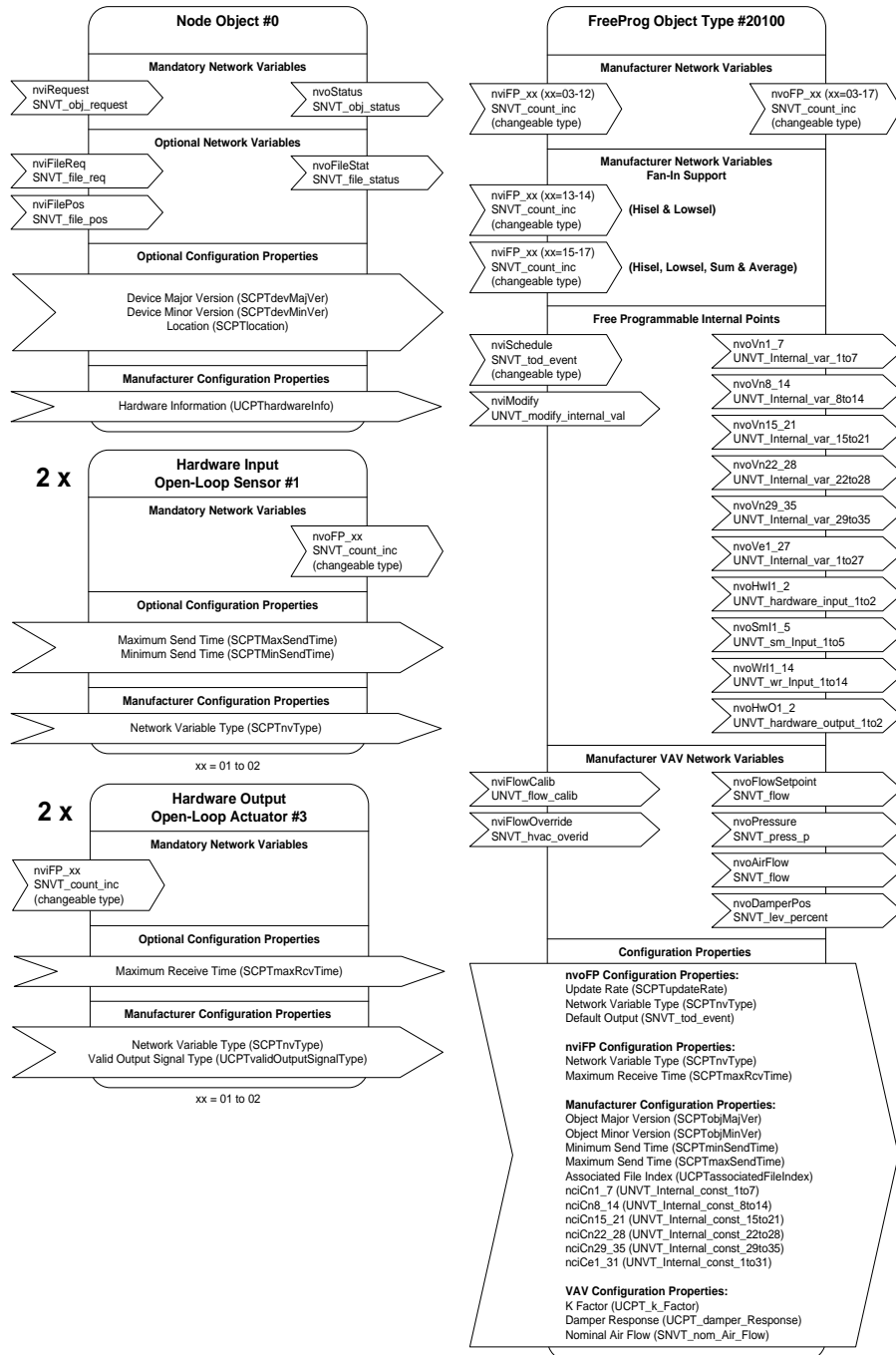
UL Listed (CDN & US)	UL916 Energy management equipment
Material <sup>5</sup>	UL94-5VA



