BACnet Protocol Implementation Conformance Statement
I/O Pro 812u

Date: **2/17/2014**
Vendor Name: **OEMCtrl**
Product Name: **I/O Pro 812u**
Product Model Number: **I/O Pro 812u**
Applications Software Version: **<user specified>**   Firmware Revision: **6.00**
BACnet Protocol Revision: **9**

Product Description:
The I/O Pro 812u is a general-use controller that you can easily customize to meet any sequence of operation. Fully capable of operating in a 100% stand-alone control mode, the I/O Pro 812u can connect to a Building Automation System (BAS) using any of today's four leading protocols: BACnet (IP, Ethernet, ARC156, MS/TP, and PTP), Modbus RTU, N2, and LonWorks. The point mapping to all of these protocols can be pre-set, so that the protocol and baud rates can be easily selected in the field without any additional downloads or technician assistance. The I/O Pro 812u provides input/output capacity on the base controller, plus support for multiple expansion boards if additional I/O capacity is needed.

BACnet Standardized Device Profile (Annex L):

☐ **BACnet Operator Workstation (B-OWS)**
☐ **BACnet Advanced Operator Workstation (B-AWS)**
☐ **BACnet Operator Display (B-OD)**
☒ **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)**

List all BACnet Interoperability Building Blocks Supported (Annex K):

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

Segmentation Capability:

☒ Able to transmit segmented messages   Window Size _____1_____
☒ Able to receive segmented messages   Window Size _____1_____

Standard Object Types Supported :

An object type is supported if it may be present in the device. For each standard Object Type supported provide the following data:

    1) Whether objects of this type are dynamically creatable using the CreateObject service

    2) Whether objects of this type are dynamically deletable using the DeleteObject service

    3) List of the optional properties supported

    4) List of all properties that are writable where not otherwise required by this standard

    5) List of all properties that are conditionally writable where not otherwise required by this standard.

    6) List of proprietary properties and for each its property identifier, datatype, and meaning

    7) List of any property range restrictions

(List of object types starts on page 4 …)

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, EIA-485 ARCNET (Clause 8), baud rate(s) **156k baud**
☒ MS/TP master (Clause 9), baud rate(s): **9600, 19200, 38400, 76800**
☐ MS/TP slave (Clause 9), baud rate(s): _____
☒ Point-To-Point, EIA 232 (Clause 10), baud rate(s): **9600, 19200, 38400, 57600, 115200**
☒ Point-To-Point, modem, (Clause 10), baud rate(s): **9600, 19200, 38400, 57600, 115200**
☐ LonTalk, (Clause 11), medium: _____
☐ BACnet/Zigbee (Annex O) _____
☐ Other: _____

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.) ☒Yes   ☐ No

Networking Options:

☒ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
Ethernet-UDP/IP, Ethernet-PTP, BACnet/IP-UDP/IP, BACnet/IP-PTP, Ethernet-BACnet/IP, Ethernet-BACnet/IP-UDP/IP, Ethernet-BACnet/IP-PTP, ARCNET-UDP/IP, ARCNET-PTP, Ethernet-ARCNET, Ethernet-ARCNET-UDP/IP, Ethernet-ARCNET-PTP, BACnet/IP-ARCNET, BACnet/IP-ARCNET-UDP/IP, BACnet/IP-ARCNET-PTP, Ethernet-BACnet/IP-ARCNET, Ethernet-BACnet/IP-ARCNET-UDP/IP, Ethernet-BACnet/IP-ARCNET-PTP, MS/TP-UDP/IP, MS/TP-PTP, Ethernet-MS/TP, Ethernet-MS/TP-UDP/IP, Ethernet-MS/TP-PTP, BACnet/IP-MS/TP, BACnet/IP-MS/TP-UDP/IP, BACnet/IP-MS/TP-PTP, Ethernet-BACnet/IP-MS/TP, Ethernet-BACnet/IP-MS/TP-UDP/IP, Ethernet-BACnet/IP-MS/TP-PTP

☒ Annex H, BACnet Tunneling Router over IP
☒ BACnet/IP Broadcast Management Device (BBMD)
    Does the BBMD support registrations by Foreign Devices?   ☒ Yes ☐ No
    Does the BBMD support network address translation?   ☐ Yes   ☒ No

Character Sets Supported:

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

☒ANSI X3.4   ☒ IBM™/Microsoft™ DBCS   ☒ ISO 8859-1
☒ISO 10646 (UCS-2)   ☒ISO 10646 (UCS-4)   ☒JIS C 6226

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports: Various protocols, depending on which firmware is loaded.

