

PRE-CONFIGURED VAV TERMINAL UNIT CONTROLLER INTEGRATED DAMPER MOTOR

OVERVIEW

The HVAC controls market requires a very flexible, cost effective, VAV terminal unit DDC controller with integrated damper motor. The Circon VAV-332-IMV, with many advanced features, increases comfort levels to occupants while optimizing energy usage. The VAV-332-IMV comes with an integral brushless damper motor and differential pressure sensor. The VAV-332-IMV's pressure sensor is one of the most sensitive, reliable and accurate sensors available.

APPLICATIONS

The VAV-332-IMV can be used for any single duct, pressure independent or pressure dependent VAV terminal unit control application. It accommodates series or parallel fan powered terminal units or terminal units without fans.

The VAV-332-IMV's pre-configured heating control supports three stages of electric reheat, and analog modulating or floating valve control for hot water heat. Optional secondary perimeter heating control increases application flexibility.

The VAV-332-IMV allows implementation of ASHRAE standard 62.1-specified Ventilation Rate and IAQ procedures, in combination with a supervisory controller.

A time-of-day schedule allows the VAV-332-IMV to optimize energy usage by adapting its control sequence to occupied, unoccupied or standby setpoints.

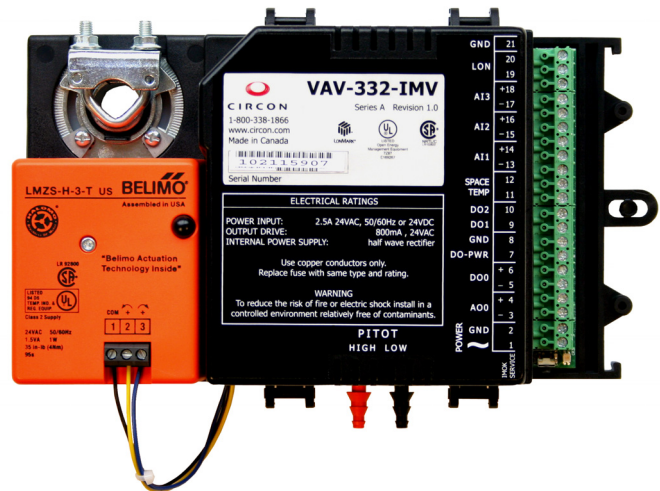
The morning warm-up/pre-cool feature allows the zone to be conditioned for comfort prior to occupancy while optimizing energy usage. Using demand limiting, a supervisory controller can instruct the VAV-332-IMV to decrease its energy usage with minimal impact on comfort.

A versatile general-purpose side loop provides three styles of independent control for a wide range of equipment including unit heater, baseboard heater, exhaust fan, lighting and more. The side loop together with otherwise unused I/O saves the cost of additional controllers for simple applications.

The VAV-332-IMV's inputs, outputs, control sequences and alarming, trending and scheduling are easily configured using free Windows®-based plug-in software, which is compatible with Echelon® Corporation's LNS®.

ORDERING INFORMATION

part number 10-0438



ADVANTAGES

- LonMark® certified for seamless integration into interoperable LonWorks® networks
- Nine pre-configured VAV terminal unit control sequences allows use in any VAV application
- Easily mounts directly on VAV terminal unit damper shaft
- One resistive input for space temperature with/without bypass switch and three universal inputs for supply air temperature, set point adjust, auxiliary temperature, occupancy detection, CO2 or other sensors
- Three digital outputs and one analog output for fan start/stop, floating valve or multi-stage electric reheat control and perimeter reheat control
- Demand controlled ventilation feature allows occupant-based ventilation rate control
- A side loop provides independent control for additional simple HVAC equipment
- On board soft clock, scheduling and trending decrease costs and increase flexibility
- Works with single speed fan motors or energy-efficient variable speed fan motors with ECM technology
- Transmits alarms for local or remote annunciation



