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Honeywell ComfortPoint™ Plant Controller Protocol Implementation Conformance Statement (PICS)

Topic: BACnet Protocol Implementation Conformance
Statement (PICS)
Date: 27th August 2012
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Applicable Products ComfortPoint™ Plant Controller (CP-IPC)
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Honeywell ComfortPoint™ Open Plant Controller

Annex A - Protocol Implementation Conformance Statement

Date: 27th August 2012

Vendor Name: Honeywell International Inc.

Vendor ID: 17

Product Name: Honeywell ComfortPoint™ Plant Controller

Product Model Number: CP-IPC

Applications Software Version: N/A

Firmware Revision: 2.1 (or higher)

BACnet Protocol Revision: 9 (135-2010)

Product Description and Intended Use:

CP-IPC is an IP based Native BACnet® Network controller, which eliminates the need for additional router hardware and can support up to 90 MS/TP devices. Combined with the various I/O options available, it can meet the needs of complex Heating Ventilation Air Conditioning & Refrigeration (HVACR) applications.

CP-IPC is designed to meet the requirements of a BACnet B-BC (BACnet Building Controller) profile, supporting Device Management, Scheduling, and Trend Object functionality.

Powerful and yet easily programmable, it can operate stand-alone or networked to perform complex control, monitoring, and energy management functions.

This is ideally suitable for Central Plant control and complex HVACR / AHU control function.

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)

BACnet Interoperability Building Blocks Supported (Annex K):

| | | |
|--|---|-------------------------|
| Data Sharing | Read Property-A | DS-RP-A |
| | Read Property-B | DS-RP-B |
| | Read Property Multiple-A | DS-RPM-A |
| | Read Property Multiple-B | DS-RPM-B |
| | Write Property-A | DS-WP-A |
| | Write Property-B | DS-WP-B |
| | Write Property Multiple-A | DS-WPM-A |
| | Write Property Multiple-B | DS-WPM-B |
| | Change Of Value-B | DS-COV-B |
| | Alarm & Event Management | Notification Internal-B |
| Acknowledgement-B | | AE-ACK-B |
| Alarm Summary-B | | AE-ASUM-B |
| Enrollment Summary-B | | AE-ESUM-B |
| Event Information -B | | AE-INFO-B |
| Scheduling | Scheduling Internal-B | SCHED-I-B |
| | Scheduling -External-B | SCHED-E-B |
| Trending | Viewing and Modifying Trends Internal-B | T-VMT-I-B |
| | Automated Trend Retrieval-B | T-ATR-B |
| Device & Network Management | Dynamic Device Binding | DM-DDB-A |
| | Dynamic Device Binding | DM-DDB-B |
| | Dynamic Object Binding-B | DM-DOB-B |
| | Device Communication Control | DM-DCC-B |
| | Time Synchronization | DM-TS-B |
| | UTC Time Synchronization | DM-UTC-B |
| | Reinitialize Device | DM-RD-B |
| | Back-up and Restore-B | DM-BR-B |
| | Restart-B | DM-R-B |
| | List Manipulation-B | DM-LM-B |
| Object Creation and Deletion-B | DM-OCD-B | |
| Router Configuration-B | NM-RC-B | |

The following device binding methods are supported by the controller:

- Send Who-Is, receive I-Am (BIBB DM-DDB-A)
- Receive Who-Is, send I-Am (BIBB DM-DDB-B)
- Send Who-Has, receive I-Have (BIBB DM-DOB-A)
- Receive Who-Has, send I-Have (BIBB DM-DOB-B)
- Manual configuration of recipient device's network number and MAC address
- None of the above

Segmentation Capability:

Able to transmit segmented messages yes no Window Size 1

Able to receive segmented messages yes no Window Size 1

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):

- 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?
 (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.)
 Yes No

Networking Options:

- Router, Clause 6 - BACnet IP (Annex J) - MS/TP (3 MSTP Ports).
- 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.

