

# VAV-4040 & VAV-4040N Control Modules



*Multi-site Retail*

## Variable Air Volume/Variable Volume and Temperature Controller

Novar's Variable Air Volume Controller (VAV-4040 or VAV-404N) can be used on single-duct or dual-duct VAV boxes, boxes that have a reheat fan, or boxes that have built-in staged or modulating heat. The VVT mode allows the damper output to reverse its action (direct or reverse-acting damper) in response to the air temperature being supplied to it by an HVAC unit. The controller is designed to be used with Novar's Futura Temperature Sensors (FTS-4 or FTS-4A with temperature setpoint adjustment) or Microset II digital sensor. A 10,000-ohm, Type 2, thermistor temperature sensor should also be used with the VAV-4040 to monitor discharge air temperature.

### Features

**The VAV-4040 and VAV-4040N cover the widest variety of VAV and VVT applications possible. Features include:**

- Integral damper actuator (VAV-4040 only)
- On-board differential pressure airflow sensor
- Air quality compensation/ventilation override using CO<sub>2</sub> or indoor air quality (IAQ) input
- Can accept CO<sub>2</sub> input directly (analog or digital sensor) or via the network
- Pressure-independent or pressure-dependent control
- Staged reheat control
- Tri-state or 2–10 VDC modulating reheat control
- Accommodations for external damper actuator (tri-state or 2–10 VDC)
- Series or parallel reheat fan control
- Integration with Novar's Hawki<sup>®</sup> Advanced Air-Handler Controller
- Stand-alone control
- One output point available for "open" programming
- High quality, removable terminal strips
- Communicates with Novar's Savvy<sup>®</sup>, Lingo<sup>®</sup>, and Envoi<sup>®</sup> executive modules

## Agency Approvals

Listed device: CUL/UL E90949  
Standards used: UL 916, Energy Management Equipment, CSA C22.2, No. 205-M1983, Signal Equipment

Recognized component: CUL/UL E134292  
Standards used: UL 873 Temperature-Indicating and Regulating Equipment, CSA C22.2, No. 24-93, Temperature-Indicating and Regulating Equipment

## Power Requirements

Voltage: 24 VAC, Class 2  
Consumption: 15 VA (not including external actuators)  
Triac Outputs: 0.5 amps max each

## Inputs and Outputs

Analog Outputs: Internal actuator (VAV-4040 only), tri-state damper outputs, 2–10 volt signal for external damper or heating actuator  
Digital Outputs: Heat 1, Heat 2, Reheat Fan  
Analog Inputs: Temperature inputs are 10,000-ohm, thermistor, Type 2. Zone temperature, supply-air temperature, setpoint reset adjustment, CO<sub>2</sub> (CO<sub>2</sub> signal: 0–10 VDC)  
Digital Inputs: Timed Override and CO<sub>2</sub> (software-defined as analog or digital)

## Operating Environment

Temperature: 32° to 122°F (0° to 50°C)  
Humidity: 0 to 90% Relative, noncondensing

## Network Communications

Method: RS-485  
Cable: Belden 8761 or equivalent (two-conductor and shield) 8000 ft. max.  
Baud Rate: 9600

## Memory Backup

Control program parameters maintained in EEPROM.

## Physical Dimensions

**VAV-4040:** Height: 6 in.  
Width: 8.25 in.  
Depth: 2 in.  
Weight: 1 lb 13 oz (Packaged Controller: 2 lb, 8 oz)

**VAV-4040N:** Height: 6 in.  
Width: 7.125 in.  
Depth: 2 in.  
Weight: 13 oz.

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