

Aircore EC

BACnet User Manual

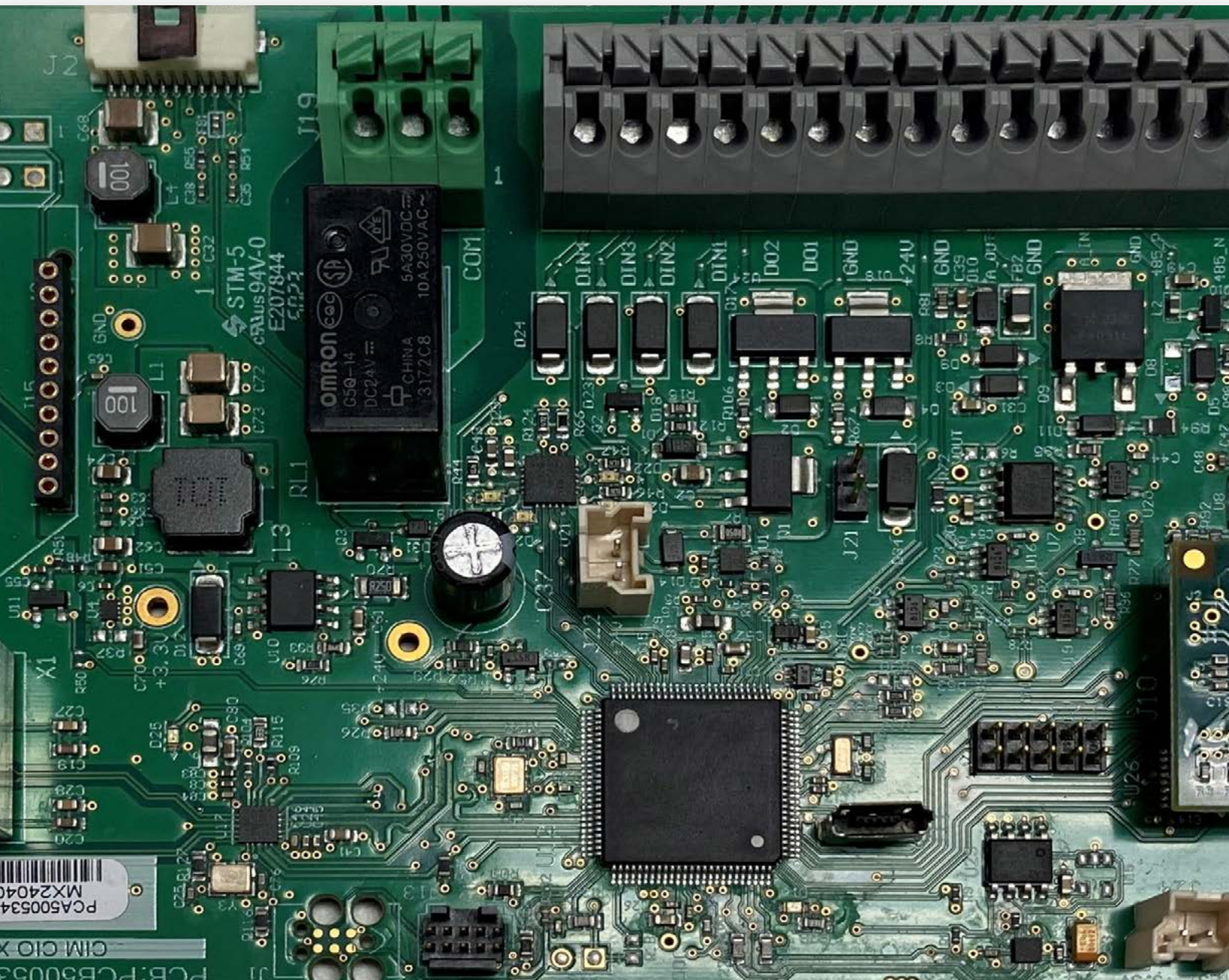
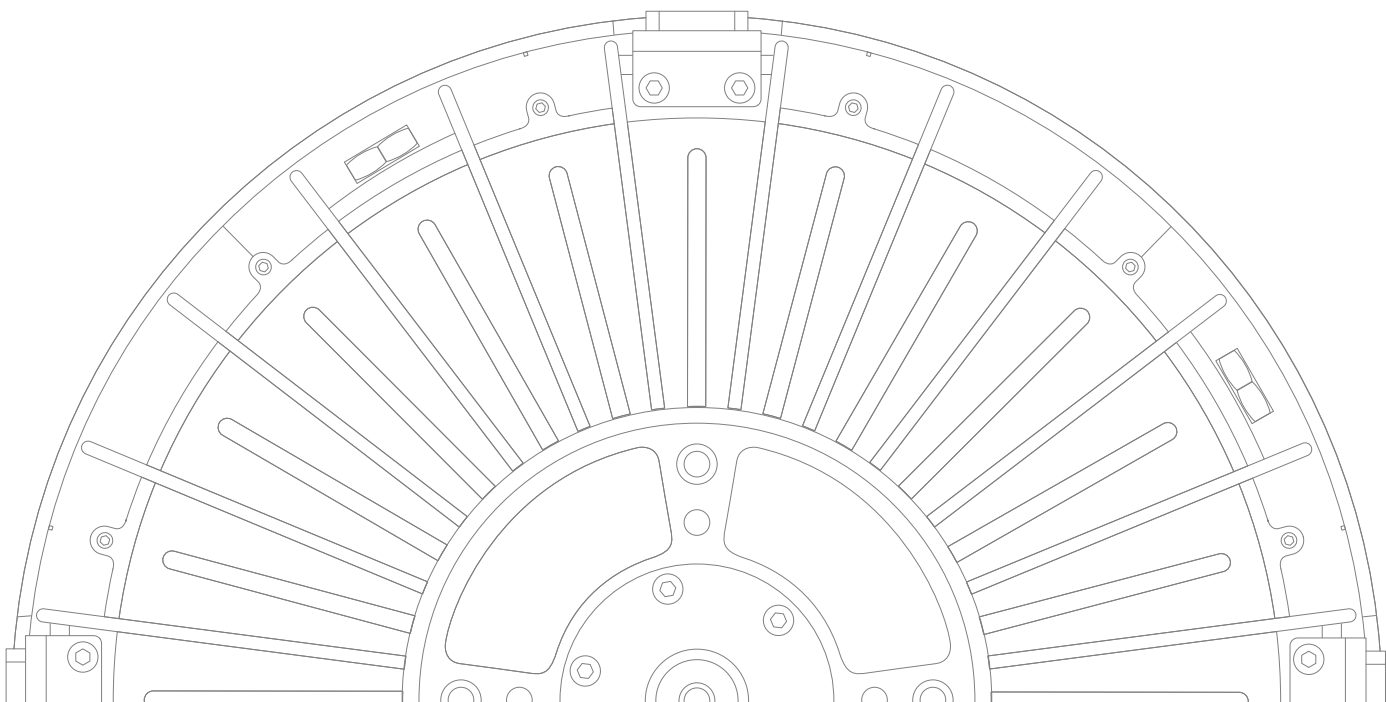


