# BACnet Server

Samsung NASA compatible Outdoor Units

## USER MANUAL

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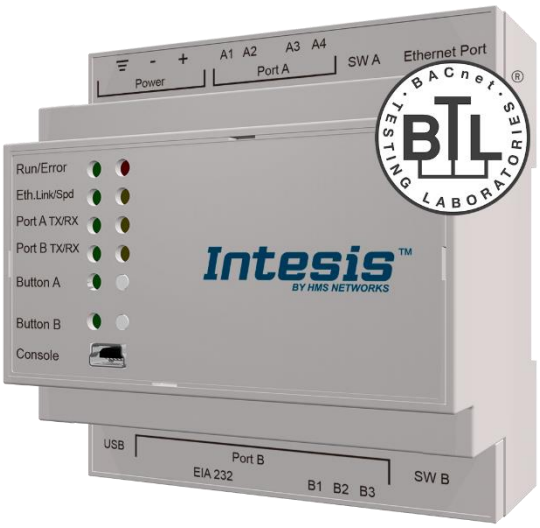


Connecting Devices

# Important User Information

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Gateway for the integration of Samsung NASA compatible systems into BACnet/IP or BACnet MSTP control and monitoring systems.

| ORDER CODES | LEGACY ORDER CODES |
|---|---|
| INBACSAM004O000 | SM-ACN-BAC-4 |
| INBACSAM008O000 | SM-ACN-BAC-8 |
| INBACSAM016O000 | SM-ACN-BAC-16 |
| INBACSAM064O000 | SM-ACN-BAC-64 |

# INDEX

# 1 Description

## 1.1 *Introduction*

This document describes the integration of Samsung NASA compatible air conditioning systems into BACnet compatible devices and systems using gateway *Intesis BACnet Server – Samsung NASA.*

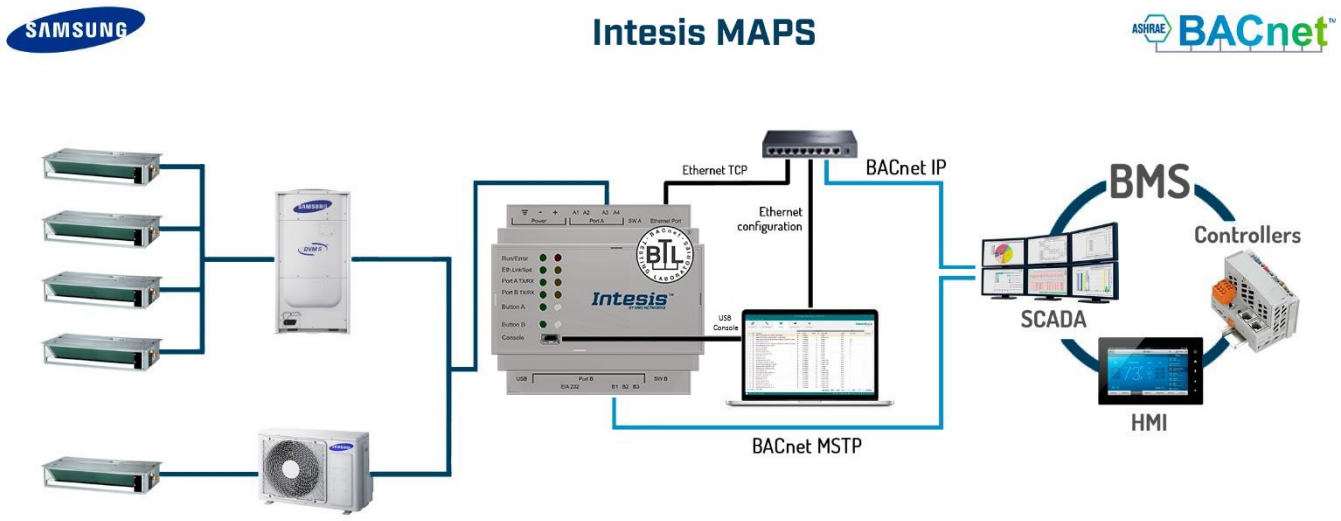
The aim of this integration is to monitor and control your Samsung air conditioning system, remotely, from your Control Center using any commercial SCADA or monitoring software that includes a BACnet/IP or BACnet MSTP driver. To do it so, Intesis allows BACnet/IP and BACnet MSTP communication, acting as a server (B-AAC profile), allowing polling or subscription requests (COV).

Intesis makes available the Samsung air conditioning system indoor units through independent BACnet objects.

Abstraction of Samsung air conditioning system properties and functionalities as fixed BACnet Objects. Intesis allows fixed BACnet object IDs mapping. Simple configuration is needed: just select the appropriate communication parameters (IP address, baud rate…).

Up to 64 indoor units supported, depending on product version.

This document assumes that the user is familiar with BACnet and Samsung technologies and their technical terms.




**Integration of Samsung NASA AC compatible systems into BACnet/IP or BACnet MSTP control systems**

**NOTE: Take following considerations into account for Samsung's NASA R1/R2 network:**

- Samsung NASA AC network allows for both automatic and manual addressing. **Manual addressing of both indoor and outdoor units must be setup by Samsung installer in order that Intesis communicates properly.** Manual addressing is setup by means of DIP switches in outdoor unit and using the remote controller or DIP switches in the indoor unit.
- Samsung NASA indoor units **need to be configured to accept 'central control'**. To do so, they need to be configured with so-called 'installation option code' in which segment 5 of this code needs to be set to value '1' to allow central control.

## *1.1 Functionality*

Intesis™ continuously monitors Samsung's NASA R1/R2 network for all configured signals and keeps the updated status of all of them in its memory, ready to be served when requested from the BACnet side.

Commands toward the R1/R2 indoor unit communication adaptor are permitted.

Each indoor unit is offered in set of BACnet objects.

| Element | Object supported |
|---|---|
| Outdoor Unit | • Communication status<br>• Addressing status |
| Indoor Unit | • Status<br>• Command<br>• Communication status |
| General signals (all units) | • Command |

## 1.2 *Capacity of Intesis*

| Element | Max. | Notes |
|---|---|---|
| Number of indoor units | 64 * | Number of indoor units that can be controlled through Intesis |
| Number of Objects | 2840 * | Number of Samsung NASA objects available into Intesis. |

* There are different models of *Intesis BACnet Server – Samsung NASA AC* each one with different capacity. The table above shows the capacity for the top model (with maximum capacity).

Their order codes are:

- INBACSAM004O000: Model supporting up to 4 indoor units
- INBACSAM008O000: Model supporting up to 8 indoor units
- INBACSAM016O000: Model supporting up to 16 indoor units
- INBACSAM064O000: Model supporting up to 64 indoor units

# 2 Protocol Implementation Conformance Statement

BACnet Protocol Implementation Conformance Statement (PICS)

**Date:** *2017-10-26*
**Vendor Name:** *HMS Industrial Networks S.L.U*
**Product Name:** *Intesis-BACnet-Samsung AC*
**Product Model Number:** *INBACSAM---O000*
**Application Software Version:** *0.0.0.2*
**Firmware Revision:** *12.1.0.3*
**BACnet Protocol Revision:** *12*

**Product Description:**

*SAMSUNG to BACnet Gateway*

Abstraction of Samsung air conditioning system properties and functionalities as BACnet Objects.
Capacity of 4, 8, 16 or 64 indoor units depending on product version.

## 2.1 *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)

Additional BACnet Interoperability Building Blocks Supported (Annex K):
*Reference of BIBBs List*

## 2.2 *Segmentation Capability:*

| | | | |
|---|---|---|---|
| Segmented request supported | ☐ No | ☒ Yes | Window Size · *16* · |
| Segmented responses supported | ☐ No | ☒ Yes | Window Size · *16* · |

## 2.3 *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) ____
- ☒ MS/TP master (Clause 9), baud rate(s): 9600, 19200, 38400, 57600, 76800, 115200
- ☐ 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:

## 2.4 *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

## 2.5 *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

## 2.6 *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-2) | ☐ ISO 10646 (UCS-4) | ☐ JIS X 0208 |

## 2.7 *Gateway*

If this product is a communication gateway, describe the types of non-BACnet equipment/network(s) that the gateway supports:

**Samsung NASA Air Conditioning System**

# 3 BACnet Interoperability Building Blocks Supported (BIBBs)

## 3.1 *Data Sharing BIBBs*

| BIBB Type | | Active | BACnet Service | Initiate | Execute |
|---|---|---|---|---|---|
| DS-RP-A | Data Sharing-ReadProperty–A | ☐ | ReadProperty | ☒ | ☐ |
| DS-RP-B | Data Sharing-ReadProperty–B | ☒ | ReadProperty | ☐ | ☒ |
| DS-RPM-A | Data Sharing-ReadPropertyMultiple–A | ☐ | ReadPropertyMultiple | ☒ | ☐ |
| DS-RPM-B | Data Sharing-ReadPropertyMultiple–B | ☒ | ReadPropertyMultiple | ☐ | ☒ |
| DS-RPC-A | Data Sharing-ReadPropertyConditiona–A | ☐ | ReadPropertyConditional | ☒ | ☐ |
| DS-RPC-B | Data Sharing-ReadPropertyConditional–B | ☐ | ReadPropertyConditional | ☐ | ☒ |
| DS-WP-A | Data Sharing-WriteProperty–A | ☐ | WriteProperty | ☒ | ☐ |
| DS-WP-B | Data Sharing-WriteProperty–B | ☒ | WriteProperty | ☐ | ☒ |
| DS-WPM-A | Data Sharing-WritePropertyMultiple–A | ☐ | WritePropertyMultiple | ☒ | ☐ |
| DS-WPM-B | Data Sharing-WritePropertyMultiple–B | ☒ | WritePropertyMultiple | ☐ | ☒ |
| DS-COV-A | Data Sharing-COV–A | ☐ | SubscribeCOV | ☒ | ☐ |
| | | ☐ | ConfirmedCOVNotification | ☐ | ☒ |
| | | ☐ | UnconfirmedCOVNotification | ☐ | ☒ |
| DS-COV-B | Data Sharing-COV–B | ☒ | SubscribeCOV | ☐ | ☒ |
| | | ☒ | ConfirmedCOVNotification | ☒ | ☐ |
| | | ☒ | UnconfirmedCOVNotification | ☒ | ☐ |
| DS-COVP-A | Data Sharing-COVP–A | ☐ | SubscribeCOVProperty | ☒ | ☐ |
| | | ☐ | ConfirmedCOVNotification | ☐ | ☒ |
| | | ☐ | UnconfirmedCOVNotification | ☐ | ☒ |
| DS-COVP-B | Data Sharing-COVP–B | ☐ | SubscribeCOVProperty | ☐ | ☒ |
| | | ☐ | ConfirmedCOVNotification | ☒ | ☐ |
| | | ☐ | UnconfirmedCOVNotification | ☒ | ☐ |
| DS-COVU-A | Data Sharing-COV-Unsubscribed–A | ☐ | UnconfirmedCOVNotification | ☐ | ☒ |
| DS-COVU-B | Data Sharing-COV- Unsubscribed -B | ☐ | UnconfirmedCOVNotification | ☒ | ☐ |

## 3.2 *Alarm and Event Management BIBBs*

| BIBB Type | | Active | BACnet Service | Initiate | Execute |
|---|---|---|---|---|---|
| AE-N-A | Alarm and Event-Notification–A | ☐ | ConfirmedEventNotification | ☐ | ☒ |
| | | ☐ | UnconfirmedEventNotification | ☐ | ☒ |
| AE-N-I-B | Alarm and Event-Notification Internal–B | ☒ | ConfirmedEventNotification | ☒ | ☐ |
| | | ☒ | UnconfirmedEventNotification | ☒ | ☐ |
| AE-N-E-B | Alarm and Event-Notification External–B | ☐ | ConfirmedEventNotification | ☒ | ☐ |
| | | ☐ | UnconfirmedEventNotification | ☒ | ☐ |
| AE-ACK-A | Alarm and Event-ACK–A | ☐ | AcknowledgeAlarm | ☒ | ☐ |
| AE-ACK-B | Alarm and Event-ACK–B | ☒ | AcknowledgeAlarm | ☐ | ☒ |
| AE-ASUM-A | Alarm and Event-Alarm Summary–A | ☐ | GetAlarmSummary | ☒ | ☐ |
| AE-ASUM-B | Alarm and Event-Alarm Summary–B | ☒ | GetAlarmSummary | ☐ | ☒ |
| AE-ESUM-A | Alarm and Event-Enrollment Summary-A | ☐ | GetEnrollmentSummary | ☒ | ☐ |
| AE-ESUM-B | Alarm and Event-Enrollment Summary-B | ☐ | GetEnrollmentSummary | ☐ | ☒ |
| AE-INFO-A | Alarm and Event-Information–A | ☐ | GetEventInformation | ☒ | ☐ |
| AE-INFO-B | Alarm and Event-Information–B | ☒ | GetEventInformation | ☐ | ☒ |
| AE-LS-A | Alarm and Event-LifeSafety–A | ☐ | LifeSafetyOperation | ☒ | ☐ |
| AE-LS-B | Alarm and Event-LifeSafety–B | ☐ | LifeSafetyOperation | ☐ | ☒ |

## 3.3 *Scheduling BIBBs*

| BIBB Type | | Active | BACnet Service | Initiate | Execute |
|---|---|---|---|---|---|
| SCHED-A | Scheduling–A<br>*(must support DS-RP-A and DS-WP-A)* | ☐ | | | |
| SCHED-I-B | Scheduling-Internal–B<br>*(shall support DS-RP-B and DS-WP-B)*<br>*(shall also support ether DM-TS-B or DS-UTC-B)* | ☒ | | | |
| SCHED-E-B | Scheduling-External–B<br>*(shall support SCHED-I-B and DS-WP-A)* | ☐ | | | |

## 3.4 *Trending BIBBs*

| BIBB Type | | Active | BACnet Service | Initiate | Execute |
|---|---|---|---|---|---|
| T-VMT-A | Trending - Viewing and Modifying Trends–A | ☐ | ReadRange | ☒ | ☐ |
| T-VMT-I-B | Trending - Viewing and Modifying Trends Inernal–B | ☒ | ReadRange | ☐ | ☒ |
| T-VMT-E-B | Trending - Viewing and Modifying Trends External–B | ☐ | ReadRange | ☐ | ☒ |
| T-ATR-A | Trending - Automated Trend Retrieval–A | ☐ | ConfirmedEventNotification | ☐ | ☒ |
| | | ☐ | ReadRange | ☒ | ☐ |
| T-ATR-B | Trending - Automated Trend Retrieval–B | ☒ | ConfirmedEventNotification | ☒ | ☐ |
| | | ☒ | ReadRange | ☐ | ☒ |

