



# **IntesisBox® BACnet Server**

Panasonic VRF

## User Manual

Issue Date: 03/2019  
R1.0 EN

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Gateway for the integration of Panasonic Air Conditioning into BACnet/IP or BACnet MSTP control and monitoring systems.

Order code:

**IBBACPAN016O000, 16 Panasonic indoor units into Bacnet IP or MSTP**  
**IBBACPAN064O000, 64 Panasonic indoor units into Bacnet IP or MSTP**  
**IBBACPAN128O000, 128 Panasonic indoor units into Bacnet IP**

## INDEX

1	Description .....	7
1.1	Introduction.....	7
1.2	Functionality .....	8
1.3	Capacity of IntesisBox.....	8
2	Protocol Implementation Conformance Statement.....	9
2.1	BACnet Standardized Device Profile (Annex L):.....	9
2.2	Segmentation Capability: .....	9
2.3	Data Link Layer Options:.....	9
2.4	Device Address Binding: .....	10
2.5	Networking Options: .....	10
2.6	Character Sets Supported.....	10
2.7	Gateway .....	10
3	BACnet Interoperability Building Blocks Supported (BIBBs) .....	11
3.1	Data Sharing BIBBs .....	11
3.2	Alarm and Event Management BIBBs.....	11
3.3	Scheduling BIBBs.....	12
3.4	Trending BIBBs .....	12
3.5	Network Management BIBBs .....	12
3.6	Device Management BIBBs .....	13
4	Service Types .....	14
5	Objects .....	15
5.1	Supported Object Types.....	15
5.2	Member objects .....	17
5.2.1	Type: Gateway.....	17
5.2.2	Type: Central control .....	17
5.2.3	Type: Outdoor Unit .....	17
5.2.4	Type: Indoor Unit .....	17
5.3	Objects and properties .....	20
5.3.1	PA-AC-BAC (Device Object Type).....	20
5.3.2	Occupancy Cool Setpoint (Analog Value Object Type).....	22
5.3.3	Occupancy Heat Setpoint (Analog Value Object Type) .....	23
5.3.4	Unoccupancy Cool Setpoint (Analog Value Object Type).....	24
5.3.5	Unoccupancy Heat Setpoint (Analog Value Object Type).....	25
5.3.6	OccupancyContinuousCheck (Binary Value Object Type) .....	26
5.3.7	Unoccupancy Deadband Action (Multistate Value Object Type) .....	27
5.3.8	On/Off (all units) (Binary Output Object Type) .....	28
5.3.9	Mode (all units) (Multistate Output Object Type) .....	29

