

NB-GPC Family

Protocol Implementation Conformance Statement (PICS)

Vendor Name: American Auto-Matrix
Product Name: NB-GPC Family
Product Model Number: NB-GPC1, NB-GPC2, NB-GPC3, NB-GPC4
Firmware Revision: 2.00
BACnet Protocol Revision: 4

Product Description:

NB-GPC controllers are powerful, and scalable advanced application controllers designed to provide superior flexibility through both software and hardware I/O when it is needed the most. Providing complete stand-alone control as well as full peer-to-peer networking capabilities, NB-GPC products can be programmed to perform building automation control routines. This can be achieved through the use of built-in logic blocks, as well as traditional custom programming.

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	AE-N-I-B	DM-PT-A
DS-RP-B	AE-INFO-B	DM-PT-B
DS-RPM-B	AE-ACK-B	DM-TS-A
DS-WP-A	AE-ASUM-B	DM-TS-B
DS-WP-B	SCHED-I-B	DM-UTC-B
DS-WPM-B	DM-DCC-B	DM-RD-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 & Deletable Objects:

NONE

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Properties:

Bold indicates writable properties

Italics indicates optional properties

Device:

Object-identifier

Object-name

Object-type

System-status

Vendor-name

Vendor-id

Model-name

Firmware-revision

Application-software-revision

Protocol-version

Protocol-revision

Protocol-services-supported

Protocol-object-types-supported

Object-list

Max-apdu-length

Segmentation-supported

Local-time

Local-date

Utc-offset

Daylight-savings-status

Apdu-timeout

Number-of-apdu-retries

Max-master

Max-info-frames

Time-synchronization-recipients

Device-address-binding

Database-revision

Profile-name

Analog Input:

Object-identifier

Object-name

Object-type

Present-value

Status-flags

Event-state

Out-of-service

Units

Min-pres-value

Max-pres-value

Reliability

Resolution

Time-delay

Notification-class

High-limit

Low-limit

Deadband

Limit-enable

Event-enable

Acked-transitions

Notify-type

Event-time-stamps

Profile-name

Analog Output:

Object-identifier

Object-name

Object-type

Present-value

Status-flags

Event-state

Out-of-service

Units

Min-pres-value

Max-pres-value

Priority-array

Relinquish-default

Time-delay

Notification-class

High-limit

Low-limit

Deadband

Limit-enable

Event-enable

Acked-transitions

Notify-type

Event-time-stamps

Profile-name

Analog Value:

Object-identifier

Object-name

Object-type

Present-value

Status-flags

Event-state

Out-of-service

Units

Priority-array

Relinquish-default

Notification-class

High-limit

Low-limit

Limit-enable

Acked-transitions

Notify-type

Event-time-stamps

Profile-name

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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
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

Program:

Object-identifier
Object-name
Object-type
Program state

Program-change
Reason-for-halt
Description-of-halt
Program-location

Status-flags
Out-of-service
Profile-name

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Schedule:

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

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 Delay	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
52568	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

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 (BI, 1 thru BI, 24 only)	Unsigned
51017	GID	Unsigned
51491	Input Index	Unsigned
51526	Filt Delay (BI, 1001 thru BI, 1008 only)	Unsigned
52548	Pulse Count Mode	Unsigned
52816	Pulse Accumulated	Unsigned
54086	Pulse Multiplier	Real
54102	Scaled Pulse Count	Real

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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

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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
42308	Register D	NULL
42309	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.)

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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).