## 3.5 *Network Management BIBBs*

| BIBB Type | | Active | BACnet Service | Initiate | Execute |
|---|---|---|---|---|---|
| NM-CE-A | Network Management - Connection Establishment–A | ☐ | Establish-Connection-To-Network | ☒ | ☐ |
| | | ☐ | Disconnect-Connection-To-Network | ☒ | ☐ |
| NM-CE-B | Network Management - Connection Establishment– B | ☐ | Establish-Connection-To-Network | ☐ | ☒ |
| | | ☐ | Disconnect-Connection-To-Network | ☐ | ☒ |
| NM-RC-A | Network Management - Router Configuration–A | ☐ | Who-Is-Router-To-Network | ☒ | ☐ |
| | | ☐ | I-Am-Router-To-Network | ☐ | ☒ |
| | | ☐ | I-Could-Be-Router-To-Network | ☐ | ☒ |
| | | ☐ | Initialize-Routing-Table | ☒ | ☐ |
| | | ☐ | Initialize-Routing-Table-Ack | ☐ | ☒ |
| NM-RC-B | Network Management - Router Configuration–B | ☐ | Who-Is-Router-To-Network | ☒ | ☒ |
| | | ☐ | I-Am-Router-To-Network | ☒ | ☒ |
| | | ☐ | Initialize-Routing-Table | ☐ | ☒ |
| | | ☐ | Initialize-Routing-Table-Ack | ☒ | ☐ |

## 3.6 *Device Management BIBBs*

| BIBB Type | | Active | BACnet Service | Initiate | Execute |
|---|---|---|---|---|---|
| DM-DDB-A | Device Management - Dynamic Device Binding–A | ☒ | Who-Is | ☒ | ☐ |
| | | ☒ | I-Am | ☐ | ☒ |
| DM-DDB-B | Device Management - Dynamic Device Binding–B | ☒ | Who-Is | ☐ | ☒ |
| | | ☒ | I-Am | ☒ | ☐ |
| DM-DOB-A | Device Management - Dynamic Object Binding–A | ☐ | Who-Has | ☒ | ☐ |
| | | ☐ | I-Have | ☐ | ☒ |
| DM-DOB-B | Device Management - Dynamic Object Binding–B | ☒ | Who-Has | ☐ | ☒ |
| | | ☒ | I-Have | ☒ | ☐ |
| DM-DCC-A | Device Management - DeviceCommunicationControl–A | ☐ | DeviceCommunicationControl | ☒ | ☐ |
| DM-DCC-B | Device Management - DeviceCommunicationControl–B | ☒ | DeviceCommunicationControl | ☐ | ☒ |
| DM-PT-A | Device Management - PrivateTransfer–A | ☐ | ConfirmedPrivateTransfer | ☒ | ☐ |
| | | ☐ | UnconfirmedPrivateTransfer | ☒ | ☐ |
| DM-PT-B | Device Management - PrivateTransfer–B | ☐ | ConfirmedPrivateTransfer | ☐ | ☒ |
| | | ☐ | UnconfirmedPrivateTransfer | ☐ | ☒ |
| DM-TM-A | Device Management - Text Message–A | ☐ | ConfirmedTextMessage | ☒ | ☐ |
| | | ☐ | UnconfirmedTextMessage | ☒ | ☐ |
| DM-TM-B | Device Management - Text Message–B | ☐ | ConfirmedTextMessage | ☐ | ☒ |
| | | ☐ | UnconfirmedTextMessage | ☐ | ☒ |
| DM-TS-A | Device Management - TimeSynchronization–A | ☐ | TimeSynchronization | ☒ | ☐ |
| DM-TS-B | Device Management - TimeSynchronization–B | ☒ | TimeSynchronization | ☐ | ☒ |
| DM-UTC-A | Device Management - UTCTimeSynchronization–A | ☐ | UTCTimeSynchronization | ☒ | ☐ |
| DM-UTC-B | Device Management - UTCTimeSynchronization–B | ☐ | UTCTimeSynchronization | ☐ | ☒ |
| DM-RD-A | Device Management - ReinitializeDevice–A | ☐ | ReinitializeDevice | ☒ | ☐ |
| DM-RD-B | Device Management - ReinitializeDevice–B | ☒ | ReinitializeDevice | ☐ | ☒ |
| DM-BR-A | Device Management - Backup and Restore–A | ☐ | AtomicReadFile | ☒ | ☐ |
| | | ☐ | AtomicWriteFile | ☒ | ☐ |
| | | ☐ | CreateObject | ☒ | ☐ |
| | | ☐ | ReinitializeDevice | ☒ | ☐ |
| DM-BR-B | Device Management - Backup and Restore–B | ☐ | AtomicReadFile | ☐ | ☒ |
| | | ☐ | AtomicWriteFile | ☐ | ☒ |
| | | ☐ | ReinitializeDevice | ☐ | ☒ |
| DM-R-A | Device Management - Restart–A | ☐ | UnconfimedCOVNotification | ☐ | ☒ |
| DM-R-B | Device Management - Restart–B | ☐ | UnconfimedCOVNotification | ☒ | ☐ |
| DM-LM-A | Device Management - List Manipulation–A | ☐ | AddListElement | ☒ | ☐ |
| | | ☐ | RemoveListElement | ☒ | ☐ |
| DM-LM-B | Device Management - List Manipulation–B | ☐ | AddListElement | ☐ | ☒ |
| | | ☐ | RemoveListElement | ☐ | ☒ |
| DM-OCD-A | Device Management - Object Creation and Deletion–A | ☐ | CreateObject | ☒ | ☐ |
| | | ☐ | DeleteObject | ☒ | ☐ |
| DM-OCD-B | Device Management - Object Creation and Deletion–B | ☐ | CreateObject | ☐ | ☒ |
| | | ☐ | DeleteObject | ☐ | ☒ |
| DM-VT-A | Device Management - Virtual Terminal–A | ☐ | VT-Open | ☒ | ☐ |
| | | ☐ | VT-Close | ☒ | ☒ |
| | | ☐ | VT-Data | ☒ | ☒ |
| DM-VT-B | Device Management - Virtual Terminal–B | ☐ | VT-Open | ☐ | ☒ |
| | | ☐ | VT-Close | ☒ | ☒ |
| | | ☐ | VT-Data | ☒ | ☒ |

# 4 Service Types

| Service type | Service name | Supported | Remarks |
|---|---|---|---|
| Alarm and Event Services | AcknowledgeAlarm | ☒ | |
| | ConfirmedCOVNotification | ☐ | |
| | ConfirmedEventNotification | ☐ | |
| | GetAlarmSummary | ☒ | |
| | GetEnrollmentSummary | ☐ | |
| | SubscribeCOV | ☒ | |
| File Access Services | AtomicReadFile | ☐ | |
| | AtomicWriteFile | ☐ | |
| Object Access Services | AddListElement | ☐ | |
| | RemoveListElement | ☐ | |
| | CreateObject | ☐ | |
| | DeleteObject | ☐ | |
| | ReadProperty | ☒ | |
| | ReadPropertyConditional | ☐ | |
| | ReadPropertyMultiple | ☒ | |
| | ReadRange | ☒ | |
| | WriteProperty | ☒ | |
| | WritePropertyMultiple | ☒ | |
| Remote Device Management Services | DeviceComminicationControl | ☒ | |
| | ConfirmedPrivateTransfer | ☐ | |
| | ConfirmedTextMessage | ☐ | |
| | ReinitializeDevice | ☒ | |
| Virtual Terminal Services | VtOpen | ☐ | |
| | VtClose | ☐ | |
| | VtData | ☐ | |
| Security Services | Authenticate | ☐ | |
| | RequestKey | ☐ | |
| Unconfirmed Services | I-Am | ☒ | |
| | I-Have | ☐ | |
| | UnconfirmedCOVNotification | ☐ | |
| | UnconfirmedEventNotification | ☐ | |
| | UnconfirmedPrivateTransfer | ☐ | |
| | UnconfirmedTextMessage | ☐ | |
| | TimeSynchronization | ☒ | |
| | UtcTimeSynchronization | ☐ | |
| | Who-Has | ☒ | |
| | Who-Is | ☒ | |
| | LifeSafetyOperation | ☐ | |
| | SubscribeCOVProperty | ☐ | |
| | GetEventInformation | ☒ | |

# 5 Objects

## 5.1 *Supported Object Types*

The objects supported are shown in the table below.

| Object Type | ID | Supported | Management Point |
|---|---|---|---|
| Analog-Input | 0 | ☒ | OxxUxx_Setpoint_S<br>OxxUxx_Room_Temperature<br>OxxUxx_Disch.Setpoint Cool IU_S<br>OxxUxx_Disch.Setpoint Cool AHU_S<br>OxxUxx_Disch.Setpoint Heat IU_S<br>OxxUxx_Disch.Setpoint Heat AHU_S<br>OxxUxx_Disch. Current Temp.<br>OxxUxx_Unit Error code<br>OxxUxx_Error Slave Chiller Unit<br>OxxUxx_Slave Chiller in Error<br>OxxUxx_HotWater Setpoint HE_S<br>OxxUxx_HotWater Setpoint HT_S<br>OxxUxx_HotWater Setpoint EHS_S<br>OxxUxx_HotWater Current Temp.<br>OxxUxx_WaterIn Temperature<br>OxxUxx_WaterOut Temperature, 31<br>OxxUxx_WaterOut Setpoint HE_S<br>OxxUxx_WaterOut Setpoint HT_S<br>OxxUxx_WaterOut Setpoint EHS_S<br>OxxUxx_WaterOut Setpoint CHILL_S<br>OxxUxx_WaterOut Average Temp. |
| Analog-Output | 1 | ☒ | Temperature Setpoint (all units)<br>OxxUxx_Setpoint_C<br>OxxUxx_Disch.Setpoint Cool IU_C<br>OxxUxx_Disch.Setpoint Cool AHU_C<br>OxxUxx_Disch.Setpoint Heat IU_C<br>OxxUxx_Disch.Setpoint Heat AHU_C<br>OxxUxx_HotWater Setpoint HE_C<br>OxxUxx_HotWater Setpoint HT_C<br>OxxUxx_HotWater Setpoint EHS_C<br>OxxUxx_WaterOut Setpoint HE_C<br>OxxUxx_WaterOut Setpoint HT_C<br>OxxUxx_WaterOut Setpoint EHS_C<br>OxxUxx_WaterOut Setpoint CHILL_C |
| Analog-Value | 2 | ☐ | |
| Averaging | 18 | ☐ | |
| Binary-Input | 3 | ☒ | OUxx_Communication Error OU<br>OU Addressing Error<br>OxxUxx_On/Off_S<br>OxxUxx_Vane position swing_S<br>OxxUxx_FilterSign<br>OxxUxx_RC Restriction_S<br>OxxUxx_HotWater On/Off_S<br>OxxUxx_Vent. On/Off_S |
| Binary-Output | 4 | ☒ | On/Off (all units)<br>Vane position swing (all units)<br>Vent. On/Off (all units)<br>Hot Water On/Off (all units)<br>OxxUxx_On/Off_C<br>OxxUxx_Vane position swing_C<br>OxxUxx_FilterReset<br>OxxUxx_RC Restriction_C<br>OxxUxx_Buzzer Sound<br>OxxUxx_HotWater On/Off_C<br>OxxUxx_Vent. On/Off_C |
| Binary-Value | 5 | ☐ | |
| Calendar | 6 | ☐ | |

| | | | |
|---|---|---|---|
| Command | 7 | ☐ | |
| Device | 8 | ☒ | Device INBACSAM---O000 |
| Event-Enrollment | 9 | ☐ | |
| File | 10 | ☐ | |
| Group | 11 | ☐ | |
| Life-Safety-Point | 21 | ☐ | |
| Life-Safety-Zone | 22 | ☐ | |
| Loop | 12 | ☐ | |
| Multistate-Input | 13 | ☒ | OxxUxx_Mode IU/AHU_S<br>OxxUxx_Mode HE/EHS_S<br>OxxUxx_Mode ERV+_S<br>OxxUxx_Mode CHILLER_S<br>OxxUxx_FanSpeed_S<br>OxxUxx_Communication Status<br>OxxUxx_Unit type<br>OxxUxx_HotWater Mode HE/HT_S<br>OxxUxx_HotWater Mode EHS_S<br>OxxUxx_Vent. Mode_S<br>OxxUxx_Vent. FanSpeed_S |
| Multistate-Output | 14 | ☒ | Mode (all units)<br>FanSpeed (all units)<br>OxxUxx_Mode IU/AHU_C<br>OxxUxx_Mode HE/EHS_C<br>OxxUxx_Mode ERV+_C<br>OxxUxx_Mode CHILLER_C<br>OxxUxx_FanSpeed_C<br>OxxUxx_HotWater Mode HE/HT_C<br>OxxUxx_HotWater Mode EHS_C<br>OxxUxx_Vent. Mode_C<br>OxxUxx_Vent. FanSpeed_C |
| Multistate-Value | 19 | ☐ | |
| Notification-Class | 15 | ☒ | |
| Program | 16 | ☐ | |
| Schedule | 17 | ☒ | |
| Trend-Log | 20 | ☒ | |
| Trend-Log-Multiple | 27 | ☒ | |

## 5.2 *Member objects*

### 5.2.1 Type: Gateway

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| Device INBACSAM---O000 | SAMSUNG to BACnet Gateway | Device | 246 |
| OU00_Communication Error OU | | BI | 0 |
| OU01_Communication Error OU | | BI | 1 |
| OU02_Communication Error OU | | BI | 2 |
| OU03_Communication Error OU | | BI | 3 |
| OU04_Communication Error OU | | BI | 4 |
| OU05_Communication Error OU | | BI | 5 |
| OU06_Communication Error OU | | BI | 6 |
| OU07_Communication Error OU | | BI | 7 |
| OU08_Communication Error OU | | BI | 8 |
| OU09_Communication Error OU | | BI | 9 |
| OU10_Communication Error OU | | BI | 10 |
| OU11_Communication Error OU | | BI | 11 |
| OU12_Communication Error OU | | BI | 12 |
| OU13_Communication Error OU | | BI | 13 |
| OU14_Communication Error OU | | BI | 14 |
| OU15_Communication Error OU | | BI | 15 |
| OU Addressing Error | | BI | 16 |