Table of Contents

1. About the manual	3
2. Introduction to BACnet communication	3
3. BACnet: Installation and field wiring hardware	4
4. BACnet Module: Installation	4
5. BACnet Module, Field Wiring	5
6. Terminating Resistor	5
7. BACnet Module, programming	6
8. NPU tool	6
9. BACnet baud rate and address	7
10. Appendix & troubleshooting	11



1. About the manual

This manual describes the information needed to operate Infinitum Aircore EC motors using the BACnet protocol. This manual should be used in conjunction with the [Aircore EC Installation Operation and Maintenance \(IOM\) Manual](#).

Abbreviations

BACnet	Building Automation Control Network
BACnet MS/TP	BACnet Master-Slave Token Passing

2. Introduction to BACnet communication

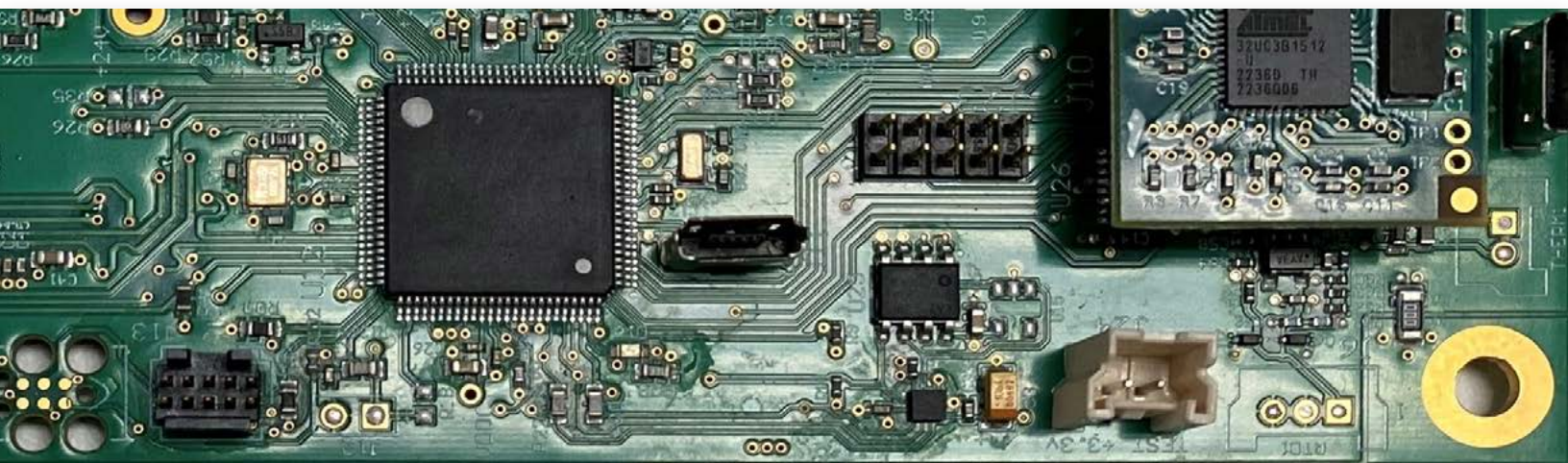
BACnet is a common motor control protocol used in HVAC applications. This protocols is defined by ANSI/ASHRAE/ISO Standard 135-2004. The protocol is used for building automation and control describing the interaction between devices and systems. The protocol uses an object-oriented model for data and commands.

