N2 VMA1832 VAV Controller Catalog Page

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Refer to the QuickLIT website for the most up-to-date version of this document.

The Metasys® System N2 Field Equipment Controller family comprises a group of versatile controllers and accessories designed to monitor and operate a wide variety of commercial HVAC equipment and can be networked together using the N2 Open Communications protocol. This family of controllers includes the VMA1832 controller, which can be integrated to any supervisory controller capable of managing N2 Open networks and devices, such as the Network Communication Module (NCM) and Network Automation Engine (NAE).

The VMA1832 controller features an advanced design that provides optimum performance and easy access to power, network, and field terminations. These controllers come with 32-bit microprocessors that meet and exceed ever demanding industry standards.

Note: A software download that allows VMA1832 controllers to communicate as BACnet® Master-Slave/Token-Passing (MS/TP) devices will be available at a future date. This functionality provides a differentiated and cost-effective platform upgrade path for existing customers who are looking for a gradual upgrade strategy and should be considered during installation of the controller.

Our wide variety of network sensor models provides options for measuring and displaying zone temperature, occupancy detection, duct temperature, zone humidity, carbon dioxide (CO_2) level, setpoint adjustments, and discharge air temperatures. The VMA1832 controller's embedded capabilities, in addition to its modular accessories, make it well-suited as a replacement for legacy VMA14xx Series Controllers.

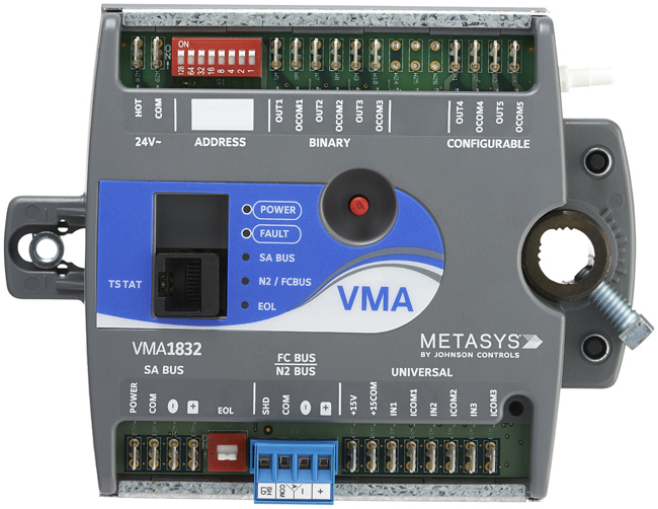
Refer to the *N2 Field Equipment Controllers and Related Products Product Bulletin (LIT-12011808)* for important product application information.

Features

- N2 Open Communications Protocol
- Standard Software Platform
- Auto Tuned Control Loops
- Universal Inputs and Binary and Configurable Outputs
- Optional Local Controller Display/Keypad (DIS1710)

If the VMA1832 fails to operate within its specifications, replace the unit. For a replacement VMA, contact the nearest Johnson Controls® representative.

Figure 1: VMA1832 Controller



Selection Charts

Table 1: VMA1832 Features and Point Type Counts per Model

Point Types	Signals Accepted	VMA1832
Modular Jack		8-pin SA bus supports analog non-communicating sensor.
Universal Input (UI)	Analog Input, Voltage Mode, 0–10 VDC Analog Input, Resistive Mode, 0–2k ohm, RTD (1k NI [Johnson Controls], 1k PT, A998 SI), NTC (10k Type L, 2.252k Type 2) Binary Input, Dry Contact Maintained Mode	3
Binary Output (BO)	24 VAC Triac	3
Configurable Output (CO)	Analog Output, Voltage Mode, 0–10 VDC Binary Output Mode, 24 VAC Triac	2
Integrated Actuator	Internal	1
Integrated Flow Sensor	Internal	1

Table 1: VMA1832 Features and Point Type Counts per Model

Point Types	Signals Accepted	VMA1832
Zone Sensor Input	On SA Bus[1]	Up to 4 NS Series Network Zone sensors
		Up to 9 WRZ sensors when using the ZFR1811 wireless router configuration and up to 5 WRZ sensors when using the one-to-one WRZ-78xx wireless configuration.

1 A total of 10 SA bus addresses maximum can be used in a single VMA controller.

Table 2: Ordering Information

Product Code Number	Description
MS-VMA1832-0	Replacement Integrated VAV Controller/Actuator/Pressure Sensor, N2/FC Bus, and SA Bus (32-bit Processor)

Accessories (Order Separately)

Table 3: VMA1832 Controller Accessories (Order Separately)