- ISO 10646 (UTF-8) IBM™/Microsoft™ DBCS ISO 8859-1
- ISO 10646 (UCS-4) ISO 10646 (UCS-2) JIS X 0208

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)

Standard Object Types Supported:

| | Object supported | Object dynamically creatable | Object dynamically deletable |
|-------------------|------------------|------------------------------|------------------------------|
| ACCUMULATOR | Y | N | N |
| ANALOG_INPUT | Y | N | N |
| ANALOG_OUTPUT | Y | N | N |
| ANALOG_VALUE | Y | N | N |
| AVERAGING | N | N | N |
| BINARY_INPUT | Y | N | N |
| BINARY_OUTPUT | Y | N | N |
| BINARY_VALUE | Y | N | N |
| CALENDAR | Y | N | N |
| COMMAND | N | N | N |
| DEVICE | Y | N | N |
| EVENT_ENROLLMENT | N | N | N |
| FILE | Y | Y | Y |
| GROUP | N | N | N |
| LIFE_SAFETY_POINT | N | N | N |
| LIFE_SAFETY_ZONE | N | N | N |
| LOOP | N | N | N |

| | Object supported | Object dynamically creatable | Object dynamically deletable |
|--------------------|------------------|------------------------------|------------------------------|
| MULTISTATE_INPUT | N | N | N |
| MULTISTATE_OUTPUT | N | N | N |
| MULTISTATE_VALUE | Y | N | N |
| NOTIFICATION_CLASS | Y | N | N |
| PROGRAM | N | N | N |
| PULSE_CONVERTER | N | N | N |
| SCHEDULE | Y | N | N |
| TRENDLOG | Y | Y | Y |
| ACCESS_DOOR | N | N | N |
| EVENT_LOG | N | N | N |
| LOAD_CONTROL | N | N | N |
| STRUCTURED_VIEW | Y | Y | Y |
| TREND_LOG_MULTIPLE | N | N | N |

Standard Objects and Properties Supported:

Accumulator Object Properties

| Readable Properties | Writable Properties |
|---------------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| present-value | present-value |
| description | |
| status-flags | |
| event-state | |
| reliability | |
| out-of-service | out-of-service |
| scale | |
| units | |
| prescale | |
| max-pres-value | max-pres-value |
| value-change-time | |
| value-before-change | |
| value-set | value-set |
| pulse-rate | |
| high-limit | high-limit |
| low-limit | low-limit |
| limit-monitoring-interval | |
| notification-class | |
| time-delay | time-delay |
| limit-enable | limit-enable |
| event-enable | event-enable |
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

Analog Input Object Properties

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| present-value | present-value |
| description | |
| status-flags | |
| event-state | |
| reliability | |
| out-of-service | out-of-service |
| units | |
| cov-increment | cov-increment |
| time-delay | time-delay |
| notification-class | |
| high-limit | high-limit |
| low-limit | low-limit |
| deadband | deadband |
| limit-enable | limit-enable |
| event-enable | event-enable |
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

Analog Output Object Properties

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| present-value | present-value |
| description | |
| status-flags | |
| event-state | |
| reliability | |
| out-of-service | out-of-service |
| units | |
| priority-array | |
| relinquish-default | relinquish-default |
| cov-increment | cov-increment |
| time-delay | time-delay |
| notification-class | |
| high-limit | high-limit |
| low-limit | low-limit |
| deadband | deadband |
| limit-enable | limit-enable |
| event-enable | event-enable |
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

Analog Value Object Properties

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| present-value | present-value |
| description | |
| status-flags | |
| event-state | |
| reliability | |
| out-of-service | out-of-service |
| units | |
| priority-array | |
| relinquish-default | relinquish-default |
| cov-increment | cov-increment |
| time-delay | time-delay |
| notification-class | |
| high-limit | high-limit |
| low-limit | low-limit |
| deadband | deadband |
| limit-enable | limit-enable |
| event-enable | event-enable |
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

Binary Input Object Properties

| Readable Properties | Writable Properties |
|---------------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| present-value | present-value |
| description | |
| status-flags | |
| event-state | |
| reliability | |
| out-of-service | out-of-service |
| polarity | |
| inactive-text | |
| active-text | |
| elapsed-active-time | elapsed-active-time |
| time-of-active-time-reset | |
| time-delay | time-delay |
| notification-class | |
| alarm-value | alarm-value |
| event-enable | event-enable |
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

