



MatrixBBC

Protocol Implementation Conformance Statement (PICS)

Vendor Name: American Auto-Matrix

Product Name: BACnet Building Controller

Product Model Number: x-BBC-y (x - indicating target model; y - feature)

Firmware Revision: Target using BBC module v1.1.56 or later

BACnet Protocol Revision: 9

Product Description:

The MatrixBBC is a powerful and scalable building controller that offers seamless area and global control capabilities for BACnet-based installations. Compliant to BACnet's B-BC profile, the product services BACnet MS/TP, BACnet/IP, and BACnet/Ethernet (8802-3) networks and their associated device connections. Flexible in both software and hardware, the product supports the ability to attach STATbus IOX Modules for applications requiring central-point direct digital control.

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-A	DS-WPM-B	AE-ESUM-B	T-ATR-B	DM-TS-B
DS-RP-B	DS-COV-A	AE-INFO-B	DM-DDB-A	DM-UTC-A
DS-WP-A	DS-COV-B	SCHED-I-B	DM-DDB-B	DM-UTC-B
DS-WP-B	AE-N-I-B	SCHED-E-B	DM-DOB-B	DM-RD-B
DS-RPM-A	AE-ACK-B	T-VMT-I-B	DM-DCC-B	DM-BR-B
DS-RPM-B	AE-ASUM-B	T-VMT-E-B	DM-TS-A	DM-OCD-B

Segmentation Capability:

Able to transmit segmented messages yes no Window Size: 1

Able to receive segmented messages yes no Window Size: 1

Standard Object Types Supported:

Dynamically Creatable & Deletable Objects:

Analog Input
 Analog Value
 Binary Output
 Calendar
 Program
 Trend Log

Analog Output
 Binary Input
 Binary Value
 Notification Class
 Schedule

MatrixBBC

Protocol Implementation Conformance Statement (PICS)

Properties:

Bold indicates writable properties

Italics indicates optional properties

Device:

Object-identifier	Object-list	<i>Utc-time-synchronization-recipients</i>
Object-name	Max-apdu-length	<i>Time-synchronization-interval</i>
Object-type	Segmentation-supported	Align-intervals
System-status	Local-time	Interval-offset
Vendor-name	Local-date	Slave-proxy-enable
Vendor-id	Utc-offset	Manual-slave-address-binding
Model-name	Daylight-savings-status	Slave-address-binding
Firmware-revision	Apdu-timeout	Last-restart-reason
Application-software-revision	Number-of-apdu-retires	Time-of-device-restart
Protocol-version	Max-master	Restart-notification-recipient
Protocol-revision	Max-info-frames	Database-revision
Protocol-services-supported	Time-synchronization-recipients	<i>Profile-name</i>
Protocol-object-types-supported	Device-address-binding	

Analog Input:

Object-identifier	<i>Min-pres-value</i>	Deadband
Object-name	Max-pres-value	Limit-enable
Object-type	<i>Reliability</i>	Event-enable
Present-value	<i>Resolution</i>	<i>Acked-transitions</i>
Status-flags	Time-delay	Notify-type
Event-state	Notification-class	<i>Event-time-stamps</i>
Out-of-service	High-limit	<i>Profile-name</i>
Units	Low-limit	

Analog Output:

Object-identifier	<i>Min-pres-value</i>	Deadband
Object-name	Max-pres-value	Limit-enable
Object-type	Priority-array	Event-enable
Present-value	Relinquish-default	<i>Acked-transitions</i>
Status-flags	Time-delay	Notify-type
Event-state	Notification-class	<i>Event-time-stamps</i>
Out-of-service	High-limit	<i>Profile-name</i>
Units	Low-limit	

Analog Value:

Object-identifier	Units	Limit-enable
Object-name	Priority-array	<i>Acked-transitions</i>
Object-type	Relinquish-default	Notify-type
Present-value	Notification-class	<i>Event-time-stamps</i>
Status-flags	High-limit	<i>Profile-name</i>
Event-state	Low-limit	
Out-of-service	Deadband	

MatrixBBC

Protocol Implementation Conformance Statement (PICS)

Binary Input:

Object-identifier
Object-name
 Object-type
 Present-value
 Status-flags
 Event-state

Out-of-service
Reliability
Polarity
Time-delay
Notification-class
Alarm-value

Event-enable
Acked-transitions
Notify-type
Event-time-stamps
Profile-name

Binary Output:

Object-identifier
Object-name
 Object-type
Present-value
 Status-flags
 Event-state
Reliability

Out-of-service
Polarity
Minimum-off-time
Minimum-on-time
 Priority-array
Relinquish-default
Time-delay

Notification-class
Feedback-value
Event-enable
Acked-transitions
Notify-type
Event-time-stamps
Profile-name

Binary Value:

Object-identifier
Object-name
 Object-type
Present-value
 Status-flags
 Event-state
Out-of service

Time-delay
Minimum-off-time
Minimum-on-time
 Priority-array
Relinquish-default
Notification-class
Alarm-value

