



## MANUAL – LIST OF BACNET OBJECTS

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# Prodigy

Prodigy® Digital VAV Diffusers

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# PRODIGY® - DIGITAL VAV DIFFUSERS

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## TABLE OF CONTENTS

### Overview

List of BACnet Objects..... 1

### BACNet List

BACnet Points List for Prodigy ..... 2

### SUPPORT ▼

Having difficulty installing this product?  
Price is here to help.

#### Application Support

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# PRODIGY® - DIGITAL VAV DIFFUSERS

## OVERVIEW

### List of BACnet Objects

The different properties of the diffuser may be accessed using a LCD thermostat (or Setup Tool) and over the BACnet network. Below is a summary of the BACnet Objects followed by a detailed description of each Object. Some properties are only accessible through the thermostat and others only over the BACnet network. Properties accessible by both are indicated below.

### BACnet Network Addressing

The BACnet MAC Address can be set using the LCD thermostat or the dip switches located on the diffuser (see diffuser Installation manual for more details).

The BACnet Instance (or ID) Number can only be set using the LCD thermostat (see diffuser Installation manual for more details).

### BACnet Objects Summary

#### Measurements

- AI1\* Room Temperature
- AI3\* Supply Air Temperature

#### Set Points

- AV6\* Current Room Setpoint
- AV4\* Room Setpoint Low Limit
- AV5\* Room Setpoint High Limit
- AV7\* Night Heat Setpoint
- AV8\* Night Cool Setpoint

#### Damper Position

- AV18\* Current Damper Position
- AV12\* Unoccupied (Night) Damper Position
- AV19\* Damper Target
- AV20 Damper Neutral Supply Position
- AV21\* Damper Cool Min Position
- AV22\* Damper Cool Max Position
- AV23\* Damper Heat Min Position
- AV24\* Damper Heat Max Position

#### Overrides

- AV25\* Damper Override (Remote Mode Flag)
- AV28 Net Setpoint
- AV29 Net Room Temperature
- AV30 Net Occupancy

#### Heat Cool Mode

- AV14\* Room Load (Controller Status)

#### Special with Wireless Thermostat

- AI8 Wireless Signal Strength
- AI9 Wireless Batter Code

#### Special with CO<sup>2</sup>/Humidity Thermostat

- AI10\* Room CO<sup>2</sup>
- AI11\* Room Humidity

#### Special with Occupancy Thermostat

- AV2 Occupancy
- AV3\* Occupancy Source

#### Special with DMS Flow Measurement

- AV41\* Measured airflow
- AV42\* Calibration K-Factor
- AV43 Airflow connection status
- AV44\* Airflow units of measure

#### Special Applications

- AI4 to AI7 Analog Inputs
- AV27 Aux Analog Output Voltage

- AV9 Binary Output Application
- AV10 Binary Output Signal Type
- AV11 Binary Output Status

- AV31 Net Lights

- AV33 Contact Closure One Application
- AV34 Contact Closure One Status
- AV35 Contact Closure Two Application
- AV36 Contact Closure Two Status
- AV37 Contact Closure Three Application
- AV38 Contact Closure Three Status
- AV39 Contact Closure Four Application
- AV40 Contact Closure Four Status

#### Controller Properties – DO NOT ADJUST WITHOUT APPROVAL

- AV1\* Control Model
- AV15\* Proportional Band
- AV16\* Day Differential
- AV17\* Inlet Size
- AV26 Drone Output Voltage
- AV32 Power Frequency
- AV13 Ping
- AV45 Reserved for manufacturer