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)

Analog Input:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

   acked-transitions
   cov-increment
   deadband
   description
   device-type
   event-enable
   event-time-stamps
   high-limit
   limit-enable
   low-limit
   max-pres-value
   min-pres-value
   notification-class
   notify-type
   reliability
   resolution
   time-delay
   update-interval

4. Writeable properties:

   cov-increment
   deadband
   description
   device-type
   event-enable
   high-limit
   limit-enable
   low-limit
   notification-class
   notify-type
   out-of-service
   time-delay
   units

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
device-type	limited to 50 octets in length
present-value	limited by min-pres-value and max-pres-value properties
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Analog Input (ASVI_CS):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

    acked-transitions

    cov-increment

    Deadband

    description

    device-type

    event-enable

    event-time-stamps

    high-limit

    limit-enable

    low-limit

    notification-class

    notify-type

    Reliability

    Resolution

    time-delay
4. Writeable properties:

    cov-increment

    Deadband

    description

    device-type

    event-enable

    high-limit

    limit-enable

    low-limit

    notification-class

    notify-type

    out-of-service

    time-delay

    units

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties:

    | 4168 | optional/writable | cs-comb-algorithm |
    | 4169 | optional/writable | cs-disp-source |
    | 4170 | optional/writable | cs-sens-enable-arr |
    | 4173 | optional/ | cs-corrected-value-arr |
    | 4171 | optional | cs-sens-status-arr |
    | 4172 | optional/writable | cs-sens-calib-arr |

7. Range restrictions:

    | description | limited to 50 octets in length |
    | device-type | limited to 50 octets in length |
    | notification-class | must be valid notification-class |
    | time-delay | 0 to 4294967295 |

Analog Input (TLO):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   > acked-transitions
   > cov-increment
   > deadband
   > description
   > device-type
   > event-enable
   > event-time-stamps
   > high-limit
   > limit-enable
   > low-limit
   > max-pres-value
   > min-pres-value
   > notification-class
   > notify-type
   > reliability
   > resolution
   > time-delay
   > update-interval
4. Writeable properties:
   > cov-increment
   > deadband
   > description
   > device-type
   > event-enable
   > high-limit
   > limit-enable
   > low-limit
   > notification-class
   > notify-type
   > out-of-service
   > time-delay
   > units
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
device-type	limited to 50 octets in length
present-value	limited by min-pres-value and max-pres-value properties
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Analog Input (PTA):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

   acked-transitions
   cov-increment
   deadband
   description
   device-type
   Event-enable
   Event-time-stamps
   high-limit
   limit-enable
   low-limit
   max-pres-value
   min-pres-value
   notification-class
   notify-type
   reliability
   resolution
   time-delay
   update-interval
4. Writeable properties:

   cov-increment
   deadband
   description
   device-type
   event-enable
   high-limit
   limit-enable
   low-limit
   notification-class
   notify-type
   out-of-service
   time-delay
   units
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
device-type	limited to 50 octets in length
present-value	limited by min-pres-value and max-pres-value properties
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Analog Input (RS):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - acked-transitions
   - cov-increment
   - deadband
   - description
   - device-type
   - event-enable
   - event-time-stamps
   - high-limit
   - limit-enable
   - low-limit
   - max-pres-value
   - min-pres-value
   - notification-class
   - notify-type
   - reliability
   - resolution
   - time-delay
   - update-interval
4. Writeable properties:
   - cov-increment
   - deadband
   - description
   - device-type
   - event-enable
   - high-limit
   - limit-enable
   - low-limit
   - notification-class
   - notify-type
   - out-of-service
   - time-delay
   - units
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
device-type	limited to 50 octets in length
present-value	limited by min-pres-value and max-pres-value properties
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Analog Output:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

    acked-transitions

    cov-increment

    deadband

    description

    device-type

    event-enable

    event-time-stamps

    high-limit

    limit-enable

    low-limit

    max-pres-value

    min-pres-value

    notification-class

    notify-type

    reliability

    resolution

    time-delay

4. Writeable properties:

    cov-increment

    deadband

    description

    device-type

    event-enable

    high-limit

    limit-enable

    low-limit

    notification-class

    notify-type

    out-of-service

    present-value

    relinquish-default

    time-delay

    units

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
device-type	limited to 50 octets in length
present-value	limited by min-pres-value and max-pres-value properties
relinquish-default	limited by min-pres-value and max-pres-value properties
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Analog Output (FM):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

> acked-transitions
> cov-increment
> deadband
> description
> device-type
> event-enable
> event-time-stamps
> high-limit
> limit-enable
> low-limit
> max-pres-value
> min-pres-value
> notification-class
> notify-type
> reliability
> resolution
> time-delay

4. Writeable properties:

> cov-increment
> deadband
> description
> device-type
> event-enable
> high-limit
> limit-enable
> low-limit
> notification-class
> notify-type
> out-of-service
> present-value
> relinquish-default
> time-delay
> units