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SPECIFICATIONS

I/O CAPABILITY

1 space temp input	10 KΩ thermistor input, Precon curve: type II, model 24 or type III, model 3
3 universal inputs	digital (dry contact), resistive (10 KΩ thermistor) or voltage (0–10 VDC) input
1 pressure sensor	0.013" H ₂ O – 1.75" H ₂ O (3.2 Pa – 438 Pa)
3 digital outputs	isolated triac: 800 mA max. – 30 mA min. at 24 VAC, short-circuit protected, auto-reset
1 analog output	0–10 VDC at 100 mA, short-circuit protected, auto-reset

COMMUNICATIONS

Transceiver	Echelon Free Topology Transceiver (FTT-10A) 78 kbps
Wire type	AWG 22 to AWG 16 stranded (use only twisted pair)
Neuron	3150, 10 MHz

POWER SUPPLY

Controller and motor	24 VAC 50–60 Hz at 12 VA
External loads	1.2 A (absolute maximum) available to power external loads
Fuse	2.5 A slow-blow (Bussman GMD-2.5A, Littlefuse 23902.5A)

MECHANICAL

Operating temperature	32°F to 122°F (0°C to 50°C)
Relative humidity	5% to 95% RH (non-condensing)
Weight	1 lb. 11 oz. (780 grams)
Enclosure dimensions	9" X 5.28" X 2.125" (229 mm x 134 mm x 54 mm)
Enclosure material	Polylac PA-766+, FR/ABS
Material approval	UL94-5V
Wire type	AWG 22 to AWG 16 stranded
Mounting	directly on shaft with one screw

DAMPER MOTOR

Model	Belimo LMZS-H-3-T with stall-protected brushless DC motor
Torque	35 in-lb (4.0 N m)
Power supply	supplied from VAV-332-IMV
Running time	90 seconds
Angle of rotation	95 degrees adjustable
Fits shaft diameter	5/15" to 23/32" (8.5 mm to 18.2 mm)
Manual override	push button clutch

AGENCY LISTINGS AND REGULATORY COMPLIANCE

Class II device (when powered by class II supply)
 CSA 22.2 #205-M1983, #950-M89
 UL 916 certification for Energy Management Equipment
 Part 15, Class A of the FCC rules for Radio Frequency Devices
 EMC Directive 89/336/EEC
 LonMark 3.4 certified, LonMark functional profile: 8502 SCC-VAV

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PRE-CONFIGURED VAV TERMINAL UNIT CONTROLLER

EXTERNAL DAMPER MOTOR

OVERVIEW

The HVAC controls market requires a very flexible, cost effective, VAV terminal unit DDC controller that works with an external damper motor. The Circon VAV-332-XMV, with many advanced features, increases comfort levels to occupants while optimizing energy usage. The VAV-332-XMV comes with an integral differential pressure sensor and damper control interface. The VAV-332-XMV's pressure sensor is one of the most sensitive, reliable and accurate sensors available.

APPLICATIONS

The VAV-332-XMV can be used for any single duct, pressure independent or pressure dependent VAV terminal unit control application. It accommodates series or parallel fan powered terminal units or terminal units without fans.

The VAV-332-XMV's pre-configured heating control supports three stages of electric reheat, and analog modulating or floating valve control for hot water heat. Optional secondary perimeter heating control increases application flexibility.

The VAV-332-XMV allows implementation of ASHRAE standard 62.1-specified Ventilation Rate and IAQ procedures, in combination with a supervisory controller.

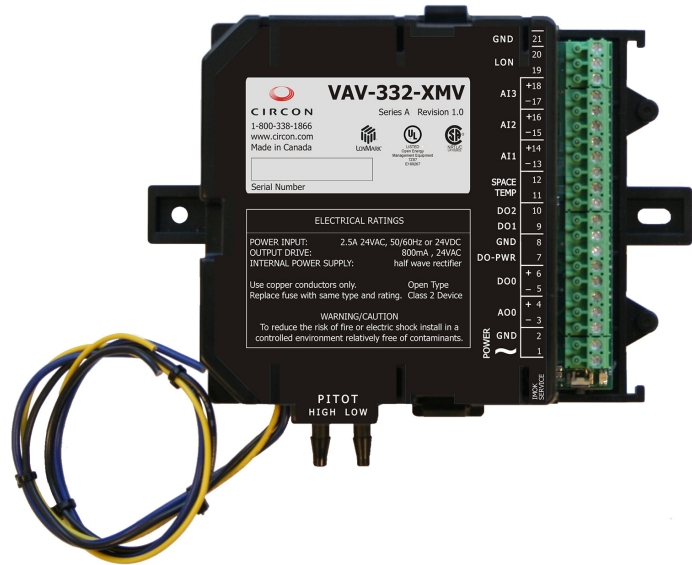
A time-of-day schedule allows the VAV-332-XMV to optimize energy usage by adapting its control sequence to occupied, unoccupied or standby setpoints.