\*Also available through LCD thermostat

# PRODIGY® - DIGITAL VAV DIFFUSERS

## BACNET LIST

### BACnet Points List for Prodigy (3.0.5 Rev A 1027v)

Object	Name	Units	Default	Range	Description	R/W	RETAINED ON POWER FAILURE
AI1	Room Temperature	°F/°C	N/A	(-59) - 300	Current Room Temperature	R	N
AI2	N/A	N/A	0	0	N/A	R	N
AI3	Supply Air Temperature	°F/°C	N/A	(-59) - 300	Current Supply Air Temperature	R	N
AI4	Analog Input J18	V	N/A	0-10	Spare Analog Input	R	N
AI5	Analog Input 4	V	N/A	0-10	IO Board AI4	R	N
AI6	Analog Input 5	V	N/A	0-10	IO Board AI5	R	N
AI7	Analog Input 6	V	N/A	0-10	IO Board AI6	R	N
AI8	Wireless Signal Strength or N/A	%	N/A	0-100	Signal strength from wireless stat when connected	R	N
AI9	Wireless Battery Code or N/A	N/A	N/A	0-5	Battery code from wireless stat when connected	R	N
AI10	Room CO <sup>2</sup>	ppm	Dynamic	350-10000	Current CO <sup>2</sup> at the T-Stat	R	N
AI11	Room Humidity	%RH	Dynamic	0-100	Current Relative Humidity at the T-Stat	R	N
AV1	Control Model	N/A	N/A	1-3	Source of room temperature set point 2 - Thermostat Setpoint 3 - T-Stat not connected	R	Y
AV2	Occupancy	N/A	N/A	0-1	Occupancy Status 0 - Unoccupied 1 - Occupied	R	N
AV3	Occupancy Source	N/A	N/A	0,4-5, 12, 14-15	Source of occupancy: 0- Occupied Default Mode 2 - Occupied from Contact Closure 3 - Occupied from T-Stat Button Press 4 - Occupied from Motion Sensor 5 - Occupied from Network Override (AV30) 12 - Unoccupied from Contact Closure 14- Unoccupied from Motion Sensor 15 - Unoccupied from Network Override	R	N
AV4	Room Setpoint - Low Limit	°F/°C	65°F(18°C)	10-AV5	Lowest user-adjustable setpoint. The upper limit is equal to AV5	R/W	Y
AV5	Room Setpoint - High Limit	°F/°C	80°F(26°C)	AV4-250	Highest user-adjustable setpoint. The lower limit is equal to AV4	R/W	Y
AV6	Room Setpoint	°F/°C	72°F(22°C)	AV4-AV5	Current Room Setpoint (Limited by AV4 and AV5)	R	N
AV7	Night Heat Setpoint	°F/°C	62°F(17°C)	0-249	Setpoint at which controller will enter Heating mode during unoccupied periods (1 degree difference must be between heat and cool to adjust the range). The upper limit is one less than AV8	R/W	Y
AV8	Night Cool Setpoint	°F/°C	83°F(28°C)	1-250	Setpoint at which controller will enter Cooling mode during unoccupied periods (1 degree difference must be between heat and cool to adjust the range). The lower limit is one less than AV7	R/W	Y

# PRODIGY® - DIGITAL VAV DIFFUSERS

## BACNET LIST

Object	Name	Units	Default	Range	Description	R/W	RETAINED ON POWER FAILURE
AV9	Binary Output Application	N/A	N/A	0-6	Configuration of the spare binary output: 0 - ON during Heat (Load = Trip Point to +100%) 1 - ON during Cooling (Load = Trip point to -100%) 2 - ON during Heating & Cooling 3 - ON during Deadband (satisfied) (Load = 0% to Trip Point) 4 - Room Lights Control (Motion T-Stat) 5 - Output OFF (override Off) 6 - Output ON (override On)	R/W	Y
AV10	Binary Output Signal Type	N/A	N/A	0-6	Signal Type: 1 - PWM 2 - PDM 3 - On/Off (24VAC on/off to enable relay (by others 12VA max) 4 - PWM, disabled if hot air in duct 5 - PDM, disabled if hot air in duct 6 - On/Off, disabled if hot air in duct  <i>1 and 2 only available if output application is heat. Otherwise only 3 available.</i>  <i>Do not use 5 and 6 with duct heater.</i>	R	N
AV11	Binary Output Status	N/A	N/A	N/A	0/1 if on/off. Otherwise 0-100%	R	N
AV12	Unoccupied (Night) Damper Position	%	0	0-100	Position at which the damper is held during unoccupied periods	R/W	Y
AV13	Ping	N/A	0	0-255	Number of times the LCD T-Stat will beep. Useful for locating a box/T-Stat. (For example, if the number 30 is written to this variable, the T-Stat will beep 30 times before zeroing this variable)	R/W	N
AV14	Controller Status	%	N/A	-100% to +100%	Current Room Load (PI value) 1%-100% = Heating load 0% = Deadband (room satisfied) (-1%) - (-100%) = Cooling Load	R	N
AV15	Proportional Band	°F/°C	2°F(1°C)	1-20	Temperature band through which the PI controller travels through 1% to 100% load	R/W	Y
AV16	Day Differential	°F/°C	1°F(0.5°C)	1-25	Temperature band on either side of the setpoint within the controller is deemed satisfied. (for example, with a Day Differential of 1°F, and a setpoint of 72°F, the controller is satisfied between 71°F and 73°F and Load = 0%)	R/W	Y
AV17	Inlet Size	Inches	8	6, 8, 10, 12	Inlet Size for the Prodigy unit.	R/W	Y
AV18	Current Damper Position	%	N/A	0-100, 999	Current damper position in percent, See "damper response chart" Note: A value of 999% indicates the damper is recalibrating itself	R	N
AV19	Damper Target	%	N/A	0-100	Damper target in percent	R	N
AV20	Damper Neutral Supply Position	%	50	0-100	Damper position when supply is neutral	R/W	Y
AV21	Damper Cool Min Position	%	0	0-100	Minimum m damper position in cooling, Upper Limit is AV22	R/W	Y