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

> | description | limited to 50 octets in length |
> |---|---|
> | device-type | limited to 50 octets in length |
> | present-value | limited by min-pres-value and max-pres-value properties |
> | relinquish-default | limited by min-pres-value and max-pres-value properties |
> | notification-class | must be valid notification-class |
> | time-delay | 0 to 4294967295 |

Analog Output (PWM):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - acked-transitions
   - cov-increment
   - deadband
   - description
   - device-type
   - event-enable
   - event-time-stamps
   - high-limit
   - limit-enable
   - low-limit
   - max-pres-value
   - min-pres-value
   - notification-class
   - notify-type
   - reliability
   - resolution
   - time-delay
4. Writeable properties:
   - cov-increment
   - deadband
   - description
   - device-type
   - event-enable
   - high-limit
   - limit-enable
   - low-limit
   - notification-class
   - notify-type
   - out-of-service
   - present-value
   - relinquish-default
   - time-delay
   - units
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
device-type	limited to 50 octets in length
present-value	limited by min-pres-value and max-pres-value properties
relinquish-default	limited by min-pres-value and max-pres-value properties
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Analog Value (AVP_CS):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - acked-transitions
   - cov-increment
   - Deadband
   - description
   - event-enable
   - event-time-stamps
   - high-limit
   - limit-enable
   - low-limit
   - notification-class
   - notify-type
   - priority-array
   - Reliability
   - relinquish-default
   - time-delay
4. Writeable properties:
   - cov-increment
   - Deadband
   - description
   - event-enable
   - high-limit
   - limit-enable
   - low-limit
   - notification-class
   - notify-type
   - out-of-service
   - present-value
   - relinquish-default
   - time-delay
   - units

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
present-value	limited by min and max set via the microblock
relinquish-default	limited by min and max set via the microblock
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Analog Value (AVP_CS_Setpoint):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

   cov-increment

   description

   Reliability

4. Writeable properties:

   cov-increment

   description

   out-of-service

   present-value

   units

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties:

4174	Private-edit-range-min	optional
4175	Private-edit-range-max	optional

7. Range restrictions:

description	limited to 50 octets in length
present-value	limited by min and max set via the microblock

Analog Value (AVS_CS_Setpoint):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
    cov-increment
    description
    Reliability

4. Writeable properties:
    cov-increment
    description
    out-of-service
    units

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:
    description   limited to 50 octets in length

Analog Value (PAR):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
    - acked-transitions
    - cov-increment
    - deadband
    - description
    - event-enable
    - event-time-stamps
    - high-limit
    - limit-enable
    - low-limit
    - notification-class
    - notify-type
    - priority-array
    - reliability
    - relinquish-default
    - time-delay
4. Writeable properties:
    - cov-increment
    - deadband
    - description
    - event-enable
    - high-limit
    - limit-enable
    - low-limit
    - notification-class
    - notify-type
    - out-of-service
    - present-value
    - relinquish-default
    - time-delay
    - units
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
present-value	limited by min-pres-value and max-pres-value properties
relinquish-default	limited by min-pres-value and max-pres-value properties
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Analog Value (PID):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

    description

    reliability
4. Writeable properties:

    description
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

    description   limited to 50 octets in length

Analog Value (RS):
1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

    reliability

    cov-increment
4. Writeable properties:

    out-of-service

    present-value

    units

    cov-increment
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions: None

Analog Value (STAT):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

    acked-transitions
    cov-increment
    deadband
    description
    event-enable
    event-time-stamps
    high-limit
    limit-enable
    low-limit
    notification-class
    notify-type
    reliability
    time-delay

4. Writeable properties:

    cov-increment
    deadband
    description
    event-enable
    high-limit
    limit-enable
    low-limit
    notification-class
    notify-type
    out-of-service
    time-delay
    units

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Input:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

    acked-transitions

    active-text

    alarm-value

    change-of-state-count

    change-of-state-time

    description

    device-type

    elapsed-active-time

    event-enable

    event-time-stamps

    inactive-text

    notification-class

    notify-type

    reliability

    time-delay

    time-of-active-time-reset

    time-of-state-count-reset

4. Writeable properties:

    active-text

    alarm-value

    change-of-state-count

    description

    device-type

    elapsed-active-time

    event-enable

    inactive-text

    notification-class

    notify-type

    out-of-service

    polarity

    time-delay

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

active-text	limited to 50 octets in length
change-of-state-count	0 to 4294967295
description	limited to 50 octets in length
device-type	limited to 50 octets in length
elapsed-active-time	0 to 4294967295
inactive-text	limited to 50 octets in length
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Output:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

