

PROTOCOL IMPLEMENTATION
CONFORMANCE
STATEMENT (PICS)



AUTO-FLOW CRITICAL ENVIRONMENTS PRODUCT FAMILY

Vendor Name: American Auto-Matrix

Product Name: Auto-Flow Critical Environments Product Family

Product Model Number: NB-GPC-FHC x, NB-GPC-LAB x (*x = model variant*)

Firmware Revision: 2.00

BACnet Protocol Revision: 4

Product Description:

Utilizing similar technology found in the popular NB-GPC product family, the Auto-Flow Critical Environments product family are BACnet-compliant lab and fume hood controllers, designed to provide dedicated closed-loop control for laboratory and fume hoods. Utilizing patented control methodologies, Auto-Flow BACnet controllers provide time-critical, life safety control when it is needed the most.

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-DCC-B |
| DS-RP-B | AE-INFO-B | DM-PT-A |
| DS-RPM-B | AE-ACK-B | DM-PT-B |
| DS-WP-A | AE-ASUM-B | DM-TS-A |
| DS-WP-B | SCHED-I-B | DM-TS-B |
| DS-WPM-B | | DM-UTC-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 Objects

None

Dynamically Deletable Objects

None

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
deadband
limit-enable
acked-transitions
notify-type
event-time-stamps
profile-name

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

Schedule

object-identifier
object-name
object-type
present-value
effective-period
weekly-schedule
exception-schedule
schedule-default
list-of-object-property-references
priority-for-writing
status-flags
reliability
out-of-service
profile-name

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,1001thru BI,1008 only) | 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 |

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 |

SCHEDULE

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

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.

- | | |
|---|--|
| <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).