BACnet has 6 types of communication networks to transmit messages with each defining the physical and data link communication layers. The six network types are:

- BACnet ARCnet
- BACnet Ethernet
- BACnet Lontalk
- BACnet MS/TP
- BACnet Point-to-Point
- BACnet IP

Infinitum Aircore EC motors support BACnet MS/TP. BACnet MS/TP utilizes RS485 as the physical later. RS485 is a serial interface that follows the EIA/TIA-485 standards.

Infinitum BACnet operation allows communication baud rates from 9600 to 115200 bits/sec. The interface is a differential signal, electrically isolated. It allows up to 32 devices on a segment, with a maximum cable length of 1000m. This EIA-485 network requires a terminating resistor at each end of the main bus. Infinitum Aircore EC motors include the terminating resistor.



3. BACnet: Installation and field wiring hardware

BACnet ordering and identification

Infinity Aircore EC motors have a catalog number that identifies hardware features of the Aircore EC family. Motors are ordered with their features defined by their catalog number. This number is found on the identification label of the motor. The catalog number decoder is below Figure 1.



Figure 1. BACnet MS/TP is one of the VFD and I/O options (“B”).

AE (Aircore EC) Family Catalog Number **XX-XX-XXXX-XXXX-XXXX**

Family	Frame	Rated Power	Rated Speed	Product Code Voltage	Product Code VFD and I/O	Product Code Reserved	Product Code Bearings	Product Code Shaft Length	Product Code Wireless	Product Code Enclosure	Product Code Grounding
XX	XX	XXXX	XXXX	X	X	X	X	X	X	X	X
AE	13 130 Frame	0590* +	1225 +	A 460V/60Hz	A MODBUS RTU	A None	S Steel	A 3.25"	A None	4 IP54	0 Grounded Wye
	15 150 Frame	0789* +	1800 +	B 415V/60Hz	B BACnet MS/TP		H Hybrid Ceramic		B Bluetooth	5 IP55	3 Delta/HRG
	18 180 Frame	1000* +	2400 +	C* 575V/60Hz					C Cellular		
	20 205 Frame	1500* +	3600 +						W Wi-Fi		

*0590= 5.9 HP, 0789= 7.89 HP, 1000= 10 HP, 1500= 15 HP

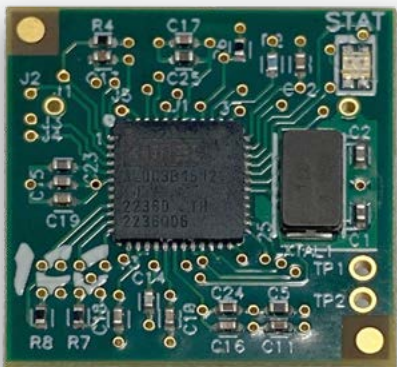
+ More power and speed variations available

4. BACnet Module: Installation

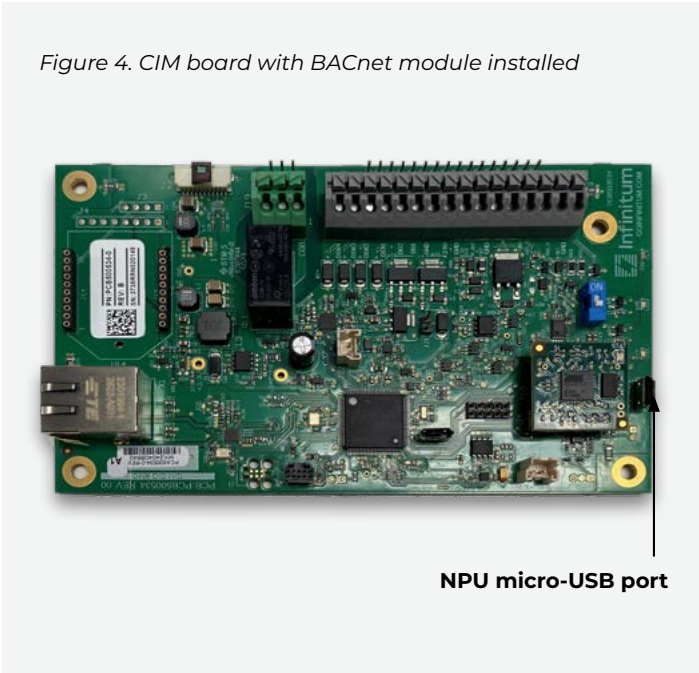
BACnet is a factory configured option, though Infinity service technicians can upgrade a field installed motor to support it. BACnet functionality is provided by a BACnet module that is installed on the Aircore EC CIM (Communication Interface Module) board.

