Code No. LIT-1900458
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LN-VAVCF-2

LN Series LN-VAVCF Controller

Description

The LN Series LN-VAVCF controller uses the latest technology to provide more flexibility and reliability. The LN-VAVCF controllers can be programmed very easily using any LNS® based program, such as LN Builder. The LN-VAVCF controller features a drift-free differential pressure sensor that resists loss of accuracy over time due to dust particle accumulation.

The LN-VAVCF controller uses the LonTalk® communication protocol and is LONMARK® certified with the Sensor profile (#1) for input object and the Actuator profile (#3) for the output objects.

Features

- robust communications protocol - complies with LONWORKS® technology for peer-to-peer communication between controllers without the necessity of intermediary agents
- free programmable object - allows you to view all internal points using 10 UNVT and 15 values of each object. The LN-VAVCF controller offers many programming tools like Proportional plus Integral plus Derivative (PID), timers, and optimum start.
- hardware - allows you to use any commercially available thermistor type (100 ohms to 100k ohms) and setpoint potentiometer type. Features an extremely accurate onboard airflow sensor for pressure independent single duct Variable Air Volume (VAV) applications. Can read differential pressure as small as 0.04 milli-inches.
- software - features Network Variable Inputs and Outputs (NVI/NVOs) with changeable types and lengths. Supports fan-in binding for zoning applications. All objects (programming, schedule, real time clock) are configurable through their own LNS® plug-in or with LN Graphical Programming Interface (GPI) software.
- wireless functionality - features an optional EnOcean® wireless receiver that you can use with a variety of wireless sensors and switches. The wireless receiver supports up to 14 wireless inputs, which allow you to create wire-free installations.

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Repair Information

If the LN-VAVCF controller fails to operate within its specifications, replace the unit. For a replacement, contact the nearest Johnson Controls® representative.

Selection Chart

Code Number	Description
LN-VAVCF-2	Programmable VAV controller, actuator with feedback, flow sensor, 10 I/O (4 U/Is, 4 triac Digital Inputs, 2 UOs), wireless option, and LN GPI software as well as an LNS Plug-in.

Technical Specifications

LN-VAVCF (Part 1 of 2)

Product Code	LN-VAVCF-2
Power Requirements	Voltage: 24 VAC/DC; ±15%, 50/60 Hz, Class 2 Protection: 3 A user-replaceable fuse for triac when using the internal power supply Consumption: 18 VA; triac outputs (2 valves at 4 VA) and 2 outputs with 20 mA load at 12 VDC Maximum Consumption: 70 VA if internal power supply is used
Ambient Storage Conditions	Ambient Operating Temperature: 0 to 50ºC (32 to 122ºF) Ambient Storage Temperature: -20 to 50ºC (-4 to 122ºF) Ambient Storage Conditions: 0 to 90% noncondensing
General	Processor: Neuron® 3150™, 8 bits, 10 MHz Memory: Non-volatile Flash 128k (storage) Non-volatile Flash 64k (APB application) Media Channel: TP/FT-10, 78 Kbps Communication: LonTalk® protocol LONMark Interoperability: Version 3.4 Device Class: Multi Input/Output (I/O) Module LONMARK Functional Profile: Input Objects: Open-Loop Sensor #1, Output Objects: Open-Loop Sensor #3
Enclosure (Housing)	Material: FR/ABS Resin Dimensions (with screws): 4.8 x 8.4 x 2.5 in. (12.7 x 214.3 x 63.0 mm) Shipping Weight: 2.30 lbs (1.05 kg)

LN Series LN-VAVCF Controller (Continued)

LN-VAVCF (Part 2 of 2)

Inputs	Universal, software configurable Input Types: Voltage: 0-10 VDC Digital: Dry Contact, Analog current: 4-20 mA with 249 ohms external resistor Resistor Support: Thermistor: 10 ohms Type, 2, 3 (1k ohms at 25°C [77°F]) Range: -40 to 150°C (-40 to 302°F) Platinum: Pt1000 (1k ohms at 0°C [32°F]) Range: -40 to 150°C (-40 to 302°F) Pt100 (1k ohms at 0°C [32°F]) Range: -40 to 150°C (-40 to 302°F) Nickel: RTD Ni1000 (1k ohms at 0°C [32°F]) Range: -40 to 150°C (-40 to 302°F) Potentiometer: translation table configurable on several points Differential Pressure: Range 0 to 250 Pa (0 to 1 in. H_20) Resolution: 0.000162 mill-in. H_20 Accuracy: ±3% full scale Input Resolution: 16-bit analog/digital converter
Outputs	Digital: 24 VAC Triac, digital (on/off), PWM, or floating[1], software configurable 0.5 A continuous PWM control: adjustable period from 2 seconds to 15 minutes Floating control: requires two consecutive outputs[1] Minimum pulse on/off: 500 milliseconds Adjustable drive time period External or Internal power supply (jumper selectable) Digital LED occupancy output: 0-10 VDC dedicated output for occupancy sensor LED Maximum 20 mA Universal: 0-10 VDC linear, digital 0-12 VDC (on/off), floating or PWM PWM control: adjustable period from 2 seconds to 15 minutes Floating control: requires two consecutive outputs[1] Minimum pulse on/off: 500 milliseconds Adjustable drive time period 20 mA max at 12 VDC, Minimum load 600 ohms Output Resolution: 10-bits digital/analog converter
Damper Actuator	Torque: 35 in·lb, 4 N·m Degree of Rotation: 95º adjustable Fits Shaft Diameter: 5/16 to 3/4 in. (8.5 to 18.2 mm)
Wireless Receiver	Communication: EnOcean wireless standard[2] Wireless Inputs: 14[3] Wireless Receivers: Wireless Receiver 315, Wireless Receiver 868 Cable: telephone cord, connector: 4P4C modular jack, length: 6.5ft (2 m)
Electromagnetic Compatibility	CE Emission: EN61000-6-3: 2007; generic standards for residential, commerical, and light-industrial environments CE Immunity: EN61000-6-1: 2007; generic standards for residential, commerical, and light-industrial environments
Compliance	UL Listed (US and CDN): UL916 Energy Management Equipment Material: UL94-5VA

1. Floating only available when controller is programmed with LN GPI software.
2. Available when an optional external Wireless Receiver is connected to the controller. Refer to the LN Wireless Location Guide for a list of supported EnOcean wireless modules.
3. Some wireless sensors may use more than one input from the controller.