### 5.2.2 Type: Central control

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| On/Off (all units) | | BO | 0 |
| Mode (all units) | | MO | 0 |
| FanSpeed (all units) | | MO | 1 |
| Vane position swing (all units) | | BO | 1 |
| Temperature Setpoint (all units) | | AO | 0 |
| Vent. On/Off (all units) | | BO | 2 |
| Hot Water On/Off (all units) | | BO | 3 |

### 5.2.3 Type: Indoor Unit

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| OxxUxx_On/Off_S | | BI | (xxx*100) + 0 |
| OxxUxx_On/Off_C | | BO | (xxx*100) + 0 |
| OxxUxx_Mode IU/AHU_S | | MI | (xxx*100) + 0 |
| OxxUxx_Mode IU/AHU_C | | MO | (xxx*100) + 0 |
| OxxUxx_Setpoint_S | | AI | (xxx*100) + 0 |
| OxxUxx_Setpoint_C | | AO | (xxx*100) + 0 |
| OxxUxx_FanSpeed_S | | MI | (xxx*100) + 1 |
| OxxUxx_FanSpeed_C | | MO | (xxx*100) + 1 |
| OxxUxx_Vane position swing_S | | BI | (xxx*100) + 1 |
| OxxUxx_Vane position swing_C | | BO | (xxx*100) + 1 |
| OxxUxx_Room_Temperature | | AI | (xxx*100) + 1 |
| OxxUxx_Disch.Setpoint Cool IU_S | | AI | (xxx*100) + 2 |
| OxxUxx_Disch.Setpoint Cool IU_C | | AO | (xxx*100) + 1 |

| | | | |
|---|---|---|---|
| OxxUxx_Disch.Setpoint Heat IU_S | | AI | (xxx*100) + 3 |
| OxxUxx_Disch.Setpoint Heat IU_C | | AO | (xxx*100) + 2 |
| OxxUxx_Disch. Current Temp. | | AI | (xxx*100) + 4 |
| OxxUxx_Unit Error code | | AI | (xxx*100) + 5 |
| OxxUxx_FilterSign | | BI | (xxx*100) + 2 |
| OxxUxx_FilterReset | | BO | (xxx*100) + 2 |
| OxxUxx_Communication Status | | MI | (xxx*100) + 2 |
| OxxUxx_RC Restriction_S | | BI | (xxx*100) + 3 |
| OxxUxx_RC Restriction_C | | BO | (xxx*100) + 3 |
| OxxUxx_Buzzer Sound | | BO | (xxx*100) + 4 |
| OxxUxx_Unit type | | MI | (xxx*100) + 3 |

### 5.2.4 Type: HE

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| OxxUxx_On/Off_S | | BI | (xxx*100) + 0 |
| OxxUxx_On/Off_C | | BO | (xxx*100) + 0 |
| OxxUxx_Mode HE/EHS_S | | MI | (xxx*100) + 0 |
| OxxUxx_Mode HE/EHS_C | | MO | (xxx*100) + 0 |
| OxxUxx_Unit Error code | | AI | (xxx*100) + 5 |
| OxxUxx_Communication Status | | MI | (xxx*100) + 2 |
| OxxUxx_RC Restriction_S | | BI | (xxx*100) + 3 |
| OxxUxx_Unit type | | MI | (xxx*100) + 3 |
| OxxUxx_HotWater On/Off_S | | BI | (xxx*100) + 4 |
| OxxUxx_HotWater On/Off_C | | BO | (xxx*100) + 5 |
| OxxUxx_HotWater Mode HE/HT_S | | MI | (xxx*100) + 4 |
| OxxUxx_HotWater Mode HE/HT_C | | MO | (xxx*100) + 2 |
| OxxUxx_HotWater Setpoint HE_S | | AI | (xxx*100) + 8 |
| OxxUxx_HotWater Setpoint HE_C | | AO | (xxx*100) + 3 |
| OxxUxx_HotWater Current Temp. | | AI | (xxx*100) + 9 |
| OxxUxx_WaterIn Temperature | | AI | (xxx*100) + 10 |
| OxxUxx_WaterOut Temperature | | AI | (xxx*100) + 11 |
| OxxUxx_WaterOut Setpoint HE_S | | AI | (xxx*100) + 12 |
| OxxUxx_WaterOut Setpoint HE_C | | AO | (xxx*100) + 4 |

### 5.2.5 Type: HT

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| OxxUxx_On/Off_S | | BI | (xxx*100) + 0 |
| OxxUxx_On/Off_C | | BO | (xxx*100) + 0 |
| OxxUxx_Unit Error code | | AI | (xxx*100) + 5 |
| OxxUxx_Communication Status | | MI | (xxx*100) + 2 |
| OxxUxx_RC Restriction_S | | BI | (xxx*100) + 3 |
| OxxUxx_Unit type | | MI | (xxx*100) + 3 |
| OxxUxx_HotWater On/Off_S | | BI | (xxx*100) + 4 |
| OxxUxx_HotWater On/Off_C | | BO | (xxx*100) + 5 |
| OxxUxx_HotWater Mode HE/HT_S | | MI | (xxx*100) + 4 |
| OxxUxx_HotWater Mode HE/HT_C | | MO | (xxx*100) + 2 |
| OxxUxx_HotWater Setpoint HT_S | | AI | (xxx*100) + 8 |
| OxxUxx_HotWater Setpoint HT_C | | AO | (xxx*100) + 3 |

| | | | |
|---|---|---|---|
| OxxUxx_HotWater Current Temp. | | AI | (xxx*100) + 9 |
| OxxUxx_WaterIn Temperature | | AI | (xxx*100) + 10 |
| OxxUxx_WaterOut Temperature | | AI | (xxx*100) + 11 |
| OxxUxx_WaterOut Setpoint HT_S | | AI | (xxx*100) + 12 |
| OxxUxx_WaterOut Setpoint HT_C | | AO | (xxx*100) + 4 |

### 5.2.6 Type: EHS

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| OxxUxx_On/Off_S | | BI | (xxx*100) + 0 |
| OxxUxx_On/Off_C | | BO | (xxx*100) + 0 |
| OxxUxx_Mode HE/EHS_S | | MI | (xxx*100) + 0 |
| OxxUxx_Mode HE/EHS_C | | MO | (xxx*100) + 0 |
| OxxUxx_Unit Error code | | AI | (xxx*100) + 5 |
| OxxUxx_Communication Status | | MI | (xxx*100) + 2 |
| OxxUxx_RC Restriction_S | | BI | (xxx*100) + 3 |
| OxxUxx_Unit type | | MI | (xxx*100) + 3 |
| OxxUxx_HotWater On/Off_S | | BI | (xxx*100) + 4 |
| OxxUxx_HotWater On/Off_C | | BO | (xxx*100) + 5 |
| OxxUxx_HotWater Mode EHS_S | | MI | (xxx*100) + 4 |
| OxxUxx_HotWater Mode EHS_C | | MO | (xxx*100) + 2 |
| OxxUxx_HotWater Setpoint EHS_S | | AI | (xxx*100) + 8 |
| OxxUxx_HotWater Setpoint EHS_C | | AO | (xxx*100) + 3 |
| OxxUxx_HotWater Current Temp. | | AI | (xxx*100) + 9 |
| OxxUxx_WaterIn Temperature | | AI | (xxx*100) + 10 |
| OxxUxx_WaterOut Temperature | | AI | (xxx*100) + 11 |
| OxxUxx_WaterOut Setpoint EHS_S | | AI | (xxx*100) + 12 |
| OxxUxx_WaterOut Setpoint EHS_C | | AO | (xxx*100) + 4 |

### 5.2.7 Type: AHU

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| OxxUxx_On/Off_S | | BI | (xxx*100) + 0 |
| OxxUxx_On/Off_C | | BO | (xxx*100) + 0 |
| OxxUxx_Mode IU/AHU_S | | MI | (xxx*100) + 0 |
| OxxUxx_Mode IU/AHU_C | | MO | (xxx*100) + 0 |
| OxxUxx_Setpoint_S | | AI | (xxx*100) + 0 |
| OxxUxx_Setpoint_C | | AO | (xxx*100) + 0 |
| OxxUxx_Room_Temperature | | AI | (xxx*100) + 1 |
| OxxUxx_Disch.Setpoint Cool AHU_S | | AI | (xxx*100) + 2 |
| OxxUxx_Disch.Setpoint Cool AHU_C | | AO | (xxx*100) + 1 |
| OxxUxx_Disch.Setpoint Heat AHU_C | | AI | (xxx*100) + 3 |
| OxxUxx_Disch.Setpoint Heat AHU_C | | AO | (xxx*100) + 2 |
| OxxUxx_Disch. Current Temp. | | AI | (xxx*100) + 4 |
| OxxUxx_Unit Error code | | AI | (xxx*100) + 5 |
| OxxUxx_FilterSign | | BI | (xxx*100) + 2 |
| OxxUxx_Communication Status | | MI | (xxx*100) + 2 |
| OxxUxx_RC Restriction_S | | BI | (xxx*100) + 3 |
| OxxUxx_RC Restriction_C | | BO | (xxx*100) + 3 |
| OxxUxx_Unit type | | MI | (xxx*100) + 3 |

### 5.2.8 Type: ERV

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| OxxUxx_Unit Error code | | AI | (xxx*100) + 5 |
| OxxUxx_FilterSign | | BI | (xxx*100) + 2 |
| OxxUxx_FilterReset | | BO | (xxx*100) + 2 |
| OxxUxx_Communication Status | | MI | (xxx*100) + 2 |
| OxxUxx_RC Restriction_S | | BI | (xxx*100) + 3 |
| OxxUxx_RC Restriction_C | | BO | (xxx*100) + 3 |
| OxxUxx_Unit type | | MI | (xxx*100) + 3 |
| OxxUxx_Vent. On/Off_S | | BI | (xxx*100) + 5 |
| OxxUxx_Vent. On/Off_C | | BO | (xxx*100) + 6 |
| OxxUxx_Vent. Mode_S | | MI | (xxx*100) + 5 |
| OxxUxx_Vent. Mode_C | | MO | (xxx*100) + 3 |
| OxxUxx_Vent. FanSpeed_S | | MI | (xxx*100) + 6 |
| OxxUxx_Vent. FanSpeed_C | | MO | (xxx*100) + 4 |

### 5.2.9 Type: ERV+

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| OxxUxx_On/Off_S | | BI | (xxx*100) + 0 |
| OxxUxx_On/Off_C | | BO | (xxx*100) + 0 |
| OxxUxx_Mode ERV+_S | | MI | (xxx*100) + 0 |
| OxxUxx_Mode ERV+_C | | MO | (xxx*100) + 0 |
| OxxUxx_Unit Error code | | AI | (xxx*100) + 5 |
| OxxUxx_FilterSign | | BI | (xxx*100) + 2 |
| OxxUxx_FilterReset | | BO | (xxx*100) + 2 |
| OxxUxx_Communication Status | | MI | (xxx*100) + 2 |
| OxxUxx_RC Restriction_S | | BI | (xxx*100) + 3 |
| OxxUxx_RC Restriction_C | | BO | (xxx*100) + 3 |
| OxxUxx_Unit type | | MI | (xxx*100) + 3 |
| OxxUxx_Vent. On/Off_S | | BI | (xxx*100) + 5 |
| OxxUxx_Vent. On/Off_C | | BO | (xxx*100) + 6 |
| OxxUxx_Vent. Mode_S | | MI | (xxx*100) + 5 |
| OxxUxx_Vent. Mode_C | | MO | (xxx*100) + 3 |
| OxxUxx_Vent. FanSpeed_S | | MI | (xxx*100) + 6 |
| OxxUxx_Vent. FanSpeed_C | | MO | (xxx*100) + 4 |

### 5.2.10 Type: CHILLER

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| OxxUxx_On/Off_S | | BI | (xxx*100) + 0 |
| OxxUxx_On/Off_C | | BO | (xxx*100) + 0 |
| OxxUxx_Mode CHILLER_S | | MI | (xxx*100) + 0 |
| OxxUxx_Mode CHILLER_C | | MO | (xxx*100) + 0 |
| OxxUxx_Unit Error code | | AI | (xxx*100) + 5 |
| OxxUxx_Error Slave Chiller Unit | | AI | (xxx*100) + 6 |
| OxxUxx_Slave Chiller in Error | | AI | (xxx*100) + 7 |
| OxxUxx_Communication Status | | MI | (xxx*100) + 2 |

| | | | |
|---|---|---|---|
| OxxUxx_RC Restriction_S | | BI | (xxx*100) + 3 |
| OxxUxx_RC Restriction_C | | BO | (xxx*100) + 3 |
| OxxUxx_Unit type | | MI | (xxx*100) + 3 |
| OxxUxx_WaterOut Setpoint CHILL_S | | AI | (xxx*100) + 12 |
| OxxUxx_WaterOut Setpoint CHILL_C | | AO | (xxx*100) + 4 |
| OxxUxx_WaterOut Average Temp. | | AI | (xxx*100) + 13 |

## 5.3 *Objects and properties*

Below you can find relevant information for the objects and properties.

**Object_Identifier:** In the **Device Object**, the value of object instance is configurable through LinkBoxBACnet. See Table 5.1 in order to obtain the name of each object.

| Variable | Description |
|---|---|
| "Oxx" | Outdoor Unit address (0..15) |
| "Uxx" | Indoor Unit address (0..63) |
| "xxx" | Indoor Unit identifier (1..64) |

**Table 5.1** Objects and properties variables and descriptions

**Object_Name:** In the **Device Object**, this string is configurable through LinkBoxBACnet. See Table 5.1 in order to obtain the name of each object.

**Description:** In the **Device Object**, this string is configurable through LinkBoxBACnet. See Table 5.1 in order to obtain the description of each object.

**Relinquish_Default:** In **Binary Outputs**, **Multistate Outputs** and **Multistate Values**, the value of *Present_Value* property will be read.

**Priority_Array:** In **Binary Outputs**, **Multistate Outputs** and **Multistate Values**, *Priority_Array[16]* will acquire the value of *Present_Value* property and *Priority_Array[1]~[15]* will be NULL.

**State_Text:** In **Multistate Outputs**, **Multistate Outputs** and **Multistate Values**, it cannot be read the whole array at once, so "Array Index" must be specified in order to obtain the text of the corresponding state.