The BACnet module is BTL certified. **PICS is in appendix.**
See Figure 3.

Figure 3. BACnet module



The BACnet module is installed in the CIM below. For reference, the STAT on the screen print on the corner of the BACnet module faces the terminal strip. See Figure 4.



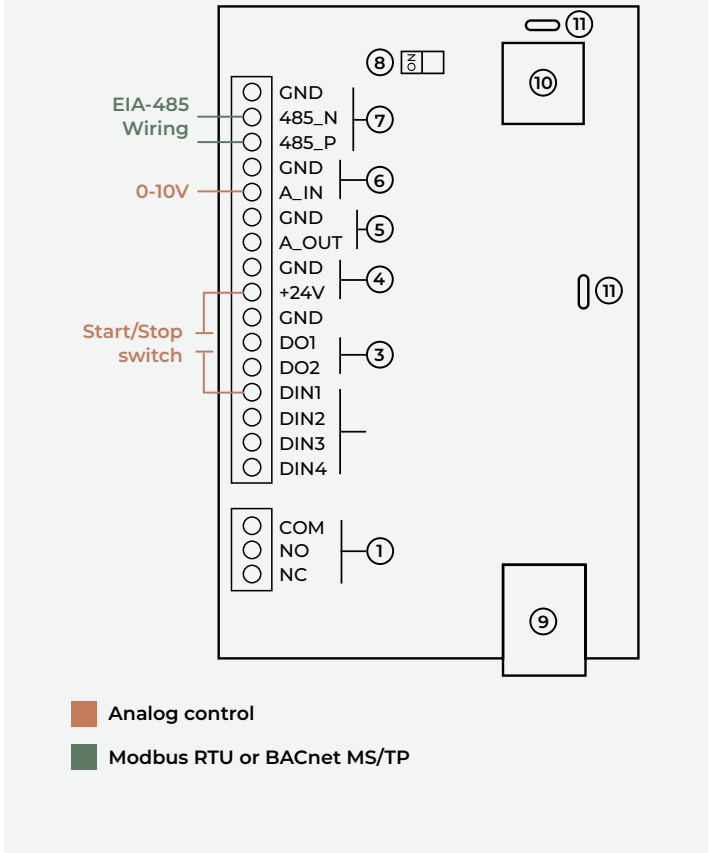
Note: If the BACnet module is installed in the incorrect orientation this could cause permanent damage to the module

5. BACnet Module, Field Wiring

Like Modbus, BACnet uses EIA-485 signaling. All control signals are available on the terminal strip of the CIM board. The See Figure 5 (Pin label 7) for the EIA-485 connections on the CIM board terminal strip. The following details should be followed for EIA networks:

- Shielded cables should be used with at least one ground wire and twisted signal wires
- Cable runs should be laid separately from power cables if possible
- The network should be grounded, preferably at the same ground connection. Cable shields should be connected at each motor (but not to ground)
- Termination resistance should be provided at each end of the cable run

Figure 5. CIM terminal strip connections



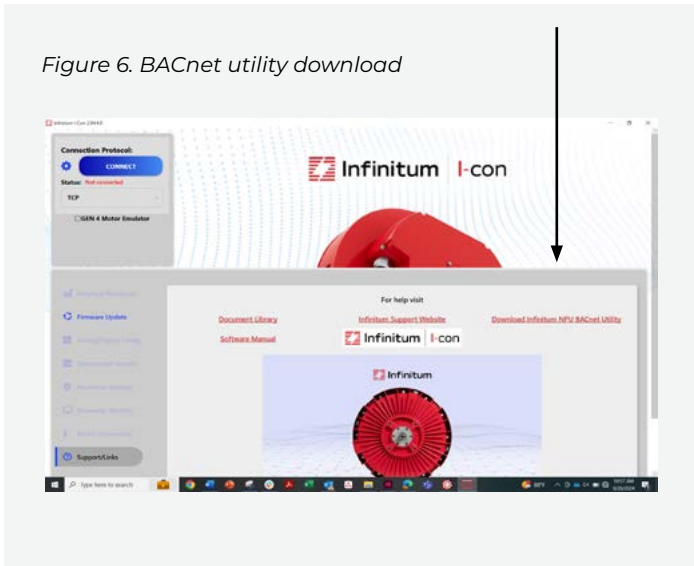
6. Terminating Resistor

RS485 based networks require termination at both ends of the main bus. Infinitum motors provide this termination using a DIP switch that connects a 120 Ohm resistor to the serial line. This DIP switch placement is indicated in the drawing in Figure 5 (Identifier 8).

7. BACnet Module, programming

BACnet networks require each device to have a unique address so they can be individually addressed the BACnet master. Another BACnet parameter that must be established is the Baud rate. Infinitum provides an Installer link to the BACnet Network Parameter Utility (NPU) Tool to provide use to change the address (Instance) and baud rate of each motor on the BACnet network. The tool is available on the Infinitum website (link) and as a link on I-con, the Infinitum motor control tool. See Figure 6.