      acked-transitions

      active-text

      change-of-state-count

      change-of-state-time

      description

      device-type

      elapsed-active-time

      event-enable

      event-time-stamps

      feedback-value

      inactive-text

      minimum-off-time

      minimum-on-time

      notification-class

      notify-type

      reliability

      time-delay

      time-of-active-time-reset

      time-of-state-count-reset

4. Writeable properties:

      active-text

      change-of-state-count

      description

      device-type

      elapsed-active-time

      event-enable

      inactive-text

      minimum-off-time

      minimum-on-time

      notification-class

      notify-type

      out-of-service

      polarity

      present-value

      relinquish-default

      time-delay

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

active-text	limited to 50 octets in length
change-of-state-count	0 to 4294967295
description	limited to 50 octets in length
device-type	limited to 50 octets in length
elapsed-active-time	0 to 4294967295

inactive-text	limited to 50 octets in length
minimum-off-time	0 to 4294967295
minimum-on-time	0 to 4294967295
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Value (BVP_CS):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - acked-transitions
   - active-text
   - alarm-value
   - change-of-state-count
   - change-of-state-time
   - description
   - elapsed-active-time
   - event-enable
   - event-time-stamps
   - inactive-text
   - minimum-off-time
   - minimum-on-time
   - notification-class
   - notify-type
   - priority-array
   - reliability
   - relinquish-default
   - time-delay
   - time-of-active-time-reset
   - time-of-state-count-reset
4. Writeable properties:
   - active-text
   - alarm-value
   - change-of-state-count
   - description
   - elapsed-active-time
   - event-enable
   - inactive-text
   - minimum-off-time
   - minimum-on-time
   - notification-class
   - notify-type
   - out-of-service
   - present-value
   - relinquish-default
   - time-delay

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

active-text	limited to 50 octets in length
change-of-state-count	0 to 4294967295
description	limited to 50 octets in length

elapsed-active-time	0 to 4294967295
inactive-text	limited to 50 octets in length
minimum-off-time	0 to 4294967295
minimum-on-time	0 to 4294967295
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Value (BVP_CS_Momentary):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   > acked-transitions
   > active-text
   > alarm-value
   > change-of-state-count
   > change-of-state-time
   > description
   > elapsed-active-time
   > event-enable
   > event-time-stamps
   > inactive-text
   > minimum-off-time
   > minimum-on-time
   > notification-class
   > notify-type
   > priority-array
   > reliability
   > relinquish-default
   > time-delay
   > time-of-active-time-reset
   > time-of-state-count-reset
4. Writeable properties:
   > active-text
   > alarm-value
   > change-of-state-count
   > description
   > elapsed-active-time
   > event-enable
   > inactive-text
   > notification-class
   > notify-type
   > out-of-service
   > present-value
   > relinquish-default
   > time-delay

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties:

4176	optional	cs_momentary_state

7. Range restrictions:

active-text	limited to 50 octets in length
change-of-state-count	0 to 4294967295
description	limited to 50 octets in length
elapsed-active-time	0 to 4294967295
inactive-text	limited to 50 octets in length

notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Value (PAR):

8. Creatable? NO
9. Deletable? NO
10. Optional properties supported:
> acked-transitions
>
> active-text
>
> alarm-value
>
> change-of-state-count
>
> change-of-state-time
>
> description
>
> elapsed-active-time
>
> event-enable
>
> event-time-stamps
>
> inactive-text
>
> minimum-off-time
>
> minimum-on-time
>
> notification-class
>
> notify-type
>
> priority-array
>
> reliability
>
> relinquish-default
>
> time-delay
>
> time-of-active-time-reset
>
> time-of-state-count-reset

11. Writeable properties:
> active-text
>
> alarm-value
>
> change-of-state-count
>
> description
>
> elapsed-active-time
>
> event-enable
>
> inactive-text
>
> minimum-off-time
>
> minimum-on-time
>
> notification-class
>
> notify-type
>
> out-of-service
>
> present-value
>
> relinquish-default
>
> time-delay