### 5.3.1 Device INBACSAM---O000 (Device Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Device, 246) | R | R |
| Object_Name | CharacterString | "Device INBACSAM---O000" | R | R |
| Object_Type | BACnetObjectType | DEVICE (8) (Device Object Type) | R | R |
| System_Status | BACnetDeviceStatus | OPERATIONAL (0) | R | R |
| Vendor_Name | CharacterString | "HMS Industrial Networks S.L.U" | R | R |
| Vendor_Identifier | Unsigned16 | 246 | R | R |
| Model_Name | CharacterString | "INBACSAM---O000" | R | R |
| Firmware_Revision | CharacterString | "12.1.0.3" | R | R |
| Application_Software_ Version | CharacterString | "1.0.0.0" | R | R |
| Location | CharacterString | "" | O | - |
| Description | CharacterString | "SAMSUNG to BACnet Gateway" | O | R |
| Protocol_Version | Unsigned | 1 | R | R |
| Protocol_Revision | Unsigned | 12 | R | R |
| Protocol_Services_ Supported | BACnetServiceSupported | Refer to section 4 [Service Types] | R | R |
| Protocol_Object_Types_ Supported | BACnetObjectTypes Supported | Refer to section **¡Error! No se encuentra el o rigen de la referencia.** [Object Types] | R | R |
| Object_List | BACnetArray[N] of BACnetObjectIdentifier | BACnetARRAY[N] | R | R |
| Structured_Object_List | BACnetArray[N] of BACnetObjectIdentifier | - | O | - |
| Max_APDU_Length_ Accepted | Unsigned | 480 when MSTP / 1476 when BACnet/IP | R | R |
| Segmentation_Supported | BACnetSegmentation | SEGMENTED-BOTH (0) | R | R |
| Max_Segments_accepted | Unsigned | 16 | O | R |
| VT_Classes_Supported | List of BACnetVTClass | - | O | - |
| Active_VT_Sessions | List of BACnetVTSession | - | O | - |
| Local_Date | Date | Current date | O | R |
| Local_Time | Time | Current time | O | R |
| UTC_Offset | INTEGER | - | O | - |
| Daylight_Savings_Status | BOOLEAN | - | O | - |
| APDU_Segment_Timeout | Unsigned | 3000 | R | R |
| APDU_Timeout | Unsigned | 3000 | R | R |
| Number_of_APDU_ Retries | Unsigned | 3 | R | R |
| List_Of_Session_Keys | List of BACnetSessionKey | - | O | - |
| Time_Synchronization_ Recipients | List of BACnetRecipient | - | O | - |
| Max_Master * ** | Unsigned | 127 | R | W |

| | | | | |
|---|---|---|---|---|
| Max_Info_Frames * | Unsigned | 1 | O | R |
| Device_Address_Binding | List of BACnetAddressBinding | NULL (empty) | R | R |
| Database_Revision | Unsigned | 0 | R | R |
| Configuration_Files | BACnetArray[N] of BACnetObjectIdentifier | - | O | - |
| Last_Restore_Time | BACnetTimeStamp | - | O | - |
| Backup_Failure_Timeout | Unsigned16 | - | O | - |
| Active_COV_ Subscriptions | List of BACnetCOVSubscription | List of BACnetCOVSubscription | O | R |
| Slave_Proxy_Enable | BACnetArray[N] of BOOLEAN | - | O | - |
| Manual_Slave_Address_ Binding | List of BACnetAddressBinding | - | O | - |
| Auto_Slave_Discovery | BACnetArray[N] of BOOLEAN | - | O | - |
| Slave_Address_Binding | BACnetAddressBinding | - | O | - |
| Last_Restart_Reason | BACnetRestartReason | - | O | - |
| Time_Of_Device_Restart | BACnetTimeStamp | - | O | - |
| Restart_Notification_ Recipients | List of BACnetRecipient | - | O | - |
| UTC_Time_ Synchronization_ Recipients | List of BACnetRecipient | - | O | - |
| Time_Synchronization_ Interval | Unsigned | - | O | - |
| Align_Intervals | BOOLEAN | - | O | - |
| Interval_Offset | Unsigned | - | O | - |
| Profile_Name | CharacterString | - | O | - |

* Only available when MSTP is used

** Configurable through the configuration tool.

### 5.3.2 OUxx_Communication Error OU (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 0..15) | R | R |
| Object_Name | CharacterString | *OUxx_Communication Error OU* | R | R |
| Object_Type | BACnetObjectType | BINARY_INPUT (3) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"No Error"* | O | R |
| Active_Text | CharacterString | *"Error"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.3 OU Addressing Error (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 0..15) | R | R |
| Object_Name | CharacterString | *OU Addressing Error* | R | R |
| Object_Type | BACnetObjectType | BINARY_INPUT (3) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"OU Addressing OK"* | O | R |
| Active_Text | CharacterString | *"Manual Addr in OU required"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.4 On/Off (all units) (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 0) | R | R |
| Object_Name | CharacterString | *On/Off (all units)* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.5 Mode (all units) (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, 0) | R | R |
| Object_Name | CharacterString | *Mode (all units)* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode (all units) table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode (all units) table

Mode interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Dry |
| 3 | Fan |
| 4 | Cool |
| 5 | Auto |

| | |
|---|---|
| 6 | Cool Storage |
| 7 | Hot Water |

### 5.3.6 FanSpeed (all units) (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, 1) | R | R |
| Object_Name | CharacterString | *FanSpeed (all units)* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *4* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **FanSpeed (all units) table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## FanSpeed (all units) table

FanSpeed interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Low |
| 2 | Mid |
| 3 | High |
| 4 | Auto |

### 5.3.7 Vane position swing (all units) (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 0) | R | R |
| Object_Name | CharacterString | *Vane position swing (all units)* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Swing Off"* | O | R |
| Active_Text | CharacterString | *"Swing On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.8 Temperature Setpoint (all units) (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 0) | R | R |
| Object_Name | CharacterString | *Temperature Setpoint (all units)* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.9 Vent. On/Off (all units) (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 0) | R | R |
| Object_Name | CharacterString | *Vent. On/Off (all units)* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.10 Hot Water On/Off (all units) (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 0) | R | R |
| Object_Name | CharacterString | *Hot Water On/Off (all units)* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.11 OxxUxx_On/Off_S (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_On/Off_S* | R | R |
| Object_Type | BACnetObjectType | BINARY_INPUT (3) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.12 OxxUxx_On/Off_C (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_On/Off_C* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.13 OxxUxx_Mode IU/AHU_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Mode IU/AHU_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode IU/AHU table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode IU/AHU table

Mode IU/AHU interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Dry |
| 3 | Fan |
| 4 | Cool |
| 5 | Auto |
| 6 | Not Valid |
| 7 | Not Valid |

### 5.3.14 OxxUxx_Mode HE/EHS_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Mode HE/EHS_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode HE/EHS table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode HE/EHS table

Mode HE/EHS interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Not Valid |
| 3 | Not Valid |
| 4 | Cool |
| 5 | Not Valid |
| 6 | Not Valid |
| 7 | Not Valid |

### 5.3.15 OxxUxx_Mode ERV+_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Mode ERV+_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode ERV+ table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode ERV+ table

Mode ERV+ interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Not Valid |
| 3 | Not Valid |
| 4 | Cool |
| 5 | Auto |
| 6 | Not Valid |
| 7 | Not Valid |

### 5.3.16 OxxUxx_Mode CHILLER_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Mode CHILLER_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode CHILLER table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode CHILLER table

Mode Chiller interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Not Valid |
| 3 | Not Valid |
| 4 | Cool |
| 5 | Not Valid |
| 6 | Cool Storage |
| 7 | Heat Storage |

### 5.3.17 OxxUxx_Mode IU/AHU_C (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Mode IU/AHU_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode IU/AHU table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode IU/AHU table

Mode IU/AHU interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Dry |
| 3 | Fan |
| 4 | Cool |
| 5 | Auto |

| | |
|---|---|
| 6 | Not Valid |
| 7 | Not Valid |

### 5.3.18 OxxUxx_Mode HE/EHS_C (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Mode HE/EHS_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode HE/EHS table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode HE/EHS table

Mode HE/EHS interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Not Valid |
| 3 | Not Valid |
| 4 | Cool |
| 5 | Not Valid |

| | |
|---|---|
| 6 | Not Valid |
| 7 | Not Valid |

### 5.3.19 OxxUxx_Mode ERV+_C (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Mode ERV+_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode ERV+ table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode ERV+ table

Mode ERV+ interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Not Valid |
| 3 | Not Valid |
| 4 | Cool |
| 5 | Auto |

| | |
|---|---|
| 6 | Not Valid |
| 7 | Not Valid |

### 5.3.20 OxxUxx_Mode CHILLER_C (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Mode CHILLER_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *7* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Mode CHILLER table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Mode CHILLER table

Mode Chiller interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Heat |
| 2 | Not Valid |
| 3 | Not Valid |
| 4 | Cool |
| 5 | Not Valid |

| | |
|---|---|
| 6 | Cool Storage |
| 7 | Heat Storage |

### 5.3.21 OxxUxx_Setpoint_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Setpoint_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.22 OxxUxx_Setpoint_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Setpoint_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.23 OxxUxx_FanSpeed_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_FanSpeed_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *4* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **FanSpeed table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## FanSpeed table

FanSpeed interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Low |
| 2 | Mid |
| 3 | High |
| 4 | Auto |

### 5.3.24 OxxUxx_FanSpeed_C (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_FanSpeed_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *4* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **FanSpeed table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## FanSpeed table

FanSpeed interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Low |
| 2 | Mid |
| 3 | High |
| 4 | Auto |

### 5.3.25 OxxUxx_Vane position swing_S (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, (xxx*100) + 1) | R | R |
| Object_Name | CharacterString | *OxxUxx_Vane position swing_S* | R | R |
| Object_Type | BACnetObjectType | BINARY_INPUT (3) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.26 OxxUxx_Vane position swing_C (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, (xxx*100) + 1) | R | R |
| Object_Name | CharacterString | *OxxUxx_Vane position swing_C* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.27 OxxUxx_Room_Temperature (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 1) | R | R |
| Object_Name | CharacterString | *OxxUxx_Room_Temperature* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.28 OxxUxx_Disch.Setpoint Cool IU_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 2) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch.Setpoint Cool IU_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.29 OxxUxx_Disch.Setpoint Cool IU_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 1) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch.Setpoint Cool IU_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.30 OxxUxx_Disch.Setpoint Cool AHU_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 2) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch.Setpoint Cool AHU_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.31 OxxUxx_Disch.Setpoint Cool AHU_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 1) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch.Setpoint Cool AHU_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.32 OxxUxx_Disch.Setpoint Heat IU_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 3) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch.Setpoint Heat IU_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.33 OxxUxx_Disch.Setpoint Heat IU_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 2) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch.Setpoint Heat IU_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.34 OxxUxx_Disch.Setpoint Heat AHU_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 3) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch.Setpoint Heat AHU_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.35 OxxUxx_Disch.Setpoint Heat IU_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 2) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch.Setpoint Heat IU_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.36 OxxUxx_Disch. Current Temp. S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch. Current Temp.* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.37 OxxUxx_Unit Error code (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 5) | R | R |
| Object_Name | CharacterString | *OxxUxx_Disch. Current Temp.* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *no_units* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.38 OxxUxx_Error Slave Chiller Unit (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 6) | R | R |
| Object_Name | CharacterString | *OxxUxx_Error Slave Chiller Unit* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *no_units* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.39 OxxUxx_Slave Chiller in Error (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 7) | R | R |
| Object_Name | CharacterString | *OxxUxx_Slave Chiller in Error* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *no_units* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.40 OxxUxx_FilterSign (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, (xxx*100) + 2) | R | R |
| Object_Name | CharacterString | *OxxUxx_FilterSign* | R | R |
| Object_Type | BACnetObjectType | BINARY_INPUT (3) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Normal"* | O | R |
| Active_Text | CharacterString | *"Alarm"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.41 OxxUxx_FilterReset (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, (xxx*100) + 2) | R | R |
| Object_Name | CharacterString | *OxxUxx_FilterReset* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"No reset"* | O | R |
| Active_Text | CharacterString | *"Reset"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.42 OxxUxx_Communication Status (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 0) | R | R |
| Object_Name | CharacterString | *OxxUxx_Communication Status* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *16* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Communication Status table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Communication Status table

Communication Status interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | -/-/-/- |
| 2 | -/-/-/EXST |
| 3 | -/-/RDY/- |
| 4 | -/-/RDY/EXST |
| 5 | -/DTUP/-/- |
| 6 | -/DTUP/-/EXST |
| 7 | -/DTUP/RDY/- |

| | |
|---|---|
| 8 | -/DTUP/RDY/EXST |
| 9 | TPOK/-/-/- |
| 10 | TPOK/-/-/EXST |
| 11 | TPOK/-/RDY/- |
| 12 | TPOK/-/RDY/EXST |
| 13 | TPOK/DTUP/-/- |
| 14 | TPOK/DTUP/-/EXST |
| 15 | TPOK/DTUP/RDY/- |
| 16 | TPOK/DTUP/RDY/EXST |

Where following is the meaning of each field:

- EXST: Unit found in bus
- RDY: Unit ready
- DTUP: Data from unit has been updated
- TPOK: Unit type in configuration is OK

### 5.3.43 OxxUxx_RC Restriction_S (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, (xxx*100) + 3) | R | R |
| Object_Name | CharacterString | *OxxUxx_FilterSign* | R | R |
| Object_Type | BACnetObjectType | BINARY_INPUT (3) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"No restriction"* | O | R |
| Active_Text | CharacterString | *"Restriction"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.44 OxxUxx_RC Restriction_C (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, (xxx*100) + 3) | R | R |
| Object_Name | CharacterString | *OxxUxx_RC Restriction_C* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"No restriction"* | O | R |
| Active_Text | CharacterString | *"Restriction"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.45 OxxUxx_Buzzer Sound (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_Buzzer Sound* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Buzzer On"* | O | R |
| Active_Text | CharacterString | *"Buzzer Off"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.46 OxxUxx_Unit type (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 3) | R | R |
| Object_Name | CharacterString | *OxxUxx_Unit type* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *9* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Unit type table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Unit type table

