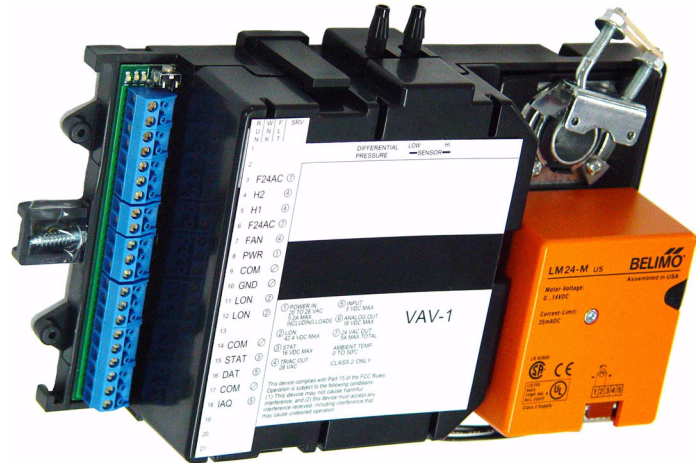


VAV-1

The VAV-1 Variable Air Volume Zone Unit is a stand-alone microprocessor-based controller for pressure independent VAV terminal units. The VAV-1 is capable of communications on a LONWORKS network for monitoring and control purposes. The VAV-1 is used to control commercial unitary heating, ventilating, and air conditioning (HVAC) equipment. It performs a wide range of VAV terminal box applications.



Overview

A digital input is provided for an indoor air quality alarm. An analog input is provided for a discharge air temperature sensor. A two-wire serial interface is provided for the thermostat. The controller incorporates digital outputs in the form of triacs for fan start/stop and two heating stages or heating valve open/close.

The controller is based on LONWORKS® networking technology. It can be networked to a higher-level control system for monitoring and control applications.

Features

- On-board air-flow sensor
- Integral damper actuator
- Optional indoor air quality (IAQ) alarm input (contact closure)
- Optional discharge air temperature (DAT) monitoring
- Two stages of electric reheat or floating setpoint hot water reheat valves
- Option to use auxiliary local heat sources for first stage of heating
- Parallel or series fan
- Pressure independent flow control
- Networking of multiple units
- Individual temperature setpoints for occupied/unoccupied heating
- Networked operation using LONWORKS Technology
- Thermostat with space temperature, setpoint adjust, occupancy override
- Integrates with Multiplex Package Unit controller (MPU-1)
- Integrates with Variable Air Volume Package Unit controller (VPU-1)
- “Stand Alone Mode” for independent operation
- Air quality compensation
- Automatic configuration with the Local Control Interface (LCI)
- Alarm/Event reporting



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Specifications

Electrical

Inputs

- Cabling: twisted shielded pair, 18 AWG recommended—500 feet max. (152 meters)
- Resolution: 10 bit

Thermostat Network

- 12 Volt nominal, internally limited to 0.04 A

Discharge Air Temperature Sensor

- Precon Type III 10K thermistor

Internal Air Quality Alarm CO₂ Sensor

- Dry Contact
- Normally open
- 5 Volts DC max

Outputs

Fan Start/Stop, Heating Stages 1 & 2 or Heating Valve Open & Close

- 20 to 28 Volts AC
- 0.7 Amp max each

FTT-10A Network

- Speed: 78 KBPS
- Cabling: Maximum node-to-node distance: 1312 feet (400 meters)
- Maximum total distance: 1640 feet (500 meters)
- 42.4 Volts DC max

For detailed specifications, refer to the FTT-10A Free-Topology Transceiver User's Guide published by Echelon Corporation. For information on ordering Connect Air items, contact Connect Air International; 4240 B Street; Auburn, WA 98001 <www.connect-air.com>.

Table 1: Network Wire Specifications

Cable Type	Pairs	Details	Connect Air Catalog No.
Level 4 22AWG (0.65mm)	1	Unshielded, Plenum, U.L. Type CMP	W221P-2001
Level 4 22AWG (0.65mm)	1	Unshielded, Non-Plenum, U.L. Type CM	W221P-1002

Power

Power Requirements

- 24 VAC nominal (requires an external supply)

Power Consumption

- With no external loads: 15 VA

Mechanical

Housing

- Dimensions: 5.25" (13.34 cm) high, 8.87" (22.53 cm) wide, 2.75" (6.99 cm) deep
- ABS Polycarbonate

Weight

- Controller weight: 29 ounces (0.82 kilograms)
- Shipping weight: 40 ounces (1.1 kilograms)

Electronics

- Processor: 3150 Neuron 10 MHz
- Flash: 48 Kilobytes
- SRAM: 8 Kilobytes
- Termination: 0.197" (5.0 mm) Pluggable Terminal Blocks, 14-22 AWG

Actuator

- Angle of rotation: 95° (adjustable)
- Torque: 35 in-lb [4 Nm] nominal

Environmental

- Temperature: 32 °F to 122 °F (0 °C to 50 °C)
- Humidity: 0 to 90%, non-condensing

Agency Listings

- UL916
- UL873

Agency Compliances

- FCC Part 15 Class A