Figure 6. BACnet utility download



Users will need internet access to utilize this link. The link is a Zip file. You should extract all the files then run the NPU.exe file to start the NPU utility.

8. NPU tool

BACnet networks require each device to have a unique address so The Infinitum Network Parameter Utility tool can be downloaded via the links above. Once downloaded the tool uses a USB connection from a laptop to the CIM board to communicate to the installed BACnet module. See *Figure 5. CIM terminal strip connections* for the location of the Micro-USB port to use with NPU.

Once NPU is downloaded, connect a USB to Micro-USB cable to the port indicated above. Power on the motor and start the NPU program. The screen below should appear, Figure 7.

Figure 7. NPU

A screenshot of the Infinitum Network Parameter Utility (NPU) tool interface. The window title is 'Infinitum Network Parameter Utility'. The interface includes a menu bar with 'File', 'Tools', and 'About'. The main area displays the Infinitum logo and 'Aircore EC'. Below this, various parameters are listed with input fields: 'Firmware Version' (4.300), 'Device Status' (Normal), 'Run Mode' (Running), 'Protocol' (BACnet MS/TP Server), 'MAC Address' (24), 'Baud Rate' (19200), 'Parity' (No Parity (1 Stop Bit)), 'APDU Timeout (ms)' (1000), 'Number of APDU Retries' (3), 'Device Name' (Aircore EC Motor), 'Device Instance' (22), and 'Max Master' (127). There are 'Submit' and 'Reload' buttons at the bottom. A status bar at the very bottom says 'Ready'. Two labels with arrows point to the 'Baud Rate' and 'Device Instance' fields.

9. BACnet baud rate and address

The baud rate and address (Device Instance) are both editable fields and can be changed with the NPU tool as noted in Figure 7 (page 6). Do not alter the MAC address.

Modbus Register	Name	BacNet Object Number	BACnet object name (32 characters max)	Qty	BACnet point name (16 characters max)
1001	SW Run/Stop	OBJECT_ANALOG_OUTPUT:1	Motor Control	3	Run/Stop Cmd
1002	SW Direction	OBJECT_ANALOG_OUTPUT:2			Direction Cmd
1003	SW Speed	OBJECT_ANALOG_OUTPUT:3			Speed Command
1101	Speed User Minimum	OBJECT_ANALOG_OUTPUT:4	Oper Limits	16	Speed User Min
1102	Speed User Maximum	OBJECT_ANALOG_OUTPUT:5			Speed User Max
1103	Speed Absolute Minimum	OBJECT_ANALOG_OUTPUT:6			Speed Abs Min
1104	Speed Absolute Maximum	OBJECT_ANALOG_OUTPUT:7			Speed Abs Max
1105	Acceleration Ramp Duration	OBJECT_ANALOG_OUTPUT:8			Accel Ramp Time
1106	Deceleration Ramp Duration	OBJECT_ANALOG_OUTPUT:9			Decel Ramp Time
1107	Skip Speed 1 Min	OBJECT_ANALOG_OUTPUT:10			Skip Speed 1
1108	Skip Speed 1 Max	OBJECT_ANALOG_OUTPUT:11			Skip Speed 2
1109	Skip Speed 2 Min	OBJECT_ANALOG_OUTPUT:12			Skip Speed 3
1110	Skip Speed 2 Max	OBJECT_ANALOG_OUTPUT:13			Skip Speed BW
1111	Direction Allowed	OBJECT_ANALOG_OUTPUT:14			Dir Allowed
1112	Max Acceleration	OBJECT_ANALOG_OUTPUT:15			Max Accel Allow
1113	Max Deceleration	OBJECT_ANALOG_OUTPUT:16			Max Decel Allow
1114	Speed Model Minimum	OBJECT_ANALOG_OUTPUT:17			Speed Model Min
1115	Speed Model Maximum	OBJECT_ANALOG_OUTPUT:18			Speed Model Max
1116	Load Inertia	OBJECT_ANALOG_OUTPUT:19			Load Inertia
1201	Control Mode	OBJECT_ANALOG_OUTPUT:20	Operation Type	10	Control Mode
1202	Speed Input Source	OBJECT_ANALOG_OUTPUT:21			Speed Source
1203	Start/Stop Input Source	OBJECT_ANALOG_OUTPUT:22			Run/Stop Source
1204	Direction Input Source	OBJECT_ANALOG_OUTPUT:23			Dir Source
1205	Clear Fault Input Source	OBJECT_ANALOG_OUTPUT:24			Clr Flt Source
1206	Start Function	OBJECT_ANALOG_OUTPUT:25			dummy1
1207	Stop Function	OBJECT_ANALOG_OUTPUT:26			dummy2
1208	Enable Foldback	OBJECT_ANALOG_OUTPUT:27			Enable Foldback
1209	Interlock Input Source	OBJECT_ANALOG_OUTPUT:28			Disable Source
1210	Override Input Source	OBJECT_ANALOG_OUTPUT:29			Override Source
1301	Reset Attempts	OBJECT_ANALOG_OUTPUT:30	Fault Reset	2	Reset Attempts
1302	Reset Delay	OBJECT_ANALOG_OUTPUT:31			Reset Delay
2001	AI1 Function	OBJECT_ANALOG_OUTPUT:32	Term Setting A1	6	AI1 Function
2002	AI1 Minimum Setting	OBJECT_ANALOG_OUTPUT:33			AI1 Min Setting
2003	AI1 Maximum Setting	OBJECT_ANALOG_OUTPUT:34			AI1 Max Setting
2004	AI1 Filter	OBJECT_ANALOG_OUTPUT:35			dummy3
2005	AI1 Fault Action	OBJECT_ANALOG_OUTPUT:36			dummy4
2006	AI1 Type Selection	OBJECT_ANALOG_OUTPUT:37			AI1 Type Select
2010	AI1 Open Max V	OBJECT_ANALOG_OUTPUT:38	Term Setting A2	4	AI1 Open Max V
2011	AI1 Open Speed RPM	OBJECT_ANALOG_OUTPUT:39			AI1 Open RPM