Communication type interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Not Defined |
| 2 | IU |
| 3 | HE |
| 4 | HT |
| 5 | AHU |
| 6 | ERV |

| | |
|---|---|
| 7 | ERV+ |
| 8 | EHS |
| 9 | CHILLER |

### 5.3.47 OxxUxx_HotWater On/Off_S (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater On/Off_S* | R | R |
| Object_Type | BACnetObjectType | BINARY_INPUT (3) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.48 OxxUxx_HotWater On/Off_C (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, (xxx*100) + 5) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater On/Off_C* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.49 OxxUxx_HotWater Mode HE/HT_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Mode HE/HT_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *3* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **HotWater Mode HE/HT table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## HotWater Mode HE/HT table

HotWater Mode HE/HT interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Eco |
| 2 | Standby |
| 3 | Power |

### 5.3.50 OxxUxx_HotWater Mode EHS_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Mode EHS_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *4* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **HotWater Mode EHS table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## HotWater Mode EHS table

HotWater Mode EHS interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Eco |
| 2 | Standby |
| 3 | Power |
| 4 | Force |

### 5.3.51 OxxUxx_HotWater Mode HE/HT_C (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 2) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Mode HE/HT_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *3* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **HotWater Mode HE/HT table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## HotWater Mode HE/HT table

HotWater Mode HE/HT interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Eco |
| 2 | Standby |
| 3 | Power |

### 5.3.52 OxxUxx_HotWater Mode EHS_C (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 2) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Mode EHS_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *4* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **HotWater Mode EHS table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## HotWater Mode EHS table

HotWater Mode EHS interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Eco |
| 2 | Standby |
| 3 | Power |
| 4 | Force |

### 5.3.53 OxxUxx_HotWater Setpoint HE_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 8) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Setpoint HE_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.54 OxxUxx_HotWater Setpoint HT_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 8) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Setpoint HT_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.55 OxxUxx_HotWater Setpoint EHS_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 8) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Setpoint EHS_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.56 OxxUxx_HotWater Setpoint HE_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 3) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Setpoint HE_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.57 OxxUxx_HotWater Setpoint EHS_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 3) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Setpoint EHS_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.58 OxxUxx_HotWater Current Temp. (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 9) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater Current Temp.* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.59 OxxUxx_WaterIn Temperature. (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 10) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterIn Temperature* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.60 OxxUxx_WaterOut Temperature. (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 11) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Temperature* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.61 OxxUxx_WaterOut Setpoint HE_S. (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 12) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Setpoint HE_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.62 OxxUxx_WaterOut Setpoint HT_S. (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 12) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Setpoint HT_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.63 OxxUxx_WaterOut Setpoint EHS_S. (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 12) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Setpoint EHS_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.64 OxxUxx_WaterOut Setpoint CHILL_S (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 12) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Setpoint CHILL_S* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.65 OxxUxx_WaterOut Setpoint HE_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Setpoint HE_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.66 OxxUxx_WaterOut Setpoint HT_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Setpoint HT_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.67 OxxUxx_WaterOut Setpoint EHS_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Setpoint EHS_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.68 OxxUxx_WaterOut Setpoint CHILL_C (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Setpoint CHILL_C* | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | *Configurable through BACnet and Config Tool* | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.69 OxxUxx_WaterOut Average Temp. (Analog Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, (xxx*100) + 13) | R | R |
| Object_Name | CharacterString | *OxxUxx_WaterOut Average Temp.* | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | *degrees_Celsius* | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.70 OxxUxx_Vent. On/Off_S (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, (xxx*100) + 5) | R | R |
| Object_Name | CharacterString | *OxxUxx_Vent. On/Off_S* | R | R |
| Object_Type | BACnetObjectType | BINARY_INPUT (3) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.71 OxxUxx_HotWater On/Off_C (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, (xxx*100) + 6) | R | R |
| Object_Name | CharacterString | *OxxUxx_HotWater On/Off_C* | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | *"Off"* | O | R |
| Active_Text | CharacterString | *"On"* | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.72 OxxUxx_Vent. Mode_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 5) | R | R |
| Object_Name | CharacterString | *OxxUxx_Vent. Mode_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *4* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Vent Mode table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Vent Mode table

Vent Mode interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Bypass |
| 2 | HeatEx |
| 3 | Sleep |
| 4 | Auto |

### 5.3.73 OxxUxx_Vent. Mode_C (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 3) | R | R |
| Object_Name | CharacterString | *OxxUxx_Vent. Mode_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *4* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Vent Mode table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Vent Mode table

Vent Mode interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Bypass |
| 2 | HeatEx |
| 3 | Sleep |
| 4 | Auto |

### 5.3.74 OxxUxx_Vent. FanSpeed_S (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Input, (xxx*100) + 6) | R | R |
| Object_Name | CharacterString | *OxxUxx_Vent. FanSpeed_S* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | x | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *3* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Vent FanSpeed table** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Vent FanSpeed table

Vent FanSpeed interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Low |
| 2 | High |
| 3 | Turbo |

### 5.3.75 OxxUxx_Vent. FanSpeed_C (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | IBOX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multi-state Output, (xxx*100) + 4) | R | R |
| Object_Name | CharacterString | *OxxUxx_Vent. FanSpeed_C* | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | x | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | *3* | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Vent FanSpeed table** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

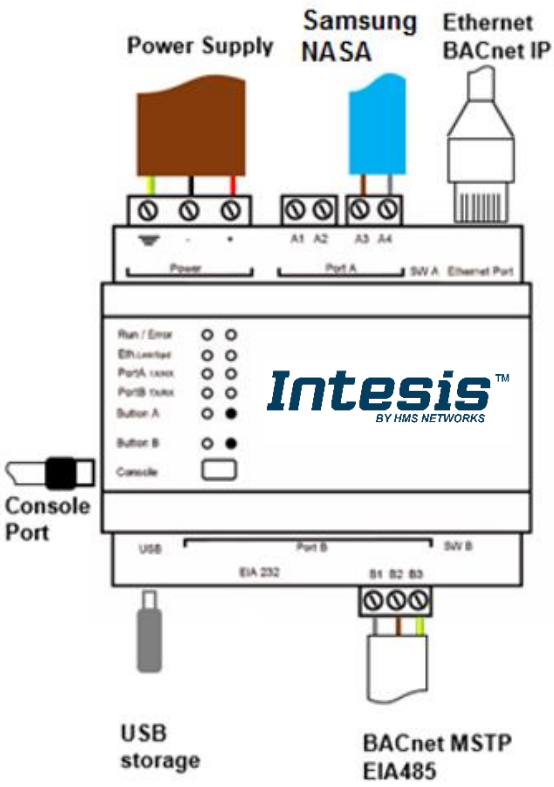
## Vent FanSpeed table

Vent FanSpeed interpretation is possible using the value in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Low |
| 2 | High |
| 3 | Turbo |

# 6 Connections

Find below information regarding the Intesis connections available.




***Power Supply***
*Must use NEC Class 2 or Limited Power Source (LPS) and SELV rated power supply.*

***If using DC power supply:***
*Respect polarity applied of terminals (+) and (-). Be sure the voltage applied is within the range admitted (check table below). The power supply can be connected to earth but only through the negative terminal, never through the positive terminal.*

***If using AC power supply:***
*Make sure the voltage applied is of the value admitted (24 Vac). Do not connect any of the terminals of the AC power supply to earth, and make sure the same power supply is not supplying any other device.*

***Ethernet / BACnet IP***
*Connect the cable coming from the IP network to the connector ETH of the gateway. Use an Ethernet CAT5 cable. If communicating through the LAN of the building, contact the network administrator and make sure traffic on the port used is allowed through all the LAN path (check the gateway user manual for more information). Default IP is 192.168.100.246. DHCP is enabled by default.*

***PortA / Samsung NASA***
*Connect the R1/R2 bus of Samsung NASA Outdoor Units to the connectors A3 (R1) A4 (R2) of gateway's PortA. Respect the polarity.*

***PortB / BACnet MSTP***
*Connect the EIA485 bus to connectors B1 (-), B2 (+) and B3 (SNGD) of gateway's PortB. Respect the polarity. Remember the characteristics of the standard EIA485 bus: maximum distance of 1200 meters, maximum 32 devices connected to the bus, and in each end of the bus it must be a termination resistor of 120 Ω. The gateway has an internal bus biasing circuit that incorporates the termination resistor. If you install the gateway in one of the ends of the bus, then do not install an additional termination resistor in that end.*

***Console Port***
*Connect a mini-type B USB cable from your computer to the gateway to allow communication between the Configuration Software and the gateway. Remember that Ethernet connection is also allowed. Check the user manual for more information.*

**USB**
*Connect a USB storage device (not a HDD) if required. Check the user manual for more information.*

Ensure proper space for all connectors when mounted (see section **¡Error! No se encuentra el origen de la referencia.**).

## 6.1 *Power device*

The first step to perform is to power up the device. To do so, a power supply working with any of the voltage range allowed is needed (check section 8). Once connected the ON led will turn on.

**WARNING!** In order to avoid earth loops that can damage the gateway and/or any other equipment connected to it, we strongly recommend:

- The use of DC power supplies, floating or with the negative terminal connected to earth. **Never use a DC power supply with the positive terminal connected to earth**.
- The use of AC power supplies only if they are floating and not powering any other device.

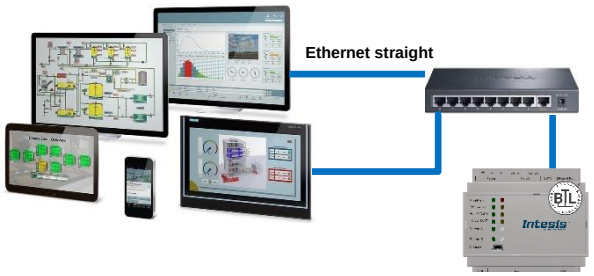
## 6.2 *Connection to BACnet*

### 6.2.1 BACnet IP

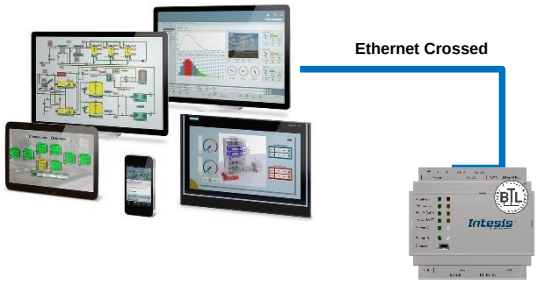
Connect the communication cable coming from the network hub or switch to the ETH port (Figure above) of Intesis. The cable to be used shall be a straight Ethernet UTP/FTP CAT5 cable

In case there is no response from the BACnet devices to the frames sent by Intesis, check that they are operative and reachable from the network connection used by Intesis. Check the Intesis Ethernet interface sending *Pings* to its IP address using a PC connected to the same Ethernet network.

Check as well with the network admin that there are no limitations regarding UDP communication or ports blocked.




**BACnet IP connection using switch/hub and straight cable**




**BACnet IP connection without switch/hub and crossed cable**

### 6.2.2 BACnet MSTP

Connect the EIA485 bus to connectors A3 (+), A4 (-) and A1 or A2 (SNGD) of gateway's PortA. Respect the polarity.

Remember the characteristics of the standard EIA485 bus: maximum distance of 1200 meters, maximum 32 devices connected to the bus, and in each end of the bus it must be a termination resistor of 120 Ω. The gateway has an internal bus biasing circuit that incorporates the termination resistor. If you install the gateway in one of the ends of the bus, then do not install an additional termination resistor in that end.

## 6.3 *Connect to Samsung NASA installation*

Use the PortA connector in the top corner of the Intesis device in order to connect Samsung NASA bus to the Intesis. Remember to follow all safety precautions indicated by Samsung.

To properly communicate with the Intesis, take into account following considerations:

- Samsung NASA AC network allows for both automatic and manual addressing. **Manual addressing of both indoor and outdoor units must be setup by Samsung installer in order that Intesis communicates properly.** Manual addressing is setup by means of DIP switches in outdoor unit, and using the remote controller or DIP switches in the indoor unit.

- Samsung NASA indoor units **need to be configured to accept 'central control'**. To do so, they need to be configured with so-called 'installation option code' in which segment 5 of this code needs to be set to value '1' to allow central control.

Connect the Samsung NASA bus to connectors A3 (R1/+) and A4 (R2/-) of gateway's PortA. Respect the polarity.

## 6.4 *Connection to the configuration tool*

This action allows the user to have access to configuration and monitoring of the device (more information can be found in the configuration tool User Manual). Two methods to connect to the PC can be used:

- **Ethernet:** Using the Ethernet port of Intesis.
- **USB:** Using the console port of Intesis, connect a USB cable from the console port to the PC.

# 7 Set-up process and troubleshooting

## 7.1 *Pre-requisites*

It is necessary to have a BACnet IP client or MSTP device operative and well connected to the corresponding BACnet port of Intesis and a Modbus RTU slave or Modbus TCP client connected to their corresponding ports as well.

Connectors, connection cables, PC to use the configuration tool and other auxiliary material, if needed, are not supplied by HMS Industrial Networks S.L.U for this standard integration.

Items supplied by HMS Networks for this integration are:

- Intesis gateway.
- Link to download the configuration tool.
- Product documentation.

## 7.2 *Intesis MAPS. Configuration & monitoring tool for Intesis BACnet series*

### 7.2.1 Introduction

Intesis MAPS is a Windows® compatible software developed specifically to monitor and configure Intesis new generation gateways.

The installation procedure and main functions are explained in the *Intesis MAPS BACnet User Manual*. This document can be downloaded from the link indicated in the installation sheet supplied with the Intesis device or in the product website at www.intesis.com

In this section, only the specific case of Samsung NASA to BACnet systems will be covered.

Please check the Intesis MAPS BACnet User Manual for specific information about the different parameters and how to configure them.

### 7.2.2 Connection

To configure the Intesis connection parameters press on the ***Connection*** button in the *menu bar*.