Product Code Number	Description
Y64T15-0	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 92 VA, Foot Mount, 30 in. Primary Leads and 30 in. Secondary Leads, Class 2
Y65A13-0	Transformer, 120 VAC Primary to 24 VAC Secondary, 40 VA, Foot Mount (Y65AS), 8 in. Primary Leads and 30 in. Secondary Leads, Class 2
Y65T42-0	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 40 VA, Hub Mount (Y65SP+), 8 in. Primary Leads and Secondary Screw Terminals, Class 2
Y65T31-0	Transformer, 120/208/240 VAC Primary to 24 VAC Secondary, 40 VA, Foot Mount (Y65AR+), 8 in. Primary Leads and Secondary Screw Terminals, Class 2
AS-CBLVMA-1	Cable Adapter, 8-pin Female Socket to 6-Pin Male Jack (Bulk Pack of 10)
AP-TBK4FC-0	Replacement MS/TP FC Bus Terminal, 4-Position Connector, Blue, Bulk Pack (10 pack)
AP-TBK1002-0	Removable 2-Position Screw Terminal Kit (100 Pieces)
AP-TBK1003-0	Removable 3-Position Screw Terminal Kit (100 Pieces)
AS-CBLVMA-2	Cable Adapter, 8-pin Female Socket to 8-pin Male Jack with 6-Pin Female Socket for Wireless Commissioning Converter (Bulk Pack of 10)
MS-BTCVT-1	Wireless Commissioning Converter with Bluetooth® Technology
MS-DIS1710-0	Local Controller Display/Keypad
NS-WALLPLATE-0	Network Sensor Wall Plate (80 mm by 80 mm [3.15 in. by 3.15 in.] square), used with an 80 mm by 80 mm (3.15 in. by 3.15 in.) network sensor and must be mounted to a 0.6 m by 1.2 m (2 ft by 4 ft) wall box
TL-BRTRP-0	Portable BACnet IP to MS/TP Router
NS Series Network Sensors	Refer to the *NS Series Network Sensors Product Bulletin (LIT-12011574)* for specific sensor model descriptions.

Technical Specifications

Table 4: VMA1832 Controllers

Product Code Numbers	**MS-VMA1832-0:** Cooling with Reheat and Fan Control
Supply Voltage	24 VAC (nominal, 20 VAC minimum/30 VAC maximum), 50/60 Hz, Power Supply Class 2 (North America), Safety Extra-Low Voltage (SELV) (Europe)
Power Consumption	10 VA typical, 14 VA maximum **Note:** The VA ratings do not include any power supplied to the peripheral devices connected to Binary Outputs (BOs) or Configurable Outputs (COs), which can consume up to 12 VA for each BO or CO for a possible total consumption of an additional 60 VA (maximum).
Ambient Conditions	**Operating:** 0 to 50°C (32 to 122°F) **Storage:** -40 to 70°C (-40 to 158°F)
Terminations	Inputs/Outputs, SA bus, and Supply Power: 6.3 mm (1/4 in.) Spade Lugs N2/FC Bus Pluggable Screw Terminal Block TSTAT Modular Port: RJ-45 8-Pin Modular Jack
Controller Addressing	DIP switch set **N2 Open Protocol:** Valid field controller device addresses 1–253 **BACnet MS/TP:** Valid field controller device addresses 4–127 (Device addresses 0–3 and 128–255 are reserved and not valid field controller addresses.)

Table 4: VMA1832 Controllers

Communications Bus	**N2 Open Protocol:** N2/FC Bus: 1.5 mm (18 AWG) standard 3-wire, twisted, shielded cable recommended between the supervisory controller and field controllers **BACnet MS/TP Protocol:** SA Bus: 0.6 mm (22 AWG) stranded, 4-wire (2-twisted pairs) shielded cable recommended from the VMA controller for network sensors and other sensor/actuator devices; includes a terminal to source 15 VDC supply power from VMA to SA Bus devices[1]
Input and Output Capabilities	3 - Universal Inputs: Defined as 0–10 VDC, 4–20 mA, 0–600k ohm, or Binary Dry Contact 3 - Binary Outputs: Defined as 24 VAC Triac (internal power source) 2 - Configurable Outputs: Defined as 0–10 VDC or 24 VAC Triac BO
Analog Input/Analog Output Accuracy	**Analog Input:**15-bit resolution on UIs **Analog Output:** 0–10 VDC ± 200 mV
Differential Pressure Sensor	Range: -1.5 inches to 1.5 inches H_20 **Performance Characteristics:** Total Error Band: ±1.3% Full Span Maximum Accuracy: ±0.25% Full Scale Best Fit
Actuator Rating	4 N·m (35 lb·in) minimum shaft length = 44 mm (1-3/4 in.)
Mounting	Mounts to damper shaft using single set screw and to duct with single mounting screw
Dimensions (Height x Width x Depth)	165 x 125 x 73 mm (6.5 x 4.92 x 2.9 in.) **Center of Output Hub to Center of Captive Spacer:** 135 mm (5-5/16 in.)
Weight	0.65 kg (1.45 lb)
Compliance CE	**United States:** UL Listed, File E107041, CCN PAZX, UL 916, Energy Management Equipment; Suitable for use in other environmental air space (plenums) in accordance with Section 300.22(C) of the National Electric Code. FCC Compliant to CFR47, Part 15, Subpart B, Class A.
	Canada: UL Listed, File E107041, CCN PAZX7, CAN/CSA C22.2 No. 205, Signal Equipment; Industry Canada Compliant, ICES-003
	Europe: CE Mark – Johnson Controls, Inc., declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC.
	Australia and New Zealand: C-Tick Mark, Australia/NZ Emissions Compliant.

1 For more information, refer to the *N2 Communications Bus Technical Bulletin (LIT-636018)*.

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