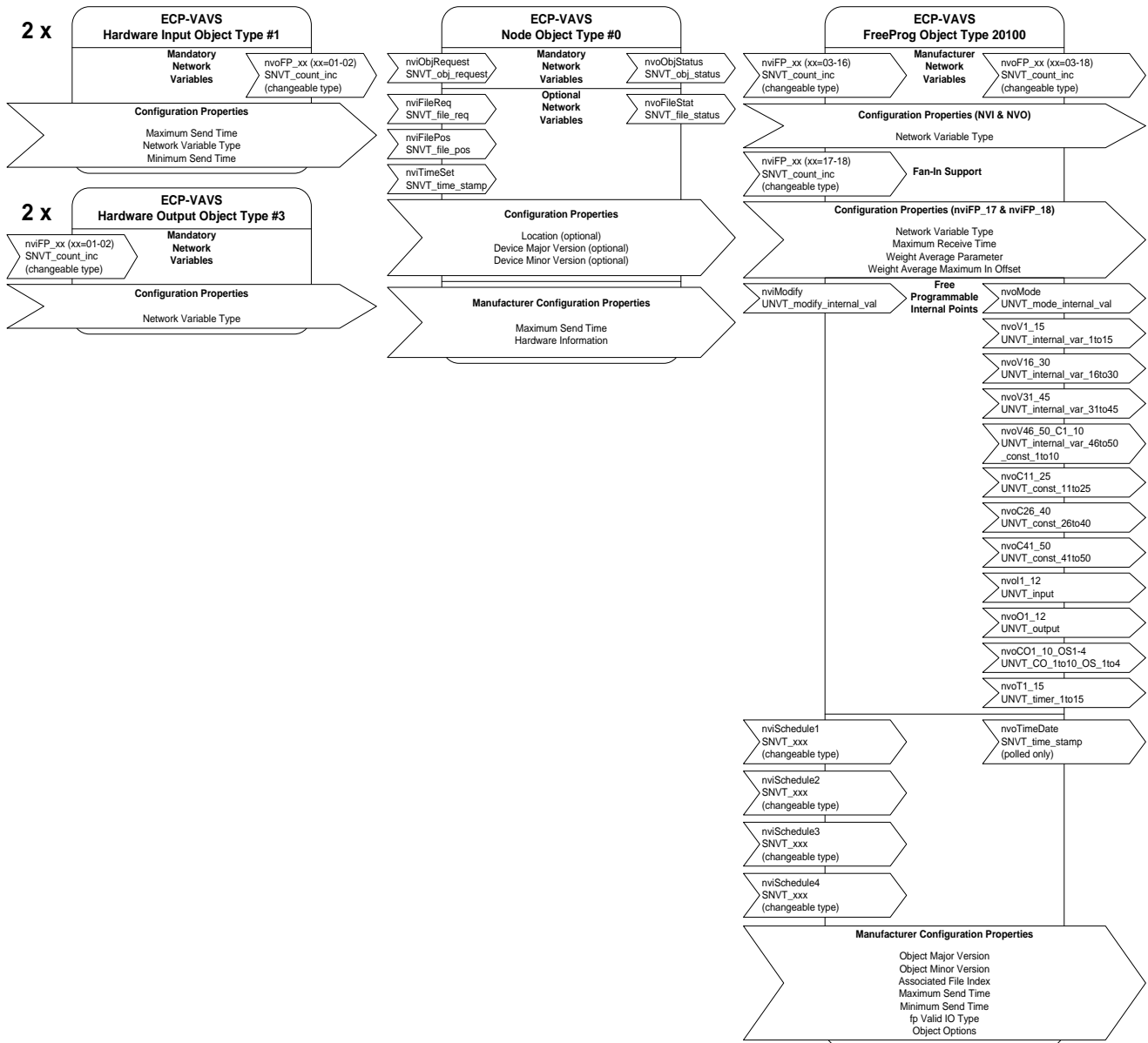
### Communication Protocols and Standards