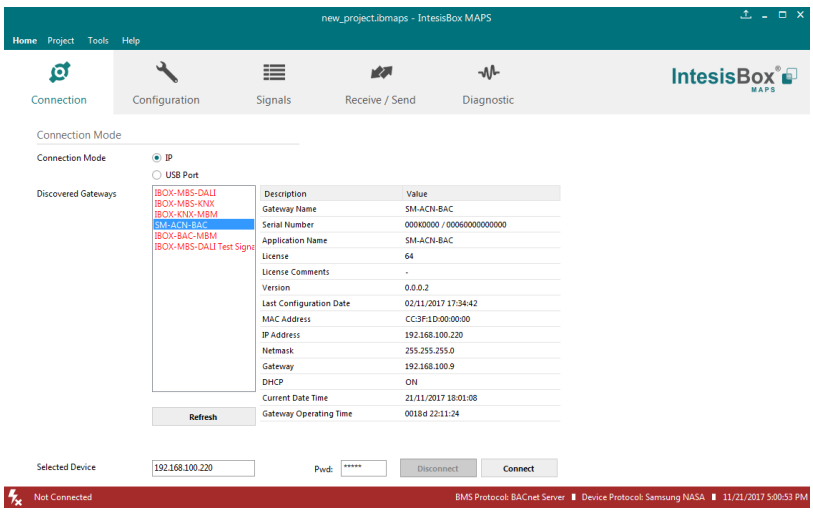



**Figure 7.1** MAPS connection

### 7.2.3 Configuration tab

Select the ***Configuration*** tab to configure the connection parameters. Three subsets of information are shown in this window: General (Gateway general parameters), BACnet Server (BACnet interface configuration) and Samsung NASA (Samsung NASA interface parameters).

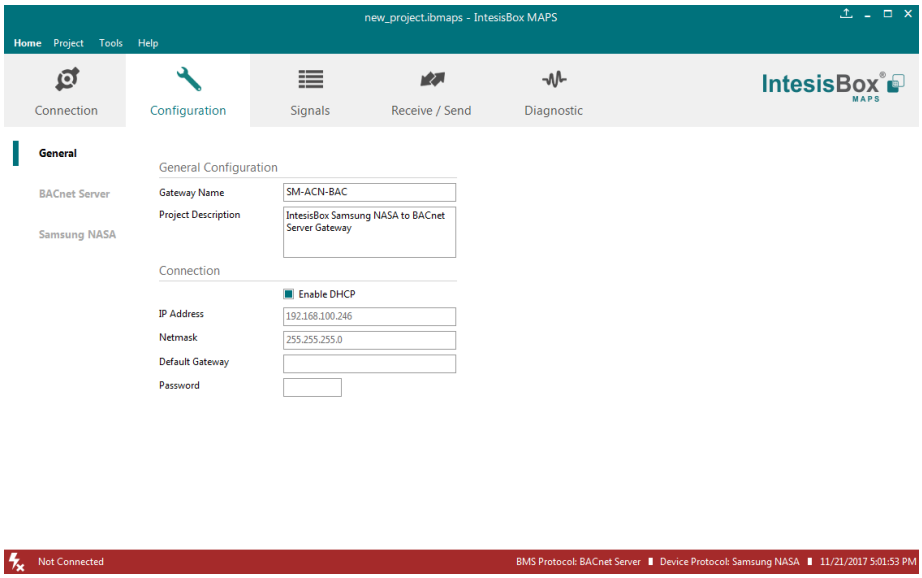



**Figure 7.2** Intesis MAPS configuration tab

### 7.2.4 BACnet Server configuration

Set parameters of BACnet interface of Intesis.

Find description of these settings in *Intesis MAPS BACnet User Manual*.

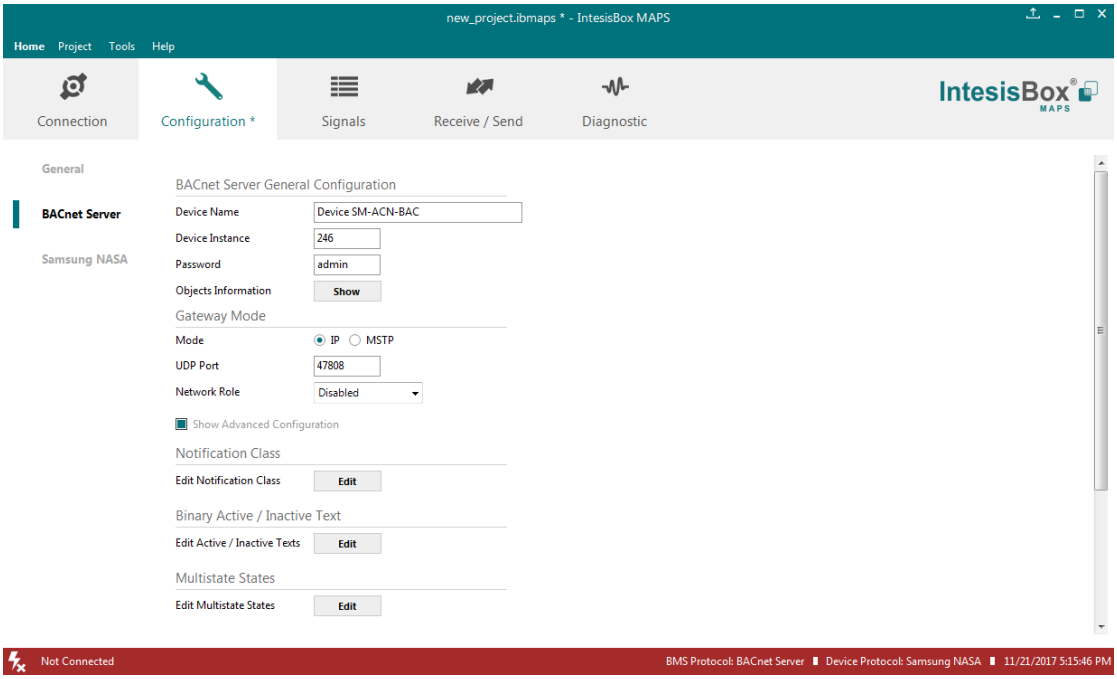



**Figure 7.3** Intesis MAPS BACnet configuration tab

### 7.2.5 Samsung NASA configuration

Set parameters for connection with Samsung NASA's installation.

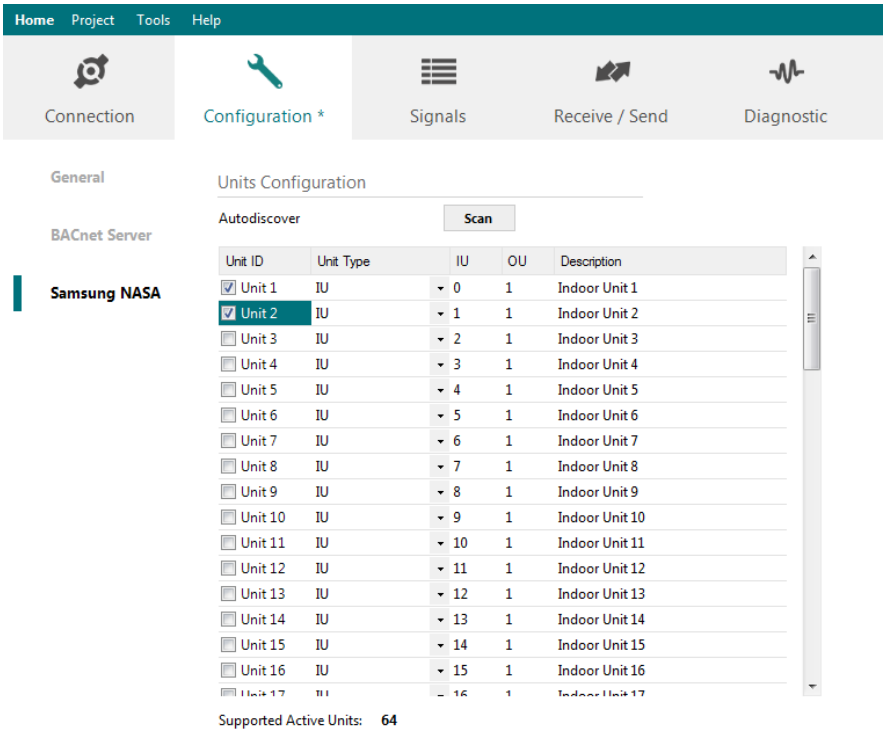



**Figure 7.4** Intesis MAPS Samsung NASA configuration tab

In Units Configuration section you need to enter, for each unit:

- **Active**. If it's active (checkbox at Unit xx), ranging from 1 to 64 indoor units that will be integrated (maximum number of units will depend on Intesis model)
- **Unit type**. Type can be one of the following: IU, HE, HT, EHS, AHU, ERV, ERV+, CHILLER. Available signals will vary according to unit type.
- **IU address**. Address 0..63 of Unit in Samsung NASA R1/R2 bus. Remember that manual addressing of Samsung indoor units is required.
- **OU address**. Address 0..15 of Outdoor Unit in Samsung NASA R1/R2 bus. Remember that manual addressing of Samsung indoor units is required.
- **Description**. Descriptive name to ease identification of the unit (for example, 'living room floor 1 unit', etc).

Additional to manual entry of each unit, autodiscover of present units in an R1/R2 installation is possible. To do so, click button **Scan**. Following window will appear:

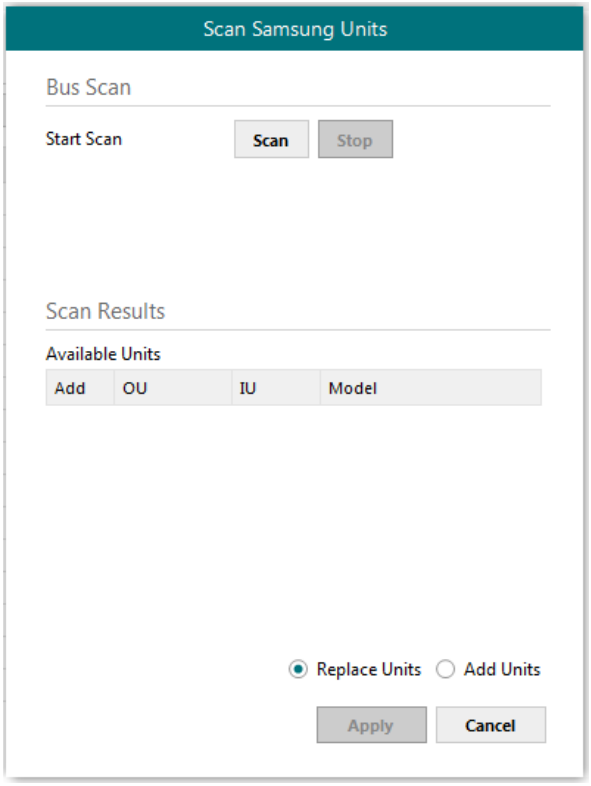



**Figure 7.5** Intesis MAPS Scan Samsung Units window

By pressing **Scan** button, connected Samsung NASA R1/R2 bus will be scanned for available units. Error window will appear if there is a problem in the connection with R1/R2 bus (units not powered, bus not connected, …).

A progress bar will appear during the scan, which will take up to a few minutes. After scan is completed, detected units will be shown in available units as follows:

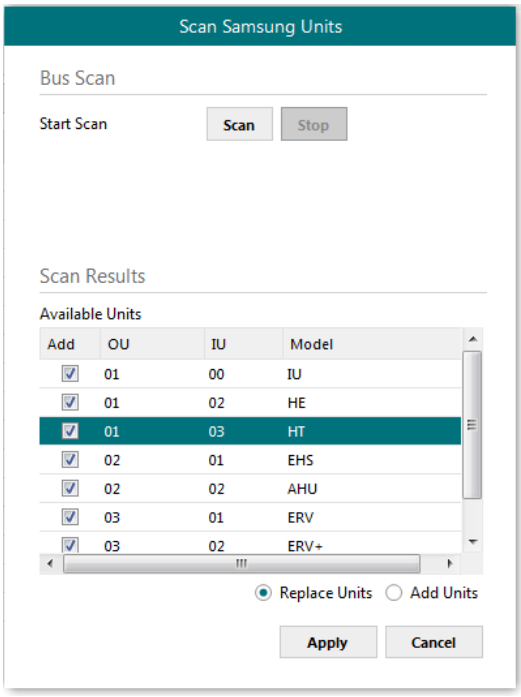



**Figure 7.6** Intesis MAPS Scan Samsung Units window with scan results

Select with its checkbox units to add (or replace) in installation, according to selection **Replace Units** / **Add Units**. After units to be integrated are selected, click button **Apply**, and changes will appear in previous **Units Configuration** window.

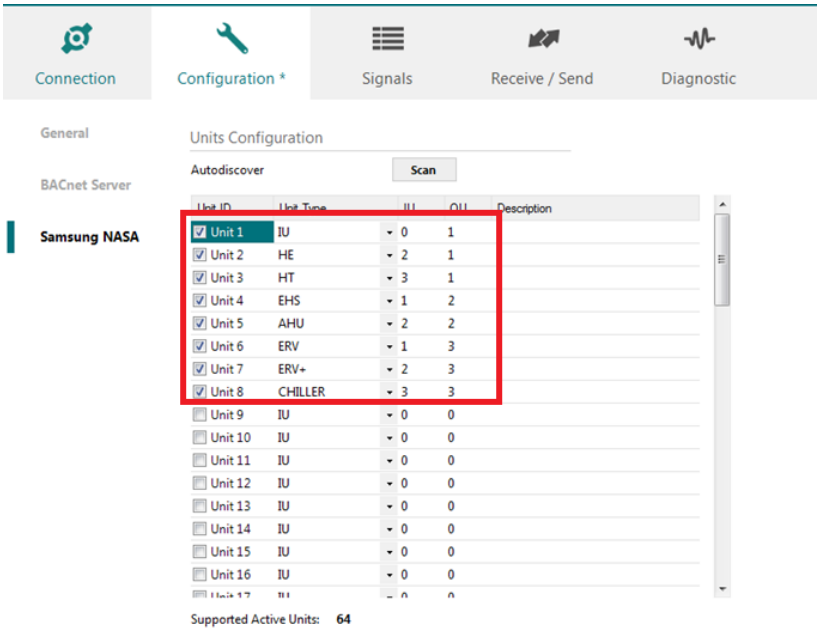



**Figure 7.7** Intesis MAPS Samsung NASA configuration tab after importing scan results

## 7.2.6 Signals

All available objects, Object Instances, its corresponding AC signal and other main parmaters are listed in the signals tab. More information on each parameter and how to configure it can be found in the Intesis MAPS BACnet user manual.