12. Conditionally writeable properties where not otherwise required by the standard: None
13. Proprietary properties: None
14. Range restrictions:

active-text	limited to 50 octets in length
change-of-state-count	0 to 4294967295
description	limited to 50 octets in length
elapsed-active-time	0 to 4294967295
inactive-text	limited to 50 octets in length

minimum-off-time	0 to 4294967295
minimum-on-time	0 to 4294967295
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Value (CLOCK):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
>acked-transitions
>active-text
>alarm-value
>change-of-state-count
>change-of-state-time
>description
>elapsed-active-time
>event-enable
>event-time-stamps
>inactive-text
>minimum-off-time
>minimum-on-time
>notification-class
>notify-type
>priority-array
>reliability
>relinquish-default
>time-delay
>time-of-active-time-reset
>time-of-state-count-reset
4. Writeable properties:
>active-text
>alarm-value
>change-of-state-count
>description
>elapsed-active-time
>event-enable
>inactive-text
>minimum-off-time
>minimum-on-time
>notification-class
>notify-type
>out-of-service
>present-value
>relinquish-default
>time-delay
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

active-text	limited to 50 octets in length
change-of-state-count	0 to 4294967295
description	limited to 50 octets in length
elapsed-active-time	0 to 4294967295
inactive-text	limited to 50 octets in length

minimum-off-time	0 to 4294967295
minimum-on-time	0 to 4294967295
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Value (STAT):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

    acked-transitions

    active-text

    alarm-value

    change-of-state-count

    change-of-state-time

    description

    elapsed-active-time

    event-enable

    inactive-text

    minimum-off-time

    minimum-on-time

    notification-class

    notify-type

    reliability

    time-delay

    time-of-active-time-reset

    time-of-state-count-reset

    event-time-stamp

4. Writeable properties:

    active-text

    alarm-value

    change-of-state-count

    description

    elapsed-active-time

    event-enable

    inactive-text

    minimum-off-time

    minimum-on-time

    notification-class

    notify-type

    out-of-service

    time-delay

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

active-text	limited to 50 octets in length
change-of-state-count	0 to 4294967295
description	limited to 50 octets in length
elapsed-active-time	0 to 4294967295
inactive-text	limited to 50 octets in length
minimum-off-time	0 to 4294967295
minimum-on-time	0 to 4294967295
notification-class	must be valid notification-class
time-delay	0 to 4294967295

Binary Value (MODULE ALARM):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - acked-transitions
   - alarm-value
   - description
   - event-enable
   - event-time-stamps
   - notification-class
   - notify-type
   - time-delay
4. Writeable properties:
   - alarm-value
   - event-enable
   - notification-class
   - notify-type
   - out-of-service
   - time-delay
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

notification-class	must be valid notification-class
time-delay	0 to 4294967295

Calendar:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - description
4. Writeable properties:
   - date-list
   - description
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

date-list	limited to 30 BACnetCalendarEntrys
description	limited to 50 octets in length

Device:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   active-cov-subscriptions
   active-vt-sessions
   apdu-segment-timeout
   backup-failure-timeout
   configuration-files
   database-revision
   description
   last-restore-time
   list_of_session_keys
   local_date
   local_time
   location
   max-segments-accepted
   vt-classes-supported
   utc-offset
   max-master
   max-info-frames
   last-restart-reason
   time-of-device-restart
   restart-notification-recipients

4. Writeable properties:
   object-identifier
   object-name
   location
   description
   local-time
   local-date
   utc-offset
   apdu-segment-timeout
   apdu-timeout
   number-of-apdu-retries
   max-master
   max-info-frames
   last-restart-reason
   restart-notification-recipients
   backup-failure-timeout

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties:

Property no.	Property name	Data Type
4149	auto-identity-scheme	enumerated
4150	auto-identity-base	unsigned
4153	serial-number	char string
4161	array-of-mstp-baud-rates	array of unsigned
4162	test-mode	enumerated
4166	download-id	char string

4167	file-store-size	unsigned
4901	archive-valid-status	enumerated
4902	archive-now-trigger	bool
4920	lonworks-enable-metric-conversion	bool

7. Range restrictions:

description	limited to 50 octets in length
location	limited to 50 octets in length
max-master	1 to 127
object-identifier	must be a valid device identifier
object-name	limited to 50 octets in length
utc-offset	-780 to 780
last-restart-reason	limited to BACnetRestartReason
restart-notification-recipients	0 to 10 BACnetRecipients
auto-identity-scheme	0 or 1
auto-identity-base	0 to 4294967295

File:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   description
4. Writeable properties:
   archive
   description
   file-type
   file-size
   modification-date
   read-only
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
file-type	limited to 50 octets in length

Loop Object (BACnet PID):

1.   Creatable? No
2.   Deletable? No
3.   Optional properties supported:
        Description
        Update_interval
        Proportional_constant
        Proportional_constant_units
        Integral_constant
        Integral_constant_units
        Derivative_constant
        Derivative_constant_units
        Bias
        COV_increment
4.   Writable properties:
        Description
        Update_interval
        Action
        Proportional_constant
        Integral_constant
        Derivative_constant
        Bias

5.   Conditionally writeable properties where not otherwise required by the standard: None

6.   Proprietary properties:
        Continuous_proportional
        Deadband
        Ramp_time
7.   Range Restriction:

Property no.	Property name	Property Restrictions	DataType
4163	Continuous_proportional	Can only be 0 or 1	Boolean
4164	Deadband	Must be >=0	Real
4165	Ramp_time	Must be >=0	Real