Modbus Register	Name	BacNet Object Number	BACnet object name (32 characters max)	Qty	BACnet point name (16 characters max)
2012	AI1 Stop Min V	OBJECT_ANALOG_OUTPUT:40			AI1 Stop Min V
2013	AI1 Stop Max V	OBJECT_ANALOG_OUTPUT:41			AI1 Stop Max V
2101	DI1 Function	OBJECT_ANALOG_OUTPUT:44	Term Setting DI	4	DI1 Function
2102	DI2 Function	OBJECT_ANALOG_OUTPUT:45			DI2 Function
2103	DI3 Function	OBJECT_ANALOG_OUTPUT:46			DI3 Function
2104	DI4 Function	OBJECT_ANALOG_OUTPUT:47			DI4 Function
2201	Constant Speed 1	OBJECT_ANALOG_OUTPUT:48	Term Setting CS	5	Const Speed 1
2202	Constant Speed 2	OBJECT_ANALOG_OUTPUT:49			Const Speed 2
2203	Constant Speed 3	OBJECT_ANALOG_OUTPUT:50			Const Speed 3
2204	Constant Speed 4	OBJECT_ANALOG_OUTPUT:51			Const Speed 4
2205	Override Speed	OBJECT_ANALOG_OUTPUT:52			Override Speed
2301	AO1 Function	OBJECT_ANALOG_OUTPUT:53	Term Setting AO	5	AO1 Function
2302	AO1 Scaling Minimum	OBJECT_ANALOG_OUTPUT:54			AO1 Scaling Min
2303	AO1 Scaling Maximum	OBJECT_ANALOG_OUTPUT:55			AO1 Scaling Max
2304	AO1 Filter	OBJECT_ANALOG_OUTPUT:56			AO1 Filter
2305	AO1 Type	OBJECT_ANALOG_OUTPUT:57			AO1 Type
2401	DO1 Function	OBJECT_ANALOG_OUTPUT:59	Term Setting DO	2	DO1 Function
2402	DO2 Function	OBJECT_ANALOG_OUTPUT:60			DO2 Function
3003	DC Bus Voltage	OBJECT_ANALOG_OUTPUT:63	Monitor Env	4	DC Bus Voltage
3004	DC Bus Current	OBJECT_ANALOG_OUTPUT:64			DC Bus Current
3005	DC Bus Power	OBJECT_ANALOG_OUTPUT:65			DC Bus Power
3006	Average Current	OBJECT_ANALOG_OUTPUT:66			Avg Current
3103	Stator (RTD)	OBJECT_ANALOG_OUTPUT:69	Monitor Temp	6	Temp RTD
3104	Stator Average	OBJECT_ANALOG_OUTPUT:70			Temp Average
3105	T3 HeatSink	OBJECT_ANALOG_OUTPUT:71			Temp Heatsink
3106	T2 Stator NTC1	OBJECT_ANALOG_OUTPUT:72			Temp NTC1
3107	INV Board Temp	OBJECT_ANALOG_OUTPUT:73			Temp INV Board
3108	T1 INV J7 (spare)	OBJECT_ANALOG_OUTPUT:74			Temp NTC2
3151	T14 CIM Board temp	OBJECT_ANALOG_OUTPUT:82	CIM Temp	1	Temp CIM
3303	run/stop actual	OBJECT_ANALOG_OUTPUT:102	Actual	3	Run/Stop Actual
3304	direction actual	OBJECT_ANALOG_OUTPUT:103			Dir Actual
3305	Speed_krpm	OBJECT_ANALOG_OUTPUT:104			Speed Actual
3601	AIN1	OBJECT_ANALOG_OUTPUT:120	Analog In %	2	AI1 Value
3602	AIN1 Raw	OBJECT_ANALOG_OUTPUT:121	Analog in Raw		AI1 Raw
3701	AOUT1	OBJECT_ANALOG_OUTPUT:122	Analog Out	1	AO1 Value
3703	DIN1	OBJECT_ANALOG_OUTPUT:124	Data Inputs	4	DI1 Value
3704	DIN2	OBJECT_ANALOG_OUTPUT:125			DI2 Value
3801	DIN3	OBJECT_ANALOG_OUTPUT:126			DI3 Value
3802	DIN4	OBJECT_ANALOG_OUTPUT:127			DI4 Value
3803	DOUT1	OBJECT_ANALOG_OUTPUT:128	Data Outputs	2	DO1 Value
3804	DOUT2	OBJECT_ANALOG_OUTPUT:129			DO2 Value
4003	Active Faults	OBJECT_ANALOG_OUTPUT:132	Faults	4	Active Faults
4004	Active Warnings	OBJECT_ANALOG_OUTPUT:133			Active Warnings
4011	Clear Faults	OBJECT_ANALOG_OUTPUT:134			Clear Faults