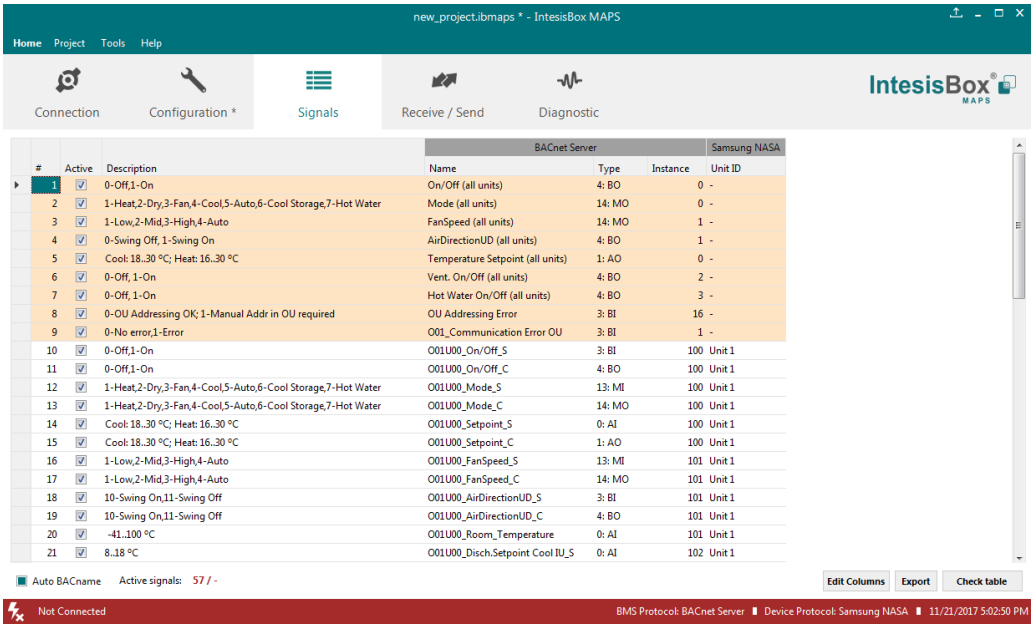



**Figure 7.8** Intesis MAPS Signals tab

### 7.2.7 Sending the configuration to Intesis

When the configuration is finished, follow the next steps.

1.- Save the project (Menu option ***Project->Save***) on your hard disk (more information in Intesis MAPS User Manual).

2.- Go to tab '**Receive / Send**' of MAPS, and in **Send** section, press ***Send*** button. Intesis will reboot automatically once the new configuration is loaded.

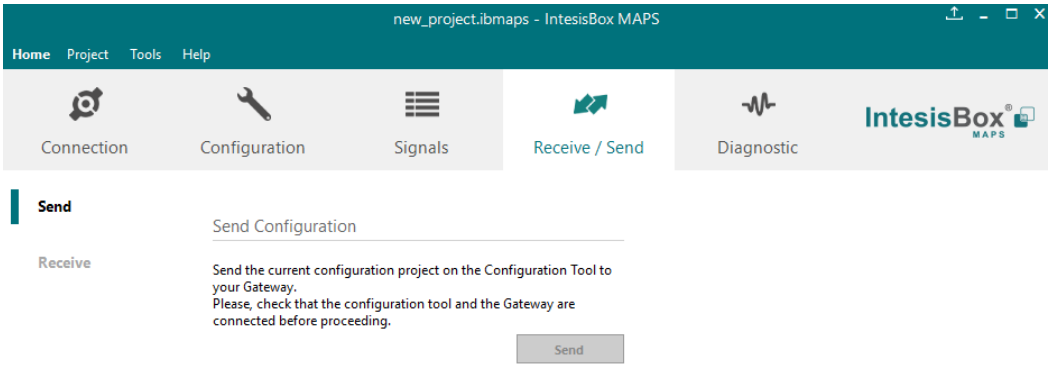



**Figure 7.9** Intesis MAPS Receive/Send tab

**After any configuration change, do not forget to send the configuration file to the Intesis using button Send File.**

### 7.2.8 Diagnostic

To help integrators in the commissioning tasks and troubleshooting, the Configuration Tool offers some specific tools and viewers.

In order to start using the diagnostic tools, connection with the Gateway is required.

The Diagnostic section is composed by two main parts: Tools and Viewers.

- **Tools**
  Use the tools section to check the current hardware status of the box, log communications into compressed files to be sent to the support, change the Diagnostic panels' view or send commands to the gateway.

- **Viewers**
  In order to check the current status, viewer for the Internal and External protocols are available. It is also available a generic Console viewer for general information about communications and the gateway status and finally a Signals Viewer to simulate the BMS behavior or to check the current values in the system.

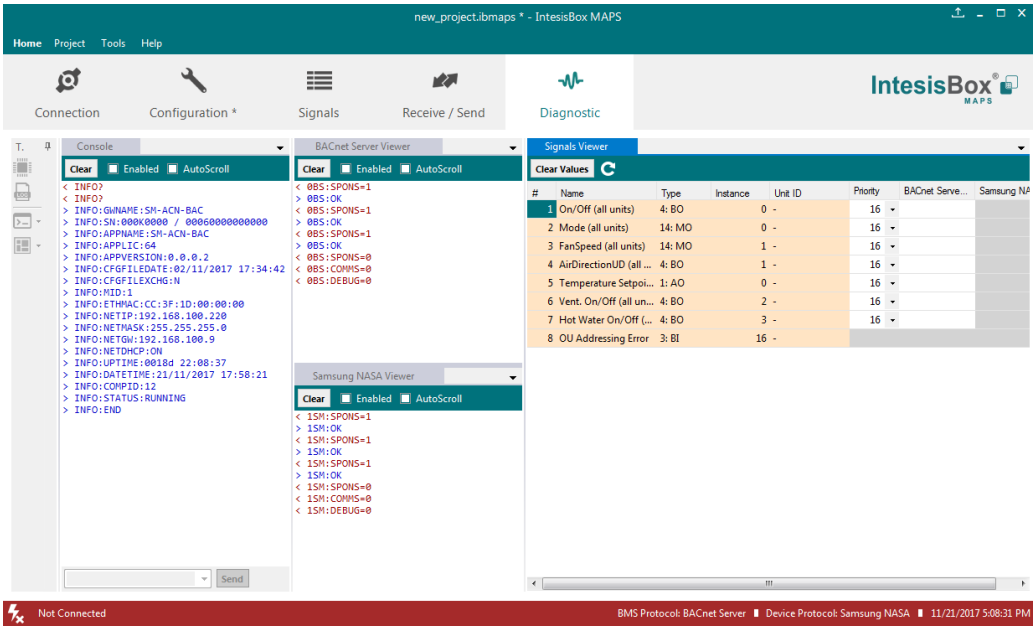



**Figure 7.10** Diagnostic

More information about the Diagnostic section can be found in the Configuraion Tool manual.

### 7.2.9 Set-up procedure

1. Install Intesis MAPS on your laptop, use the setup program supplied for this and follow the instructions given by the Installation wizard.

2. Install Intesis in the desired installation site. Installation can be on DIN rail or on a stable not vibrating surface (DIN rail mounted inside a metallic industrial cabinet connected to ground is recommended).

3. If using BACnet IP, connect the communication cable coming from the BACnet IP network to the port marked as Ethernet on Intesis (More details in section 6).

   If using BACnet MSTP, connect the communication cables coming from the BACnet MSTP network to the port marked as Port B on Intesis (More details in section 6).

4. Connect the communication cable coming from the Samsung NASA R1/R2 installation to the port marked as Port A of Intesis (More details in section 6).

5. Power up Intesis. The supply voltage can be 9 to 30 Vdc or just 24 Vac. Take care of the polarity of the supply voltage applied.

   **WARNING!** In order to avoid earth loops that can damage Intesis and/or any other equipment connected to it, we strongly recommend:

   - The use of DC power supplies, floating or with the negative terminal connected to earth. **Never use a DC power supply with the positive terminal connected to earth**.
   - The use of AC power supplies only if they are floating and not powering any other device.

6. If you want to connect using IP, connect the Ethernet cable from the laptop PC to the port marked as Ethernet of Intesis (More details in section 6).

   If you want to connect using USB, connect the USB cable from the laptop PC to the port marked as Console of Intesis (More details in section 6).

7. Open Intesis MAPS, create a new project selecting a copy of the one named **INBACSAM---O000**.

8. Modify the configuration as desired, save it and download the configuration file to Intesis as explained in the Intesis MAPS user manual.

9. Visit the Diagnostic section and check that there is communication activity, some TX frames and some other RX frames. This means that the communication with the BACnet master device and Samsung installation is OK. In case there is no communication activity between Intesis and the BACnet and/or Samsung units, check that those are operative: check communication cable used to connect all devices and any other communication parameter.

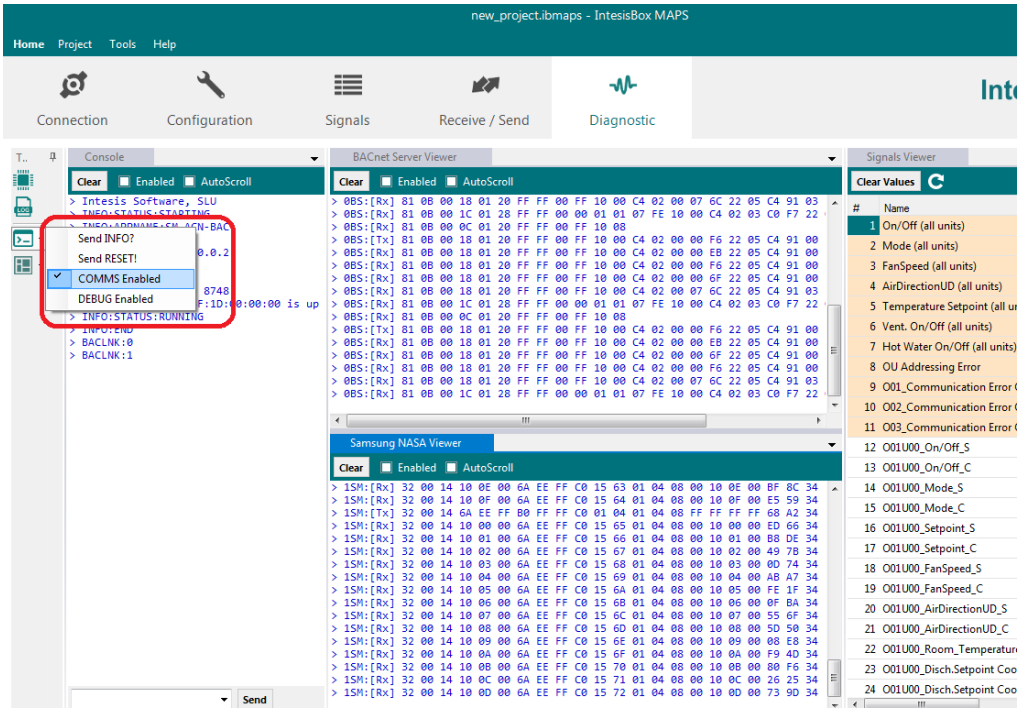


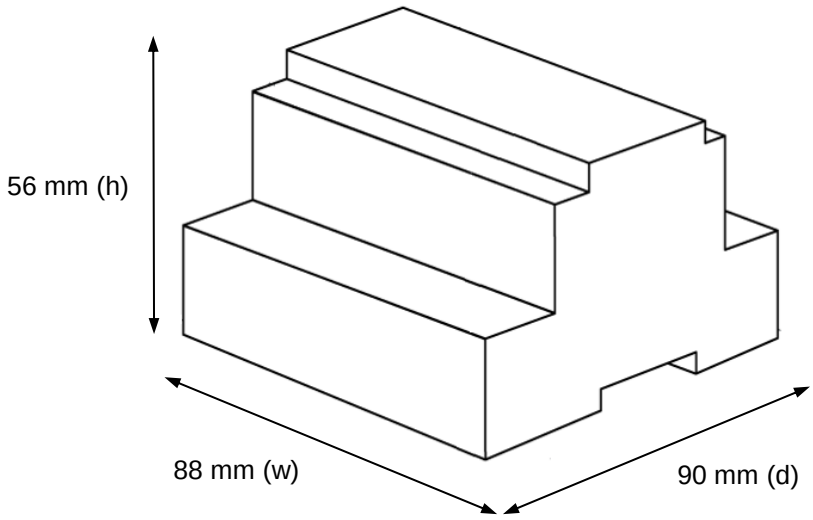

**Figure 7.11** Enable COMMS

# 8 Electrical & Mechanical Features

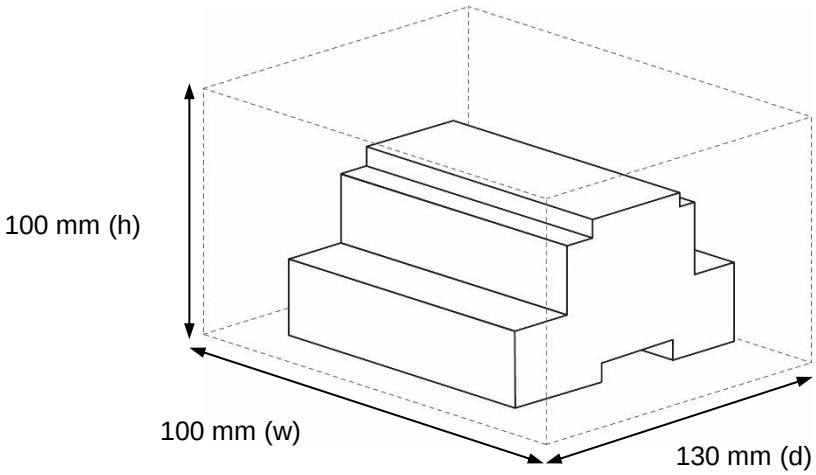

| | |
|---|---|
| **Enclosure** | Plastic, type PC (UL 94 V-0)<br>Net dimensions (dxwxh): 90x88x56 mm<br>Recommended space for installation (dxwxh): 130x100x100mm<br>Color: Light Grey. RAL 7035 |
| **Mounting** | Wall.<br>DIN rail EN60715 TH35. |
| **Terminal Wiring** (for power supply and low-voltage signals) | Per terminal: solid wires or stranded wires (twisted or with ferrule)<br>1 core: 0.5mm$^2$… 2.5mm$^2$<br>2 cores: 0.5mm$^2$… 1.5mm$^2$<br>3 cores: not permitted |
| **Power** | 1 x Plug-in screw terminal block (3 poles)<br>9 to 36VDC +/-10%, Max.: 140mA.<br>24VAC +/-10% 50-60Hz, Max.: 127mA<br>Recommended: 24VDC |
| **Ethernet** | 1 x Ethernet 10/100 Mbps RJ45<br>2 x Ethernet LED: port link and activity |
| **Port A** | 1 x Samsung Nasa port Plug-in screw terminal block orange (2 poles)<br>R1 R2 (Samsung Nasa)<br>1 x Plug-in screw terminal block green (2 poles)<br>Reserved for future use<br>1500VDC isolation from other ports |
| **Switch A** (SWA) | 1 x DIP-Switch for PORTB configuration:<br>Reserved for future use, leave defaults (all OFF) |
| **PORT B** | 1 x Serial EIA232 (SUB-D9 male connector)<br>*Not used*<br>1 x Serial EIA485 Plug-in screw terminal block (3 poles)<br>A, B, SGND (Reference ground or shield)<br>1500VDC isolation from other ports<br>*(except PORT B: EIA232)* |
| **Switch B** (SWB) | 1 x DIP-Switch for serial EIA485 configuration:<br>Position 1:<br>**ON:** 120 Ω termination active<br>**Off:** 120 Ω termination inactive (default)<br>Position 2-3:<br>**ON:** Polarization active<br>**Off:** Polarization inactive (default) |

| | |
|---|---|
| **Battery** | Size: Coin 20mm x 3.2mm<br>Capacity: 3V / 225mAh<br>Type: Manganese Dioxide Lithium |
| **Console Port** | Mini Type-B USB 2.0 compliant<br>1500VDC isolation |
| **USB port** | Type-A USB 2.0 compliant<br>Only for USB flash storage device<br>*(USB pen drive)*<br>Power consumption limited to 150mA<br>*(HDD connection not allowed)* |
| **Push Button** | Button A: Not used<br>Button B: Sends I-Am message to all BACnet ports |
| **Operation Temperature** | 0°C to +60°C |
| **Operational Humidity** | 5 to 95%, no condensation |
| **Protection** | IP20 (IEC60529) |
| **LED Indicators** | 10 x On board LED indicators<br>1 x Error LED<br>1 x Power LED<br>2 x Ethernet Link/Speed<br>2 x Port A TX/RX<br>2 x Port B TX/RX<br>1 x Button A indicator<br>1 x Button B indicator |