Multi-State Value (MSVP_CS):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
    acked-transitions
    alarm-values
    description
    event-enable
    event-time-stamps
    fault-values
    notification-class
    notify-type
    priority-array
    reliability
    relinquish-default
    state-text
    time-delay
4. Writeable properties:
    alarm-values
    description
    event-enable
    fault-values
    notification-class
    notify-type
    out-of-service
    present-value
    relinquish-default
    time-delay

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
notification-class	must be valid notification-class
present-value	must be valid state
relinquish-default	must be valid state
time-delay	0 to 4294967295

Multi-State Value (MSVP_CS_ Momentary):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - acked-transitions
   - alarm-values
   - description
   - event-enable
   - event-time-stamps
   - fault-values
   - notification-class
   - notify-type
   - priority-array
   - reliability
   - relinquish-default
   - state-text
   - time-delay
4. Writeable properties:
   - alarm-values
   - description
   - event-enable
   - fault-values
   - notification-class
   - notify-type
   - out-of-service
   - present-value
   - relinquish-default
   - time-delay

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
notification-class	must be valid notification-class
present-value	must be valid state
relinquish-default	must be valid state
time-delay	0 to 4294967295

Multi-State Value (PAR):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   > acked-transitions
   > alarm-values
   > description
   > event-enable
   > event-time-stamps
   > fault-values
   > notification-class
   > notify-type
   > priority-array
   > reliability
   > relinquish-default
   > state-text
   > time-delay
4. Writeable properties:
   > alarm-values
   > description
   > event-enable
   > fault-values
   > notification-class
   > notify-type
   > out-of-service
   > present-value
   > relinquish-default
   > time-delay
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
notification-class	must be valid notification-class
present-value	must be valid state
relinquish-default	must be valid state
time-delay	0 to 4294967295

Multi-State Value (CLOCK):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - acked-transitions
   - alarm-values
   - description
   - event-enable
   - event-time-stamps
   - fault-values
   - notification-class
   - notify-type
   - priority-array
   - reliability
   - relinquish-default
   - state-text
   - time-delay
4. Writeable properties:
   - alarm-values
   - description
   - event-enable
   - fault-values
   - notification-class
   - notify-type
   - out-of-service
   - present-value
   - relinquish-default
   - time-delay
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
notification-class	must be valid notification-class
present-value	must be valid state
relinquish-default	must be valid state
time-delay	0 to 4294967295

Multi-State Value (STAT):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - acked-transitions
   - alarm-values
   - description
   - event-enable
   - event-time-stamps
   - fault-values
   - notification-class
   - notify-type
   - reliability
   - state-text
   - time-delay
4. Writeable properties:
   - alarm-values
   - description
   - event-enable
   - fault-values
   - notification-class
   - notify-type
   - out-of-service
   - time-delay
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
notification-class	must be valid notification-class
present-value	must be valid state
time-delay	0 to 4294967295

Notification Class:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   description
4. Writeable properties:
   ack-required
   description
   priority
   recipient-list
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions: None
   description   limited to 50 octets in length
   recipient-list   limited to 5 BACnetDestinations

Program:

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   description
   description-of-halt
   instance-of
   program-location
   reason-for-halt
   reliability
4. Writeable properties:
   description
   program-change
   program-location
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:
   description   limited to 50 octets in length
   program-location   limited to 50 octets in length

Schedule (ENUM):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   description
   exception-schedule
   weekly-schedule
4. Writeable properties:
   description
   effective-period
   exception-schedule
   priority-for-writing
   weekly-schedule
   list-of-prop-reference
   schedule-default
   reliability
   out-of-service
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties:
   schedule-names
7. Range restrictions:

description	limited to 50 octets in length
exception-schedule	limited to 30 BACnetSpecialEvents, each being limited to 6 BACnetTimeValues
present-value	0 to 4294967295
relinquish-default	0 to 4294967295
weekly-schedule	limited to 6 BACnetTimeValues per BACnetDailySchedule
schedule-default	0 to 4294967295
reliability	limited to 4 BACnetReliability
out-of-service	limited to Boolean
(557) schedule-names	limited to 800 octets in length