Modbus Register	Name	BacNet Object Number	BACnet object name (32 characters max)	Qty	BACnet point name (16 characters max)
4012	Clear Warnings	OBJECT_ANALOG_OUTPUT:135			Clear Warnings
4013	Fault Word	OBJECT_ANALOG_OUTPUT:136	Raw Faults	1	Fault Word
4032	Warning Word	OBJECT_ANALOG_OUTPUT:140	Warning Word	1	Warning Word
7003	Parameter Table Version	OBJECT_ANALOG_OUTPUT:160	Parameters	14	Parameter Table
7004	max current	OBJECT_ANALOG_OUTPUT:161			Motor Max Amps
7005	Motor Voltage	OBJECT_ANALOG_OUTPUT:162			Motor Voltage
7006	New SN1	OBJECT_ANALOG_OUTPUT:163			Motor SN 1
7007	New SN2	OBJECT_ANALOG_OUTPUT:164			Motor SN 2
7008	New SN3	OBJECT_ANALOG_OUTPUT:165			Motor SN 3
7009	New SN4	OBJECT_ANALOG_OUTPUT:166			Motor SN 4
7010	New SN5	OBJECT_ANALOG_OUTPUT:167			Motor SN 5
7011	New SN6	OBJECT_ANALOG_OUTPUT:168			Motor SN 6
7012	New SN7	OBJECT_ANALOG_OUTPUT:169			Motor SN 7
7013	Old SN1	OBJECT_ANALOG_OUTPUT:170			Motor SN 8
7014	Old SN2	OBJECT_ANALOG_OUTPUT:171			Motor SN 9
7021	Old SN3	OBJECT_ANALOG_OUTPUT:172			Motor SN 10
7022	Old SN4	OBJECT_ANALOG_OUTPUT:173			Motor SN 11
7031	Model	OBJECT_ANALOG_OUTPUT:174	Model	2	Motor Model
7032	Motor rated speed	OBJECT_ANALOG_OUTPUT:175			Motor rated RPM
7033	INV FW Major	OBJECT_ANALOG_OUTPUT:176	Motor ID	14	INV FW Major
7034	INV FW Minor	OBJECT_ANALOG_OUTPUT:177			INV FW Minor
7035	CIM FW Major	OBJECT_ANALOG_OUTPUT:178			CIM FW Major
7036	CIM FW Minor	OBJECT_ANALOG_OUTPUT:179			CIM FW Minor
7037	Motor Type	OBJECT_ANALOG_OUTPUT:180			Motor Type
7038	Hardware ID	OBJECT_ANALOG_OUTPUT:181			Hardware ID
7039	INV FW Patch	OBJECT_ANALOG_OUTPUT:182			INV FW Patch
7040	CIM FW Patch	OBJECT_ANALOG_OUTPUT:183			CIM FW Patch
7041	Hardware ID INV	OBJECT_ANALOG_OUTPUT:184			Hardware ID INV
7042	Hardware ID VFD	OBJECT_ANALOG_OUTPUT:185			Hardware ID VFD
7043	Hardware ID CIM	OBJECT_ANALOG_OUTPUT:186			Hardware ID CIM
7044	Horsepower	OBJECT_ANALOG_OUTPUT:187			Horsepower
7101	Frame Size	OBJECT_ANALOG_OUTPUT:188			Frame Size
7102	Stator type	OBJECT_ANALOG_OUTPUT:189			Stator Type
7103	Drive Runtime hours	OBJECT_ANALOG_OUTPUT:190	Runtime	3	Drive Runtime
8601	Motor Runtime hours	OBJECT_ANALOG_OUTPUT:191			Motor Runtime
8602	Motor Energy megawatt-hours	OBJECT_ANALOG_OUTPUT:192			Motor MWh
8613	Modbus Monitor Enable	OBJECT_ANALOG_OUTPUT:203	Modbus Monitor	5	MB Mon Enable
8614	Modbus Monitor Timeout	OBJECT_ANALOG_OUTPUT:204			MB Mon Timeout
8615	Modbus Monitor Resume	OBJECT_ANALOG_OUTPUT:205			MB Mon Resume
8701	Modbus Monitor Stop	OBJECT_ANALOG_OUTPUT:206			MB Mon Stop