Binary Output Object Properties

| Readable Properties | Writable Properties |
|---------------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| present-value | present-value |
| description | |
| status-flags | |
| event-state | |
| reliability | |
| out-of-service | out-of-service |
| polarity | |
| inactive-text | |
| active-text | |
| elapsed-active-time | elapsed-active-time |
| time-of-active-time-reset | |
| priority-array | |
| relinquish-default | relinquish-default |
| time-delay | time-delay |
| notification-class | |
| feedback-value | feedback-value |
| event-enable | event-enable |
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

Binary Value Object Properties

| Readable Properties | Writable Properties |
|---------------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| present-value | present-value |
| description | |
| status-flags | |
| event-state | |
| reliability | |
| out-of-service | out-of-service |
| inactive-text | |
| active-text | |
| elapsed-active-time | elapsed-active-time |
| time-of-active-time-reset | |
| priority-array | |
| relinquish-default | relinquish-default |
| time-delay | time-delay |
| notification-class | |
| alarm-value | alarm-value |
| event-enable | event-enable |

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

Calendar Input Object Properties

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| description | |
| present-value | |
| date-list | date-list |

Device Object Properties

| Readable Properties | Writable Properties |
|---------------------------------|------------------------|
| object-identifier | |
| object-name | |
| object-type | |
| system-status | |
| vendor-name | |
| vendor-identifier | |
| model-name | |
| firmware-revision | |
| application-software-version | |
| location | |
| description | |
| protocol-version | |
| protocol-revision | |
| protocol-services-supported | |
| protocol-object-types-supported | |
| object-list | |
| Structured_Object_List | |
| max-apdu-length-accepted | |
| segmentation-supported | |
| max-segments-accepted | |
| local-time | |
| local-date | |
| utc-offset | |
| daylight-savings-status | |
| apdu-segment-timeout | |
| apdu-timeout | apdu-timeout |
| number-of-apdu-retries | |
| max-master | |
| max-info-frames | |
| device-address-binding | |
| database-revision | |
| configuration-files | |
| last-restore-time | |
| backup-failure-timeout | backup-failure-timeout |

| Readable Properties | Writable Properties |
|---------------------------------|---------------------|
| active-cov-subscriptions | |
| restart-notification-recipients | |
| time-of-device-restart | |
| last-restart-reason | |

File Object Properties

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| description | |
| file-type | file-type |
| file-size | file-size |
| modification-date | |
| archive | archive |
| read-only | read-only |
| file-access-method | |

Multi-State Value Object Properties

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| present-value | present-value |
| description | |
| status-flags | |
| event-state | |
| reliability | |
| out-of-service | out-of-service |
| number-of-states | |
| state-text | |
| priority-array | |
| relinquish-default | relinquish-default |
| time-delay | time-delay |
| notification-class | |
| alarm-values | alarm-values |
| fault-values | fault-values |
| event-enable | event-enable |
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

Notification Class Object Properties

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| object-identifier | |
| object-name | |

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| object-type | |
| description | |
| notification-class | |
| priority | priority |
| ack-required | ack-required |
| recipient-list | recipient-list |

Schedule Object Properties

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

Trend Log Object Properties

| Readable Properties | Writable Properties |
|----------------------------|----------------------------|
| object-identifier | |
| object-name | |
| object-type | |
| description | |
| enable | enable |
| start-time | start-time |
| stop-time | stop-time |
| log-device-object-property | log-device-object-property |
| log-interval | log-interval |
| client-cov-increment | |
| stop-when-full | stop-when-full |
| buffer-size | |
| record-count | record-count |
| total-record-count | |
| notification-threshold | notification-threshold |
| records-since-notification | |
| last-notify-record | |
| event-state | |
| notification-class | notification-class |
| event-enable | event-enable |
| acked-transitions | |
| notify-type | notify-type |
| event-time-stamps | |

| Readable Properties | Writable Properties |
|---------------------|---------------------|
| status-flags | |
| logging-Type | |
| log-buffer | |
| reliability | |

Structured View Object Properties

| Readable Properties | Writable Properties |
|-------------------------|---------------------|
| object-identifier | |
| object-name | |
| object-type | |
| description | |
| node-type | node-type |
| node-subtype | node-subtype |
| subordinate-list | |
| subordinate-annotations | |