

Date: **12/08/2011**
 Vendor Name: **OEMCtrl**
 Product Name: **UPC, XPC**
 Product Model Number: **UPC, XPC**
 Applications Software Version: **<user specified>** Firmware Revision: **4.02**
 BACnet Protocol Revision: **9**

Product Description:

The UPC (Unitary Protocol Converter) can convert between two open protocols, or from a proprietary protocol to an open protocol, to integrate with virtually any Building Automation System. One of the unique things about the UPC is the ability to select the open protocol you want with the simple flip of a DIP switch. Choose from BACnet, Modbus, N2 Bus, or LonWorks. The UPC also offers the ability to plug in an optional backlit LCD display/keyboard to allow you to view any of the points in your system.

The XPC (Unitary Protocol Converter) sets a new standard for multiple equipment protocol conversion. It can convert between two open protocols, or from a proprietary protocol to an open protocol, to integrate with virtually any Building Automation System. One of the unique things about the XPC is the ability to select the open protocol you want with the simple flip of a DIP switch. Choose from BACnet, Modbus, N2 Bus, or LonWorks. The XPC also offers the ability to plug in an optional backlit LCD display/keyboard to allow you to view any of the points in your system.

BACnet Standardized 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)

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		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				DM-LM-B
DS-WPM-A				DM-R-B

Segmentation Capability:

- Able to transmit segmented messages
 - Able to receive segmented messages
- Window Size _____ 1 _____
 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 proprietary properties and for each its property identifier, datatype, and meaning
 - 6) List of any property range restrictions
- (List of object types starts on page 3 ...)**

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) **156k baud**_
- MS/TP master (Clause 9), baud rate(s): **9600, 19200, 38400, 78600**_
- 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: _____
- 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.
- 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.

- 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.

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. Proprietary properties: None
6. 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 (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. Proprietary properties: None
6. 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. Proprietary properties: None
6. Range restrictions:

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

Binary Value (PAR):

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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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. Proprietary properties: None
6. Range restrictions:
date-list limited to 30 BACnetCalendarEntry
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
 - multi-max-master
 - multi-max-info-frames
 - multi-mstp-network-numbers
 - description
 - last-restore-time
 - list_of_session_keys
 - local_date
 - local_time
 - location
 - max-segments-accepted
 - vt-classes-supported
 - utc-offset
 - time-synchronization-recipients
 - max-master
 - max-info-frames
 - last-restart-reason
 - time-of-device-restart
 - restart-notification-recipients
 - utc-time-synchronization-recipients
 - time-synchronization-interval
 - align-intervals
 - interval-offset
4. Writeable properties:
 - object-identifier
 - object-name
 - location
 - description
 - local-time
 - local-date
 - utc-offset
 - apdu-segment-timeout
 - apdu-timeout
 - number-of-apdu-retries
 - time-recipient
 - max-master
 - max-master-frames
 - multi-max-master
 - multi-max-info-frames
 - backup-failure-timeout
 - last-restart-reason

restart-notification-recipients
utc-time-synchronization-recipients
time-synchronization-interval
align-intervals
interval-offset

5. Proprietary properties:

Property no.	Property name
4146	file-free-size
4147	file-overhead-size
4149	auto-identity-scheme
4150	auto-identity-base
4153	serial-number
4162	test-mode

6. 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
last-restart-reason	limited to BACnetRestartReason

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. Proprietary properties: None

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

Property no.	Property name	Property Restrictions	Data Type
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 (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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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

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. Proprietary properties: None
6. 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

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. Proprietary properties: None
6. 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. Proprietary properties: None
6. 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