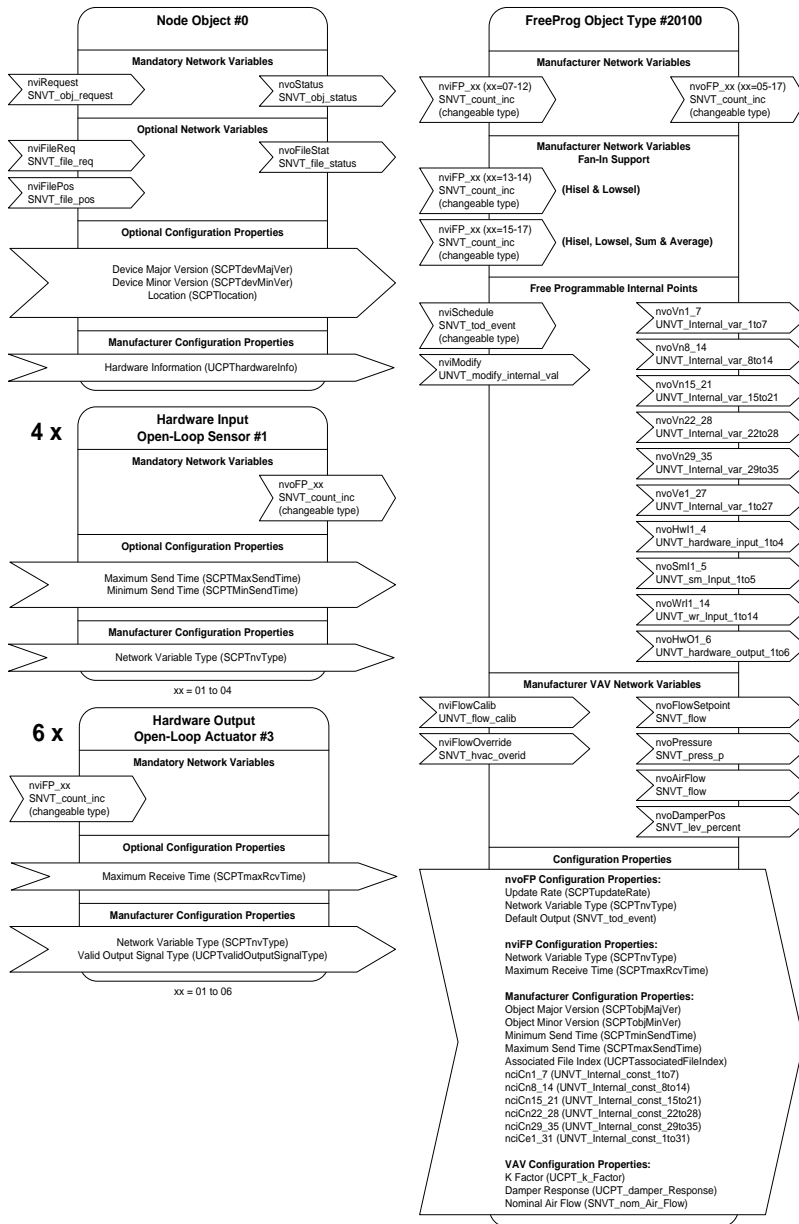
# Functional Profile of ECP-VAVS (with EC-gfxProgram)