# 9 Dimensions




Recommended available space for its installation into a cabinet (wall or DIN rail mounting), with space enough for external connections



# 10 AC Unit Types compatibility

A list of Samsung unit model references compatible with INBACSAM---O000 and their available features can be found in:

https://www.intesis.com/docs/compatibilities/inxxxsam0xxo000_compatibility

Error codes for Indoor and Outdoor Units

This list contains all possible values shown in Bacnet Object for "Error Code" for each indoor unit and outdoor unit.

It must be taken into account that Outdoor Units are only able to reflect a single error for each indoor / outdoor unit in the system. Thus, a unit having two or more active errors from that list will only report a single error code – the one of the first error that has been detected.

| Error Code | Description |
|---|---|
| 101 | Indoor unit communication error. Indoor unit can not receive any data from outdoor unit. |
| 102 | Communication error between indoor unit and outdoor unit. Displayed in indoor unit. |
| 108 | Error due to repeated address setting (When 2 or more devices has same address within the |
| 110 | Communication error between Hydro unit HT(Main PBA) and Control kit PBA(Detection from the Control kit) |
| 121 | Error on indoor temperature sensor of indoor unit (Short or Open) |
| 122 | Error on EVA IN sensor of indoor unit (Short or Open) |
| 123 | Error on EVA OUT sensor of indoor unit (Short or Open) |
| 128 | EVA IN temperature sensor of indoor unit is detached from EVA IN pipe |
| 129 | EVA OUT temperature sensor of indoor unit is detached from EVA OUT pipe |
| 130 | Heat exchanger in/out sensors of indoor unit are detached |
| 135 | RPM feedback error of indoor unit's cleaning fan |
| 151 | Error due to opened EEV of indoor unit (2nd detection) |
| 152 | Error due to closed EEV of indoor unit (2nd detection) |
| 153 | Error on floating switch of indoor unit (2nd detection) |
| 154 | RPM feedback error of indoor unit |
| 161 | Mixed operation mode error of indoor unit; When outdoor unit is getting ready to operate in cooling (or heating) and some of the indoor unit is trying to operate in heating (or cooling) mode |
| 162 | EEPROM error of MICOM (Physical problem of parts/circuit) |
| 163 | Indoor unit's remote controller option input is Incorrect or missing. Outdoor unit EEPROM data error |
| 180 | Simultaneous opening of cooling/heating MCU SOL V/V (1st detection) |
| 181 | Simultaneous opening of cooling/heating MCU SOL V/V (2nd detection) |
| 185 | Cross wiring error between communication and power cable of indoor unit |
| 186 | Connection error or problem on SPi |
| 190 | No temperature changes in EVA IN during pipe inspection or changes in temperature indoor unit with wrong address |
| 191 | No temperature changes in EVA OUT during pipe inspection or changes in temperature is seen in indoor unit with wrong address |
| 198 | Error due to disconnected thermal fuse of indoor unit |
| 201 | Communication error between indoor and outdoor units (installation number setting error, repeated indoor unit address, indoor unit communication cable error) |
| 202 | Communication error between indoor and outdoor units (Communication error on all indoor unit, outdoor unit communication cable error) |
| 203 | Communication error between main and sub outdoor units |
| 205 | Communication error on all PBA within the outdoor unit C-Box, communication cable error |
| 206 | E206-C001: HUB PBA communication error / E206-C002: FAN PBA communication errorE206-C003:INV1 PBA communication error / E206-C004: INV2 PBA communication error |
| 211 | When single indoor unit uses 2 MCU ports that are not in series. |
| 212 | If the rotary switch (on the MCU) for address setting of the indoor unit has 3 or more of the same address |

| | |
|---|---|
| 213 | When total number of indoor units assigned to MCU is same as actual number of installed indoor units but there is indoor unit that is not installed even though it is assigned on MCU |
| 214 | When number of MCU is not set correctly on the outdoor unit or when two or more MCU was installed some of them have the same address |
| 215 | When two different MCU's have same address value on the rotary switch |
| 216 | When indoor unit is not installed to a MCU port but the switch on the port is set to On. |
| 217 | hen indoor unit is connected to a MCU port but indoor unit is assigned to a MCU and the switch on the port is set to Off |
| 218 | When there's at least one or more actual number of indoor unit connection compared to number of indoor units assigned to MCU |
| 219 | Error on temperature sensor located on MCU intercooler inlet (Short or Open) |
| 220 | Error on temperature sensor located on MCU intercooler outlet (Short or Open) |
| 221 | Error on outdoor temperature sensor of outdoor unit (Short or open) |
| 231 | Error on COND OUT temperature sensor of main outdoor unit (Short or Open) |
| 241 | COND OUT sensor is detached |
| 251 | Error on discharge temperature sensor of compressor 1 (Short or Open) |
| 257 | Error on discharge temperature sensor of compressor 2 (Short or Open) |
| 262 | Discharge temperature sensor of compressor 1 is detached from the sensor holder on the pipe |
| 263 | Discharge temperature sensor of compressor 2 is detached from the sensor holder on the pipe |
| 266 | Top sensor of compressor 1 is detached |
| 267 | Top sensor of compressor 2 is detached |
| 269 | Suction temperature sensor is detached from the sensor holder on the pipe |
| 276 | Error on top sensor of compressor 1 (Short or Open) |
| 277 | Error on top sensor of compressor 2 (Short or Open) |
| 291 | Refrigerant leakage or error on high pressure sensor (Short or Open) |
| 296 | Refrigerant leakage or error on low pressure sensor (Short or Open) |
| 308 | Error on suction temperature sensor (Short or Open) |
| 311 | Error on temperature sensor of double layer pipe/liquid pipe(sub heat exchanger) (Short or Open) |
| 321 | Error on EVI (ESC) IN temperature sensor (Short or Open) |
| 322 | Error on EVI (ESC) OUT temperature sensor (Short or Open) |
| 323 | Error on suction sensor 2 (Short or Open) |
| 346 | Error due to operation failure of Fan2 |
| 347 | Motor wire of Fan2 is not connected |
| 348 | Lock error on Fan2 of outdoor unit |
| 353 | Error due to overheated motor of outdoor unit's Fan2 |
| 355 | Error due to overheated IPM of Fan2 |
| 361 | Error due to operation failure of inverter compressor 2 |
| 364 | Error due to over-current of inverter compressor 2 |
| 365 | V-limit error of inverter compressor 2 |
| 366 | Error due to over voltage /low voltage of inverter PBA2 |
| 367 | Error due to unconnected wire of compressor 2 |
| 368 | Output current sensor error of inverter PBA2 |
| 369 | DC voltage sensor error of inverter PBA2 |
| 374 | Heat sink temperature sensor error of inverter PBA2 |
| 378 | Error due to overcurrent of Fan2 |
| 385 | Error due to input current of inverter 2 |
| 386 | Over-voltage/low-voltage error of Fan2 |

| | |
|---|---|
| 387 | Hall IC connection error of Fan2 |
| 389 | V-limit error on Fan2 of compressor |
| 393 | Output current sensor error of Fan2 |
| 396 | DC voltage sensor error of Fan2 |
| 399 | Heat sink temperature sensor error of Fan2 |
| 400 | Error due to overheat caused by contact failure on IPM of Inverter PBA2 |
| 407 | Compressor operation stop due to high pressure protection control |
| 410 | Compressor operation stop due to low pressure protection control or refrigerant leakage |
| 416 | Compressor operation stop due to discharge temperature protection control |
| 425 | Phase reversal or phase failure (3Ø outdoor unit wiring, R-S-T-N ), connection error on 3 phase input |
| 428 | Compressor operation stop due abnormal compression ratio |
| 438 | EVI (ESC) EEV leakage or internal leakage of intercooler or incorrect connector insertion of EVI (ESC) EEV |
| 439 | Error due to refrigerant leakage |
| 440 | Heating mode restriction due to high air temperature |
| 441 | Cooling mode restriction due to low air temperature |
| 442 | Refrigerant charing restriction in heating mode when air temperature is over 15 °C |
| 443 | Operation prohibited due to the pressure drop |
| 445 | CCH is deatched |
| 446 | Error due to operation failure of Fan1 |
| 447 | Motor wire of Fan1 is not connected |
| 448 | Lock error on Fan1 |
| 452 | Error due to ZPC detection circuit problem or power failure |
| 453 | Error due to overheated motor of outdoor unit's Fan1 |
| 455 | Error due to overheated IPM of Fan1 |
| 461 | Error due to operation failure of inverter compressor 1 |
| 462 | Compressor stop due to full current control or error due to low current on CT2 |
| 464 | Error due to over-current of inverter compressor 1 |
| 465 | V-limit error of inverter compressor 1 |
| 466 | Error due to over voltage /low voltage of inveter PBA1 |
| 467 | Error due to unconnected wire of compressor 1 |
| 468 | Output current sensor error of inverter PBA1 |
| 469 | DC voltage sensor error of inver PBA1 |
| 474 | Heat sink temperature sensor error of inverter PBA1 |
| 478 | Error due to overcurrent of Fan1 |
| 485 | Error due to input current of inverter 1 |
| 486 | Error due to over voltage/low voltage of Fan |
| 487 | Hall IC error of Fan1 |
| 489 | V-limit error on Fan1 of compressor |
| 493 | Output current sensor error of Fan1 |
| 496 | DC voltage sensor error of Fan1 |
| 499 | Heat sink temperature sensor error of Fan1 |
| 500 | Error due to overheat caused by contact failure on IPM of Inverter PBA1 |
| 503 | Error due to alert the user to check if the service valve is closed |
| 504 | Error due to self diagnosis of compressor operation |
| 505 | Error due to self diagnosis of high pressure sensor |
| 506 | Error due to self diagnosis of low pressure sensor |
| 560 | Outdoor unit's option switch setting error (when iinappropriate option switch is on) |
| 563 | Error due to module installation of indoor unit with old version (Micom version needs to be |

| | |
|---|---|
| | checked) |
| 573 | Error due to using single type outdoor unit in a module installation |
| 601 | Communication error between remote controller and the DVM Hydro unit / Hydro unit HT |
| 602 | Communication error between master and slave remote controller |
| 604 | Tracking error between remote controller and the DVM Hydro unit / Hydro unit HT |
| 618 | Error due to exceeding maximum numbers of Hydro unit installation (16 units) |
| 627 | Error due to exceeding maximum numbers of wired remote controller installation (2 units) |
| 633 | Error caused by installing mixed models |
| 653 | Remote controller's temperature sensor is disconnected or has problem |
| 654 | Data error on remote controller (Memory read/write error) |
| 702 | Error due to closed EEV of indoor unit (1st detection) |
| 703 | Error due to opened EEV of indoor unit (1st detection) |
| 901 | Error on the sensor of water inlet pipe (Short or Open) |
| 902 | Error on the sensor of water outlet pipe (Short or Open) |
| 904 | Error on water tank (Short or open) |
| 907 | Error due to pipe rupture protection |
| 908 | Error due to freeze prevention(Re-operation is possible) |
| 909 | Error due to freeze prevention(Re-operation is impossible) |
| 910 | Water temperature sensor on water outlet pipe is detached |
| 911 | Flow switch off error, When the switch is turned off within 10 seconds after a pump starts its operation(Re-operation is possible) |
| 913 | Six times detection for Flow Switch Error(Re-operation is not possible) |
| 914 | Error due to incorrect thermostat connection |
| 915 | Error on DC fan(Non-operating) |
| 573 | Error due to using single type outdoor unit in a module installation |
| 601 | Communication error between remote controller and the DVM Hydro unit / Hydro unit HT |
| 602 | Communication error between master and slave remote controller |
| 604 | Tracking error between remote controller and the DVM Hydro unit / Hydro unit HT |
| 618 | Error due to exceeding maximum numbers of Hydro unit installation (16 units) |
| 627 | Error due to exceeding maximum numbers of wired remote controller installation (2 units) |
| 633 | Error caused by installing mixed models |
| 653 | Remote controller's temperature sensor is disconnected or has problem |
| 654 | Data error on remote controller (Memory read/write error) |
| 702 | Error due to closed EEV of indoor unit (1st detection) |
| 703 | Error due to opened EEV of indoor unit (1st detection) |
| 901 | Error on the sensor of water inlet pipe (Short or Open) |
| 902 | Error on the sensor of water outlet pipe (Short or Open) |
| 904 | Error on water tank (Short or open) |
| 907 | Error due to pipe rupture protection |
| 908 | Error due to freeze prevention(Re-operation is possible) |
| 909 | Error due to freeze prevention(Re-operation is impossible) |
| 910 | Water temperature sensor on water outlet pipe is detached |
| 911 | Flow switch off error, When the switch is turned off within 10 seconds after a pump starts its operation(Re-operation is possible) |
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