Event-enable
Acked-transitions
Notify-type
Event-time-stamps
Profile-name

Calendar:

Object-identifier
Object-name

Object-type
 Present-value

Date-list
Profile-name

File:

Object-identifier
 Object-name
 Object-type
 File-type

File-size
 Modification-date
Archive
Read-only

File-access-method
Profile-name

Notification Class:

Object-identifier
Object-name
 Object-type

Notification-class
Priority
Ack-required

Recipient-list
Profile-name



MatrixBBC

Protocol Implementation Conformance Statement (PICS)

Program:

Object-identifier	Program-change	Status-flags
Object-name	<i>Reason-for-halt</i>	Out-of-service
Object-type	<i>Description-of-halt</i>	<i>Profile-name</i>
Program-state	Program-location	

Schedule:

Object-identifier	Weekly-schedule	Status-flags
Object-name	Exception-schedule	Reliability
Object-type	Schedule-default	Out-of-service
Present-value	List-of-object-property-references	<i>Profile-name</i>
Effective-period	Priority-for-writing	

Trend Log:

Object-identifier	Cov-resubscription-interval	Notification-class
Object-name	Stop-when-full	Event-enable
Object-type	Log-buffer	Acked-transitions
Description	Buffer-size	Notify-type
Log-device-object-property	Record-count	Logging-type
Status-flags	Notification-threshold	Event-time-stamps
Start-time	Records-since-notification	<i>Profile-name</i>
Stop-time	Last-notify-record	
Log-interval	Event-state	

Non-Standard Property Declaration:

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

Analog Inputs

Identifier	Meaning	Datatype
51526	Input Filter Display	Unsigned
53062	Input Offset	Real
53832	Run Hours	Unsigned
50497	Enable Alarming	Boolean
54100	Sensor Type	Unsigned
51017	GID	Unsigned
51491	Input Index	Unsigned

Analog Outputs

Identifier	Meaning	Datatype
52558	Min Scale	Real
58568	Max Scale	Real
53077	Actual Value	Real
54612	Update Time	Real
53832	Run Hours	Unsigned
50497	Enable Alarming	Boolean
51017	GID	Unsigned
51491	Output Index	Unsigned

MatrixBBC

Protocol Implementation Conformance Statement (PICS)

Analog Values

Identifier	Meaning	Datatype
50497	Enable Alarming	Boolean

Binary Inputs

Identifier	Meaning	Datatype
53832	Run Hours	Unsigned
50497	Enable Alarming	Boolean
54100	Sensor Type (BIs)	Unsigned
51017	GID	Unsigned
51491	Input Index	Unsigned
51526	Fit Delay (BI, 1001 and up)	Unsigned
52548	Pulse Count Mode	Unsigned
52816	Pulse Accumulated	Unsigned
54086	Pulse Multiplier	Real
54102	Scaled Pulse Count	Real

Binary Outputs

Identifier	Meaning	Datatype
53077	Actual Output	Unsigned
53335	Pulse Width	Real
53832	Run Hours	Unsigned
50497	Enable Alarming	Boolean
51017	GID	Unsigned
51491	Output Index	Unsigned

Binary Value

Identifier	Meaning	Datatype
50497	Enable Alarming	Boolean

Notification Class

Identifier	Meaning	Datatype
49457	Rec 1 Active?	Boolean
49458	Rec 2 Active?	Boolean
49459	Rec 3 Active?	Boolean
49460	Rec 4 Active?	Boolean
49461	Rec 5 Active?	Boolean

Schedule

Identifier	Meaning	Datatype
50005	Occ?	Boolean
50007	Unocc?	Boolean
49999	Warmup?	Boolean
50003	NightSB?	Boolean



MatrixBBC

Protocol Implementation Conformance Statement (PICS)

Programs

Identifier	Meaning	Datatype
42033	\$1 Register	Unsigned
42052	\$D Register	Unsigned
42053	\$E Register	Unsigned
42071	\$W Register	Unsigned
42062	\$N Register	Unsigned
42305	Register A	NULL
42306	Register B	NULL
42307	Register C	NULL
42038	Register D	NULL
42039	Register E	NULL
42310	Register F	NULL
42311	Register G	NULL
42312	Register H	NULL
42313	Register I	NULL
42314	Register J	NULL
42315	Register K	NULL
42316	Register L	NULL
42317	Register M	NULL
42318	Register N	NULL
42319	Register O	NULL
42320	Register P	NULL

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.)



MatrixBBC

Protocol Implementation Conformance Statement (PICS)

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.

- | | |
|---|--|
| <input checked="" type="checkbox"/> ANSI X3.4 | <input type="checkbox"/> ISO 10646 (UCS-4) |
| <input type="checkbox"/> IBM™/Microsoft™ DBCS | <input type="checkbox"/> ISO 10646 (UCS-2) |
| <input type="checkbox"/> JIS C 6226 | <input type="checkbox"/> ISO 8859-1 |

Gateway:

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