The morning warm-up/pre-cool feature allows the zone to be conditioned for comfort prior to occupancy while optimizing energy usage. Using demand limiting, a supervisory controller can instruct the VAV-332-XMV to decrease its energy usage with minimal impact on comfort.

A versatile general-purpose side loop provides three styles of independent control for a wide range of equipment including unit heater, baseboard heater, exhaust fan, lighting and more. The side loop together with otherwise unused I/O saves the cost of additional controllers for simple applications. The VAV-332-XMV's inputs, outputs, control sequences and alarming, trending and scheduling are easily configured using free Windows®-based plug-in software, which is compatible with Echelon® Corporation's LNS®.

ORDERING INFORMATION

part number 10-0440



ADVANTAGES

- LonMark® certified for seamless integration into interoperable LonWorks® networks
- Nine pre-configured VAV terminal unit control sequences allows use in any VAV application
- Easily mounts directly on VAV terminal unit
- One resistive input for space temperature with/without bypass switch and three universal inputs for supply air temperature, set point adjust, auxiliary temperature, occupancy detection, CO2 or other sensors
- Three digital outputs and one analog output for fan start/stop, floating valve or multi-stage electric reheat control and perimeter reheat control
- Demand controlled ventilation feature allows occupant-based ventilation rate control
- A side loop provides independent control for additional simple HVAC equipment
- On board soft clock, scheduling and trending decrease costs and increase flexibility
- Transmits alarms for local or remote annunciation
- Floating outputs provide clockwise/counterclockwise control for external damper motor



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SPECIFICATIONS

I/O CAPABILITY

1 space temp input	10 KΩ thermistor input, Precon curve: type II, model 24 or type III, model 3
3 universal inputs	digital (dry contact), resistive (10 KΩ thermistor) or voltage (0-10 VDC) input
1 pressure sensor	0.013" H ₂ O - 1.75" H ₂ O (3.2 Pa - 438 Pa)
3 digital outputs	isolated triac: 800 mA max. - 30 mA min. at 24 VAC, short-circuit protected, auto-reset
1 analog output	0-10 VDC at 100 mA, short-circuit protected, auto-reset

COMMUNICATIONS

Transceiver	Echelon Free Topology Transceiver (FTT-10A) 78 kbps
Wire type	AWG 22 to AWG 16 stranded (use only twisted pair)
Neuron	3150, 10 MHz

POWER SUPPLY

Controller	24 VAC 50-60 Hz at 12 VA
External loads	1.2 A (absolute maximum) available to power external loads
Fuse	2.5 A slow-blow: Bussman GMD-2.5A, Littlefuse 23902.5A

MECHANICAL

Operating temperature	32°F to 122°F (0°C to 50°C)
Relative humidity	5% to 95% RH (non-condensing)
Weight	12 oz. (320 grams)
Enclosure dimensions	6.75" X 4.75" X 2.0" (172 mm x 120 mm x 51 mm)
Enclosure material	PVC, Inflammability class V0
Material approval	UL94-5V
Wire type	AWG 22 to AWG 16 stranded
Mounting	two sheet metal screws

DAMPER MOTOR INTERFACE

2 digital outputs	drive clockwise or drive counterclockwise to open damper. isolated triac - 0.8 A max / 30mA min at 24 VAC, short-circuit protected, auto-reset
Power supply	24 VAC 50 - 60 Hz power required, from controller or external supply
Stroke time	software-configurable

AGENCY LISTINGS AND REGULATORY COMPLIANCE

Class II device (when powered by class II supply)
 CSA 22.2 #205-M1983, #950-M89
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