Schedule (UNS):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:
   - description
   - exception-schedule
   - weekly-schedule
4. Writeable properties:
   - description
   - effective-period
   - exception-schedule
   - priority-for-writing
   - weekly-schedule
   - list-of-prop-reference
   - schedule-default
   - reliability
   - out-of-service
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties:
   - schedule-names
7. Range restrictions:

description	limited to 50 octets in length
exception-schedule	limited to 30 BACnetSpecialEvents, each being limited to 6 BACnetTimeValues
present-value	0 to 4294967295
relinquish-default	0 to 4294967295
weekly-schedule	limited to 6 BACnetTimeValues per BACnetDailySchedule
schedule-default	0 to 4294967295
reliability	limited to 4 BACnetReliability
out-of-service	limited to Boolean
(557) schedule-names	limited to 800 octets in length

Trend-log (COV or polled):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

>   acked-transitions
>   client-cov-increment
>   cov-resubscription-interval
>   description
>   event-enable
>   event-time-stamps
>   log-device-object-property
>   log-interval
>   notification-class
>   notification-threshold
>   notify-type
>   records-since-notification
>   start-time
>   stop-time
>   last-notify-record
>   align-intervals
>   interval-offset
>   reliability

4. Writeable properties:

>   buffer-size
>   client-cov-increment
>   cov-resubscription-interval
>   Description
>   event-enable
>   log-enable
>   log-interval
>   notification-class
>   notification-threshold
>   notify-type
>   record-count
>   start-time
>   stop-time
>   stop-when-full

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
log-interval	0 to 4294967295
notification-class	must be valid notification-class
notification-threshold	0 to 4294967295
record-count	can only be written to 0
total-record-count	can only be written to 0
reliability	limited to 4 BACnetReliability

Trend-log (of a non-BACnet property, COV or polled):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

        acked-transitions
        client-cov-increment
        cov-resubscription-interval
        description
        event-enable
        event-time-stamps
        last-notify-record
        log-interval
        notification-class
        notification-threshold
        notify-type
        records-since-notification
        start-time
        stop-time
        align-intervals
        interval-offset
        reliability

4. Writeable properties:

        buffer-size
        client-cov-increment
        cov-resubscription-interval
        description
        event-enable
        log-enable
        log-interval
        notification-class
        notification-threshold
        notify-type
        record-count
        start-time
        stop-time
        stop-when-full

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
log_interval	0 to 4294967295
notification_class	must be valid notification_class
notification_threshold	0 to 4294967295
record_count	can only be written to 0
logging-type	limited to 3 BACnetLoggingType
align-intervals	limited to Boolean

interval-offset   0 to 4294967295 in hundredths of seconds
trigger   limited to Boolean
reliability   limited to 4 BACnetReliability

Trend-log (of a non-BACnet property, triggered):

1. Creatable? NO
2. Deletable? NO
3. Optional properties supported:

> acked-transitions
> client-cov-increment
> cov-resubscription-interval
> description
> event-enable
> event-time-stamps
> last-notify-record
> log-interval
> notification-class
> notification-threshold
> notify-type
> records-since-notification
> start-time
> stop-time
> reliability
> trigger

4. Writeable properties:

> buffer-size
> client-cov-increment
> cov-resubscription-interval
> description
> event-enable
> log-enable
> notification-class
> notification-threshold
> notify-type
> record-count
> start-time
> stop-time
> stop-when-full
> trigger

5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties: None
7. Range restrictions:

description	limited to 50 octets in length
log_interval	0 to 4294967295
notification_class	must be valid notification_class
notification_threshold	0 to 4294967295
record_count	can only be written to 0
logging-type	limited to 3 BACnetLoggingType
align-intervals	limited to Boolean
interval-offset	0 to 4294967295 in hundredths of seconds

trigger   limited to Boolean
reliability   limited to 4 BACnetReliability

Proprietary Object, AirFlow:

1. Creatable? No
2. Deletable? No
3. Optional properties supported:
   description
   device-type
   profile-name
   tab-tech-name
   tab-org-name
   display-name
   max-cool-flow
   max-cool-flow-ovr
   max-heat-flow
   min-occ-flow
   min-occ-flow-ovr
   min-unocc-flow
   tabs-pars-seal
   min-aux-heat-flow
   flow-at-one-inch
   flow-calibration
   sens-calibration
   lock-flags
   flow-setpt-lock
   aux-heat-lock
   damper-lock
   fan-lock
   auto-zero
   tab-mode
   last-tab-date
   air-source-obj-id
   par-prg-dev-id
   par-prg-obj-id
   loop-config
   sens-config
   damp-config
   status-flags
   reliability
   occupied-mode
   heat-mode
   fan-outpt
   cooling
   heating
   aux-heat
   damper
   flow-actual
   flow-setpoint
   air-flow-obj-id
   own-prg-obj-id
   flow-rawpct
   flow-rawsetpt
   moves-today
   moves-yesterday
   prop-stat-flags
   units
   ovr-flags

        lock-flags-bool
        prop-stat-flags-bool
        baf-version

4.   Writable properties:
        description
        device-type
        profile-name
        tab-tech-name
        tab-org-name
        display-name
        max-cool-flow
        max-cool-flow-ovr
        max-heat-flow
        min-occ-flow
        min-occ-flow-ovr
        min-unocc-flow
        tab-pars-seal
        min-aux-heat-flow
        flow-at-one-inch
        flow-calibration
        sens-calibration
        flow-setpt-lock
        aux-heat-lock
        damper-lock
        fan-lock
        auto-zero
        tab-mode
        last-tab-date
        lock-flags-bool

