PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (PICS)

NB-VAV

Vendor Name: American Auto-Matrix
Product Name: NB-VAV Family
Product Model Number: NB-VAVta, NB-VAVtf, NB-VAVra, NB-VAVrf, NB-VAVr, NB-VAVta-IAQ, NB-VAVtf-IAQ
Firmware Revision: 6.03
BACnet Protocol Revision: 4

Product Description:

NB-VAV controllers are terminal box controllers, designed to function in numerous scenarios that require variable air volume (VAV) control, constant air volume (CAV) control, as well as indoor air quality control. NB-VAV is available with options for relay outputs, triac outputs, and an integrated actuator with or without feedback.

BACNET STANDARDIZED DEVICE PROFILE:
☐ BACnet Operator Workstation (B-OWS)
☐ BACnet Building Controller (B-BC)
☐ BACnet Advanced Application Controller (B-AAC)
☑ BACnet Application Specific Controller (B-ASC)
☐ BACnet Smart Sensor (B-SS)
☐ BACnet Smart Actuator (B-SA)
☐ BACnet Other (B-OTHER)

BACNET INTEROPERABILITY BUILDING BLOCKS SUPPORTED:

DS-RP-B	DM-TS-A	DM-DOB-B	DM-RD-B
DS-WP-B	DM-TS-B	DM-DCC-B	DM-PT-A
DS-RPM-B	SCHED-WS-I-B	DM-DDB-B	DM-PT-B

SEGMENTATION CAPABILITY:
Able to transmit segmented messages ☐ yes ☑ no   Window Size:

Able to receive segmented messages ☐ yes ☑ no   Window Size:

STANDARD OBJECT TYPES SUPPORTED

Dynamically Creatable Objects
None

Dynamically Deletable Objects
None

Properties
Bold indicates writable properties
Italics indicates optional properties

Device	Analog Input	Analog Output
object-identifier	object-identifier	object-identifier
object-name	object-name	object-name
object-type	object-type	object-type
system-status	present-value	**present-value**
vendor-name	status-flags	status-flags
vendor-id	event-state	event-state
model-name	**out-of-service**	**out-of-service**
firmware-revision	*units*	*units*
application-software-revision	*min-pres-value*	*min-pres-value*
protocol-version	*max-pres-value*	*max-pres-value*
protocol-revision	*reliability*	priority-array
protocol-services-supported		**relinquish-default**
protocol-object-types-supported		
object-list		
max-apdu-length		
segmentation-supported		
local-time		
local-date		
apdu-timeout		
number-of-apdu-retries		
max-master		
max-info-frames		
time-synchronization-recipients		
device-address-binding		
database-revision		
profile-name		

Analog Value	Binary Output	Schedule
object-identifier	object-identifier	object-identifier
object-name	object-name	object-name
object-type	object-type	object-type
present-value	**present-value**	present-value
status-flags	status-flags	effective-period
event-state	event-state	**weekly-schedule**
out-of-service	**out-of-service**	**schedule-default**
units	**polarity**	list-of-object-property-references
	priority-array	**priority-for-writing**
	relinquish-default	status-flags
		reliability
		out-of-service

NON-STANDARD PROPERTY DECLARATION

This product contains non-standard properties in the following standard objects listed below.

ANALOG INPUT, INSTANCE 0

Identifier	Meaning	Datatype
16754	SSB Mode	Unsigned
16757	Application Profile	Unsigned
16770	Calculated Cooling Setpoint	Real
16775	Calculated Heating Setpoint	Real
16796	Thermostat Display Format	Unsigned
16798	Demand Load	Unsigned
16799	Demand Mode	Unsigned
16803	Thermostat Display Mode	Unsigned
16805	Thermostat Display Format	Unsigned
16808	Extended Occupancy Time	Unsigned
16816	Extended Occupancy Time Remaining	Unsigned
16837	STAT0 GID	Unsigned
16838	STAT1 GID	Unsigned
16839	STAT2 GID	Unsigned
16840	STAT3 GID	Unsigned
16919	Temp Offset	Real
16940	Balance PIN	Unsigned
16945	Primary STAT	Unsigned
16947	Installer PIN	Unsigned
16951	Service PIN	Unsigned
16952	User PIN	Unsigned
17091	Reversing Delay	Real
16969	Reading Mode	Unsigned
16983	Setpoint Display	Unsigned
16984	Override Enable/Disable	Unsigned
16997	Setup/Setback	Real
17002	STAT0 Reading	Real
17003	STAT1 Reading	Real
17004	STAT2 Reading	Real

ANALOG INPUT, INSTANCE 0

Identifier	Meaning	Datatype
17005	STAT3 Reading	Real
17011	Offset Increment	Real
17013	User Adjust Position	Integer
17014	User Adjust Remaining	Unsigned
17015	Setpoint Offset	Real
17016	User Adjust Duration	Unsigned
17087	Zone Midpoint	Real
16973	Reset Accumulations	Boolean
17007	Total Energy	Unsigned
17008	Total Used	Unsigned

ANALOG INPUT, INSTANCES 1 THROUGH 3

Identifier	Meaning	Datatype
16804	Datatype	Unsigned
16878	Input Filtering	Unsigned
16881	Input Optimization	Boolean
16919	Input Offset	Real
16996	Sensor Type	Unsigned
16997	Setup/Setback	Real