Modbus Register	Name	BacNet Object Number	BACnet object name (32 characters max)	Qty	BACnet point name (16 characters max)
8801	Modbus Monitor Speed	OBJECT_ANALOG_OUTPUT:207			MB Mon Speed
8802	Parameter Save	OBJECT_ANALOG_OUTPUT:208	Parameter Save	1	Parameter Save

Appendix

Infinitum BACnet Protocol Implementation Conformance Statement (PICS)

[PICS-downloadable PDF](#)

Aircore EC Com Module - BACnet PICS

BACnet Protocol Implementation Conformance Statement (PICS)

Date: June 26, 2024
Vendor Name: Infinitum, Inc.
Product Name: Aircore EC Com Module
Product Model Number: BACnet
Application Software Version: V4.300
Firmware Revision: V4.300
BACnet Protocol Revision: 12
Product Description:

The AirPort is a miniature serial communications engine-on-module for BACnet MS/TP applications. This product supports native BACnet, connecting directly to the MS/TP LAN using 19200 baud rate. The device can be configured as a BACnet Server.

BACnet Standard Device Profile (Annex L):

- ☐ 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 Interoperability Building Blocks Supported (Annex K):

- ☒ Data Sharing – ReadProperty-A (DS-RP-A)
- ☒ Data Sharing – ReadProperty-B (DS-RP-B)
- ☒ Data Sharing – ReadPropertyMultiple-B (DS-RPM-B)
- ☒ Data Sharing – WriteProperty-A (DS-WP-A)
- ☒ Data Sharing – WriteProperty-B (DS-WP-B)
- ☒ Data Sharing – WritePropertyMultiple-B (DS-WPM-B)
- ☒ Data Sharing – COV-B (DS-COV-B)
- ☒ Device Management – Dynamic Device Binding-A (DM-DDB-A)
- ☒ Device Management – Dynamic Device Binding-B (DM-DDB-B)
- ☒ Device Management – Dynamic Object Binding-B (DM-DOB-B)
- ☒ Device Management – DeviceCommunicationControl-B (DM-DCC-B)
- ☒ Device Management – ReinitializeDevice-B (DM-RD-B)
- ☒ Device Management – TimeSynchronization-B (DM-TS-B)*
- ☒ Device Management – UTCTimeSynchronization-B (DM-UTC-B)*

* Available only when Real-time Clock Settings are enabled

Segmentation Capability:

- ☐ Able to transmit segmented messages Window Size _____
- ☐ Able to receive segmented messages Window Size _____

Standard Object Types Supported:

Property	Object Type									
	Device	Binary Input	Binary Output	Binary Value	Analog Input	Analog Output	Analog Value	Multi-state Input	Multi-state Output	Multi-state Value
Object Identifier	W	R	R	R	R	R	R	R	R	R
Object Name	W	R	R	R	R	R	R	R	R	R
Object Type	R	R	R	R	R	R	R	R	R	R
System Status	R									
Vendor Name	R									
Vendor Identifier	R									
Model Name	R									
Firmware Revision	R									
Application Software Version	R									
Protocol Version	R									
Protocol Revision	R									
Protocol Services Supported	R									
Protocol Object Types Supported	R									
Object List	R									
Max APDU Length Accepted	R									
Segmentation Supported	R									
Local Time*	W									
Local Date*	W									
UTC Offset*	W (-840... 720)									
Daylight Savings Status*	W									
APDU Timeout	W (10... 65535)									
Number Of APDU Retries	W (0... 10)									
Max Master	W (1... 127)									
Max Info Frames	W (1... 100)									
Device Address Binding	R									
Database Revision	R									
Active COV Subscriptions	R									
Present Value		R	W	W	R	W	W	R	W	W
Status Flags		R	R	R	R	R	R	R	R	R
Event State		R	R	R	R	R	R	R	R	R
Reliability		R	R	R	R	R	R	R	R	R
Out Of Service		R	R	R	R	R	R	R	R	R
Number Of States								R	R	R

Units					R	R	R			
Priority Array			R	R		R	R		R	R
Relinquish Default			R	R		R	R		R	R
COV Increment					W	W	W			
Polarity		W	W							
Inactive Text		R	R	R						
Active Text		R	R	R						

R – Readable using BACnet services

W – Readable and writable using BACnet services

* Available only when Real-time Clock Settings are enabled

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): 19200
- ☐ 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? (This is currently for two-way communication with MS/TP slaves and certain other devices.) ☒ Yes ☐ No

Networking Options:

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

Network Security Options:

- ☒ Non-secure Device - is capable of operating without BACnet Network Security
- ☐ Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)
 - ☐ Multiple Application-Specific Keys:
 - ☐ Supports encryption (NS-ED BIBB)
 - ☐ Key Server (NS-KS BIBB)

Character Sets Supported:

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

- | | | |
|---|---|-------------------------------------|
| ☒ ISO 10646 (UTF-8) | ☐ IBM™/Microsoft™ DBCS | ☐ JIS X 0208 |
| ☐ ISO 10646 (UCS-4) | ☐ ISO 10646 (UCS-2) | ☐ ISO 8859-1 |

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports:

Refer to protocol-specific manuals for other supported protocols.



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