5.   Conditionally writeable properties where not otherwise required by the standard: None

6.   Proprietary properties:
        max-cool-flow
        max-heat-flow
        min-occ-flow
        min-unocc-flow
        min-aux-heat-flow
        flow-at-one-inch
        flow-calibration
        sens-calibration
        aux-heat-lock
        damper-lock
        flow-setpt-lock
        auto-zero
        tab-mode
        lock-flags
        par-prg-dev-id
        par-prg-obj-id
        air-source-obj-id
        occupied-mode
        heat-mode
        cooling
        heating
        aux-heat

  damper
  flow-actual
  flow-setpoint
  air-flow-obj-id
  loop-config
  sens-config
  damp-config
  flow-rawpct
  flow-rawsetpt
  moves-today
  moves-yesterday
  fan-lock
  fan-outpt
  prop-stat-flags
  tab-tech-name
  tab-org-name
  last-tab-date
  display-name
  own-prg-obj-id
  ovr-flags
  max-cool-flow-ovr
  min-occ-flow-ovr
  tab-pars-seal
  lock-flags-bool
  prop-stat-flags-bool
  baf-version

7. Range Restriction:

Property no.	Property name	Property Restrictions	DataType
4132	tab-tech-name	limited to 50 octets in length	Chrstr
4133	tab-org-name	limited to 50 octets in length	Chrstr
4135	display-name	limited to 50 octets in length	Chrstr
4096	max-cool-flow	Unrestricted	Real
4138	max-cool-flow-ovr	Unrestricted	Real
4097	max-heat-flow	Unrestricted	Real
4098	min-occ-flow	Unrestricted	Real
4139	min-occ-flow-ovr	Unrestricted	Real
4099	min-unocc-flow	Unrestricted	Real
4140	tab-pars-seal	Unrestricted	Date/Time
4100	min-aux-heat-flow	Unrestricted	Real
4101	flow-at-one-inch	Unrestricted	Real
4102	flow-calibration	Unrestricted	Real(Array of 4 values)
4103	sens-calibration	Unrestricted	Real(Array of 4 values)
4106	flow-setpt-lock	Unrestricted	Real
4104	aux-heat-lock	0 – 100	Real
4105	damper-lock	0 – 100	Real
4129	fan-lock	Unrestricted	Boolean
4107	auto-zero	Unrestricted	Boolean
4108	tab-mode	0-255 (Only 0 -8 is defined)	Byte
4134	last-tab-date	Unrestricted	Date/Time
4141	lock-flags-bool		BitStr
	description	limited to 50 octets in length	ChrStr
	device-type	limited to 50 octets in length	ChrStr
	profile-name	limited to 50 octets in length	ChrStr

Proprietary Object, Network Port:

1. Creatable? No
2. Deletable? No
3. Optional properties supported:
   ip-multicast-address
   ip-subnet-mask
   ip-default-gateway
   max-master
   max-info-frames
   time-sync-interval
4. Writable properties:
   network-number
   mac-address
   ip-multicast-address
   ip-subnet-mask
   ip-default-gateway
   instance-of
   auto-identity-base
   auto-identity-scheme
   network-port-base
   max-master
   max-info-frames
   device-time-sync-mode
   time-sync-interval
5. Conditionally writeable properties where not otherwise required by the standard: None
6. Proprietary properties:
   network-type
   network-number
   mac-address
   ip-multicast-address
   ip-subnet-mask
   ip-default-gateway
   auto-identity-base
   auto-identity-scheme
   network-port-base
   device-time-sync-mode
7. Range Restriction:

Property no.	Property name	Property Restrictions	DataType
624	network-type		Unsigned
622	network-number	0 – 65535	Unsigned
621	mac-address	limited to 6 octets in length	Chrstr
607	ip-multicast-address	limited to 4 octets in length	Chrstr
608	ip-subnet-mask	limited to 4 octets in length	Chrstr
601	ip-default-gateway	limited to 4 octets in length	Chrstr
4150	auto-identity-base	0 - 4294967295	Unsigned
4149	auto-identity-scheme	0 - 255	Enum
600	network-port-base		Chrstr
660	device-time-sync-mode	0 - 2	Enum