ANALOG INPUT, INSTANCE 6

Identifier	Meaning	Datatype
16741	Auto/Manual Track Select	Unsigned
16748	Actuator Type	Unsigned
16768	Average Flow	Unsigned
16769	Calibrate Sensor	Boolean
16771	Target Flow	Unsigned
16777	Duct Scaling Factor	Unsigned
16793	Damper Control Mode	Unsigned

ANALOG INPUT, INSTANCE 6

Identifier	Meaning	Datatype
16794	Damper Direction	Boolean
16799	Damper Mod	Unsigned
16801	Damper Position	Unsigned
16803	Damper Status	Unsigned
16810	Flow at Full Open	Unsigned
16815	Target Damper Position	Unsigned
16827	Flow Hysteresis	Unsigned
16883	CFM Calibration Point	Unsigned
16884	K Factor	Unsigned
16919	Flow Offset	Integer
16975	Pulse Count	Unsigned
16997	Setup/Setback	Real

ANALOG INPUT, INSTANCE 8

Identifier	Meaning	Datatype
16794	Duct Delta Temperature	Real
16876	Input Select	Unsigned
16768	Temp Adjustment	Real
16769	Supply Mode	Unsigned

ANALOG OUTPUT, INSTANCE 1

Identifier	Meaning	Datatype
16804	Datatype	Unsigned
16863	Max Scale Voltage	Real
16894	Min Scale Voltage	Real

BINARY OUTPUT, INSTANCE 1

Identifier	Meaning	Datatype
16825	Shutoff Delay	Unsigned
16829	Night Setback Fan Mode	Unsigned
16830	Occupied Fan Mode	Unsigned
16835	Unoccupied Fan Mode	Unsigned
16966	Run Hours	Real
16968	Run Limit	Real

BINARY OUTPUT, INSTANCE 2 THROUGH 5

Identifier	Meaning	Datatype
16966	Run Hours	Real
16968	Run Limit	Real

SCHEDULE, INSTANCE 1

Identifier	Meaning	Datatype
16853	Host Enable	Boolean
16860	Host Schedule	Unsigned
16882	Inactive Schedule State	Unsigned
17081	Receive Schedule	Boolean

DEVICE OBJECT

Identifier	Meaning	Datatype
16758	Backup Control	Boolean
16770	Clock Fail Count	Unsigned
16779	Manufacturer Code	Unsigned
16781	Baud Rate	Unsigned
16874	Controller Type	Unsigned
16795	Default Enable	Unsigned
16813	English/Metric Mode	Boolean

DEVICE OBJECT

Identifier	Meaning	Datatype
16820	Interlock 1 Status	Boolean
16821	Interlock 2 Status	Boolean
16822	Fan Interlock	Boolean
16834	Firmware Type	Unsigned
16868	Interlock 1 Selection	Unsigned
16869	Interlock 2 Selection	Unsigned
16870	Fan Interlock Selection	Boolean
16876	Default Count	Unsigned
16877	MAC Address	Unsigned
16882	Interlock Status	Bitstring
16902	Master/Slave Toggle	Boolean
16917	Opcode Count	Unsigned
16925	Kernel Version	Real
16942	Power on Delay	Unsigned
16949	Actual Schedule Status	Unsigned / Enum - based on Schedule configuration
16951	Power-up Stat	Unsigned
16963	Reset Count	Unsigned
16967	Fan Interlock Reset	Boolean
16972	Reset Controller	Boolean
16991	Serial Number	Unsigned
16994	Software Time Stamp	Unsigned
17043	Software Version	Real
17050	Watchdog Cop	Unsigned
17084	Zone Number	Unsigned
17085	Count of High Pulses	Unsigned

Data Link Layer Options:

☐ BACnet IP, (Annex J)
☐ BACnet IP, (Annex J), Foreign Device
☐ ISO 8802-3, Ethernet (Clause 7)
☐ ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
☐ ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s):
☒ MS/TP master (Clause 9), baud rate(s): 9.6k, 19.2k, 38.4k, 76.8k
☐ MS/TP slave (Clause 9), baud rate(s):
☐ Point-To-Point, EIA 232 (Clause 10), baud rate(s):
☐ Point-To-Point, modem, (Clause 10), baud rate(s):
☐ LonTalk, (Clause 11), medium:
☐ Other:

Device Address Binding:

Is static device binding supported? ☒ Yes☐ No

(This is currently necessary for two-way communication with MS/TP slaves and certain other devices.)

Networking Options:

☐ Router, Clause 6 - IP, MS/TP, Ethernet
☐ Annex H, BACnet Tunneling Router over IP
☐ BACnet/IP Broadcast Management Device (BBMD)
  Does the BBMD support registrations by Foreign Devices? ☐ Yes   ☐ No

Character Sets Supported

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

☒ ANSI X3.4   ☐ ISO 10646 (UCS-4)

☐ IBM™/Microsoft™ DBCS   ☐ ISO 10646 (UCS-2)

☐ JIS C 6226   ☐ ISO 8859-1

Gateway

This product does not support gateway functionality for any types of non-BACnet equipment/network(s).

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