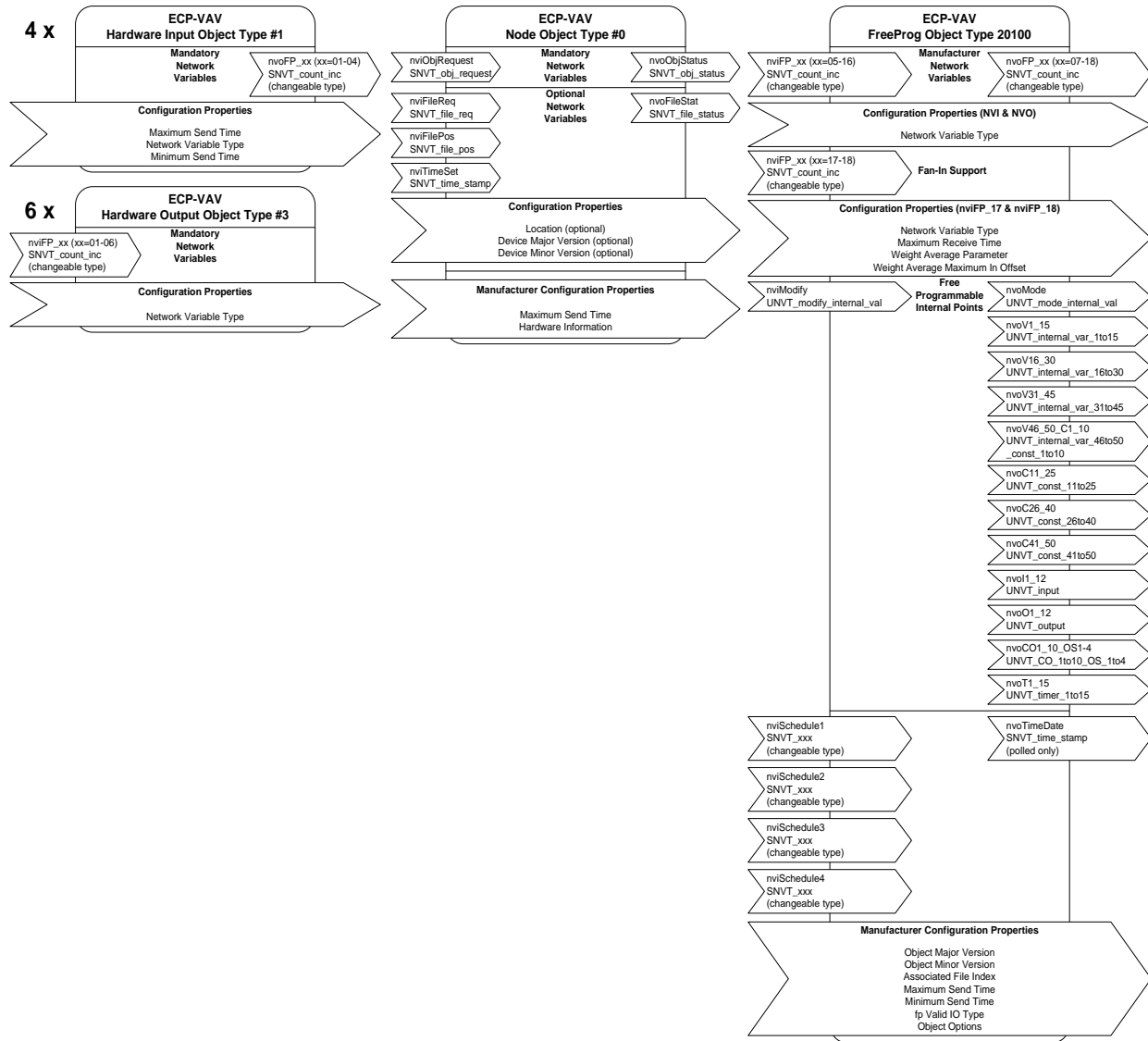
## Functional Profile of ECP-VAVS (with EC-Program)



# Functional Profile of ECP-VAV, ECP-VVT, and ECP-VAV-N (with EC-gfxProgram)



# Functional Profile of ECP-VAV, ECP-VVT, and ECP-VAV-N (with EC-Program)



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05DI-DSPVAVX-40

**ECP-VAVS and ECP-VAV Series**

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