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Object	Name	Units	Default	Range	Description	R/W	RETAINED ON POWER FAILURE
AV22	Damper Cool Max Position	%	100	0-100	Maximum damper position in cooling, Lower Limit is AV21	R/W	Y
AV23	Damper Heat Min Position	%	0	0-100	Minimum damper position in heating, Upper Limit is AV24	R/W	Y
AV24	Damper Heat Max Position	%	100	0-100	Maximum damper position in heating, Lower Limit is AV23	R/W	Y
AV25	Remote Mode Flag (Damper Position Override)	N/A	0	0-7	Remote Mode - Damper Override 0 - Automatic control (normal run mode) 1 - Target Cool Min 2 - Target Cool Max 3 - Target Heat Min 4 - Target Heat Max 5 - Target Neutral Airflow 6 - Open Damper 100% 7 - Close Damper (0%)	R/W	N
AV26	Drone Output Voltage	V	N/A	0-10	VDC output to Prodigy Drone Units	R	N
AV27	Aux Analog Output Voltage	V	N/A	0-10	Spare Voltage Output (J17)	R	N
AV28	Net Setpoint	°F/°C	0	0-250	Setpoint override from BACnet network	R/W	Y
AV29	Net Room Temp	°F/°C	0	0-250	Room temperature override from BACnet network	R/W	Y
AV30	Net Occupancy	N/A	0	0-2	Occupancy override from BACnet network 0 - Normal Operation 1 - Force Occupied 2 - Force Unoccupied	R/W	Y
AV31	Net Lights	N/A	0	0-2	Room Lights override from BACnet network 0 - Normal Operation 1 - Force Lights On 2 - Force Lights Off	R/W	Y
AV32	Power Frequency	Hz	60	50/60	Device Power Input Frequency 50 - 50 Hz Power Input 60 - 60 Hz Power Input	R/W	Y
AV33	Contact Closure One Application	N/A	0	0-4	Contact Closure Configuration on J14 0 - Not Used 1 - Unoccupied 2 - Occupied 3 - Full Open 4 - Full Close	R/W	Y
AV34	Contact Closure One Status	N/A	0	0-1	The current contact closure configuration on J14 0 - Not Contacted 1 - Contacted	R	N
AV35	Contact Closure Two Application	N/A	0	0-4	Contact Closure Configuration on AI4 0 - Not Used 1 - Unoccupied 2 - Occupied 3 - Full Open 4 - Full Close	R/W	Y
AV36	Contact Closure Two Status	N/A	0	0-1	The current contact closure configuration on AI4 0 - Not Contacted 1 - Contacted	R	N

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Object	Name	Units	Default	Range	Description	R/W	RETAINED ON POWER FAILURE
AV37	Contact Closure Three Application	N/A	0	0-4	Contact Closure Configuration on AI5 0 - Not Used 1 - Unoccupied 2 - Occupied 3 - Full Open 4 - Full Close	R/W	Y
AV38	Contact Closure Three Status	N/A	0	0-1	The current contact closure configuration on AI5 0 - Not Contacted 1 - Contacted	R	N
AV39	Contact Closure Four Application	N/A	0	0-4	Contact Closure Configuration on AI6 0 - Not Used 1 - Unoccupied 2 - Occupied 3 - Full Open 4 - Full Close	R/W	Y
AV40	Contact Closure Four Status	N/A	0	0-1	The current contact closure configuration on AI6 0 - Not Contacted 1 - Contacted	R	N
AV41	Airflow	CFM or LPS or CMH	0	N/A	The current airflow reading from the airflow sensor.	R	N
AV42	K Factor	N/A	890	1-20000	The K Factor used in calculation the device airflow.	R/W	Y
AV43	Airflow Sensor Connection Status	N/A	0	0-1	The connection status of the SDP airflow sensor 0 - Not Connected 1 - Connected	R	N
AV44	Airflow Units	N/A	1	1 - 3	1 - CMF 2 - LPS 3 - CMH	R	N
AV45	Show User Settings	N/A	0	N/A	Reserved for manufacturer	R	N

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