5.3.10	FanSpeed (all units) (Multistate Input Object Type) .....	30
5.3.11	Vane position (all units) (Multistate Input Object Type) .....	31
5.3.12	Temperature Setpoint (all units) (Analog Output Object Type) .....	32
5.3.13	LxOxx_Demand Limit Ratio (Analog Input Object Type) .....	33
5.3.14	LXOUXX_High Pressure Sensor. (Analog Input Object Type) .....	34
5.3.15	LXOUXX_Low Pressure Sensor. (Analog Input Object Type) .....	35
5.3.16	LxOUxx_Working Time (Analog Input Object Type) .....	36
5.3.17	LxOxxUxx On/Off_S (Binary Input Object Type) .....	37
5.3.18	LxOxxUxx_On/Off_C (Binary Output Object Type) .....	38
5.3.19	LXOXXUXX_Mode_S (Multistate Input Object Type) .....	39
5.3.20	LXOXXUXX_Mode_C (Multistate Input Object Type) .....	40
5.3.21	LxOxxUxx_Setpoint_S (Analog Input Object Type) .....	41
5.3.22	LxOxxUxx_Setpoint_C (Analog Output Object Type) .....	42
5.3.23	LxOxxUxxFanSpeed_S (Multistate Input Object Type) .....	43
5.3.24	LxOxxUxxFanSpeed_C (Multistate Output Object Type) .....	44
5.3.25	LxOxxUxxVane Position_S (Multistate Input Object Type) .....	45
5.3.26	LxOxxUxxVane Position_C (Multistate Output Object Type) .....	46
5.3.27	LxOxxUxx Room Temp. (Analog Input Object Type) .....	47
5.3.28	LxOxxUxx Wired Remote Controller_S (Binary Input Object Type) .....	48
5.3.29	LxOxxUxx_Wired Remote Controller_C (Binary Output Object Type) .....	49
5.3.30	LXOXXUXX_Disch.Setpoint Cool_S (Analog Input Object Type) .....	50
5.3.31	LxOxxUxx_Disch_Setpoint Cool_C (Analog Output Object Type) .....	51
5.3.32	LXOXXUXX_Disch.Setpoint Heat_S (Analog Input Object Type) .....	52
5.3.33	LxOxxUxx_Disch_Setpoint Heat_C (Analog Output Object Type) .....	53
5.3.34	LXOXXUXX_Disch.Current temperature (Analog Input Object Type) .....	54
5.3.35	LXOXXUXX_Heat Exchanger Temp. (Analog Input Object Type) .....	55
5.3.36	LXOXXUXX_Heat Setpoint Up Limit (Analog Input Object Type) .....	56
5.3.37	LXOXXUXX_Heat Setpoint Down Limit (Analog Input Object Type) .....	57
5.3.38	LXOXXUXX_Cool Setpoint Up Limit (Analog Input Object Type) .....	58
5.3.39	LXOXXUXX_Cool Setpoint Down Limit (Analog Input Object Type) .....	59
5.3.40	LXOXXUXX_Dry Setpoint Up Limit (Analog Input Object Type) .....	60
5.3.41	LXOXXUXX_Dry Setpoint Down Limit (Analog Input Object Type) .....	61
5.3.42	LXOXXUXX_Auto Setpoint Up Limit (Analog Input Object Type) .....	62
5.3.43	LXOXXUXX_Auto Setpoint Down Limit (Analog Input Object Type) .....	63
5.3.44	LXOXXUXX_Unit Error Code (Analog Input Object Type) .....	64
5.3.45	LxOxxUxx Filter Sign (Binary Input Object Type) .....	65
5.3.46	LxOxxUxx_Filter Reset (Binary Output Object Type) .....	66
5.3.47	LxOxxUxx_Allow On/Off from RC_S (Binary Input Object Type) .....	67
5.3.48	LxOxxUxx_Allow On/Off from RC_C (Binary Output Object Type) .....	68

5.3.49 LxOxxUxx_Allow Mode from RC_S (Binary Input Object Type).....	69
5.3.50 LxOxxUxx_Allow Mode from RC_C (Binary Output Object Type).....	70
5.3.51 LxOxxUxx_Allow Setpoint from RC_S (Binary Input Object Type) .....	71
5.3.52 LxOxxUxx_Allow Setpoint from RC_C (Binary Output Object Type) .....	72
5.3.53 LxOxxUxxUnit Type (Multistate Input Object Type) .....	73
5.3.54 LxOxxUxx_Occupancy_S (Multistate Input Object Type) .....	74
5.3.55 LxOxxUxx_Occupancy_C (Multistate Output Object Type) .....	75
<b>6 Connections .....</b>	<b>76</b>
6.1 Connections for 16 (IBBACPAN016O000) and 64 (IBBACPAN064O000) versions .....	76
6.2 Connections for 128 (IBBACPAN128O000) version .....	77
6.3 Power device .....	78
6.4 Connection to BACnet.....	78
6.4.1 BACnet IP .....	78
6.4.2 BACnet MSTP (only available for 16 and 64 versions) .....	78
6.5 Connect to Panasonic P-Link installation .....	78
6.6 Connection to the configuration tool.....	79
<b>7 Set-up process and troubleshooting .....</b>	<b>80</b>
7.1 Pre-requisites .....	80
7.2 IntesisBox MAPS. Configuration & monitoring tool for IntesisBox BACnet series .....	80
7.2.1 Introduction .....	80
7.2.2 Connection.....	80
7.2.3 Configuration tab .....	81
7.2.4 BACnet Server configuration .....	82
7.2.5 Panasonic configuration .....	82
7.2.5.1 Occupancy Function.....	85
7.2.6 Signals .....	87
7.2.7 Sending the configuration to IntesisBox .....	87
7.2.8 Diagnostic .....	88
7.2.9 Set-up procedure .....	89
<b>8 Electrical &amp; Mechanical Features.....</b>	<b>91</b>
8.1 IntesisBox BACnet Server for Panasonic 16 and 64 units.....	91
8.2 IntesisBox BACnet IP Server for Panasonic 128 units.....	92
<b>9 Dimensions .....</b>	<b>93</b>
<b>10 Error codes for Indoor and Outdoor Units .....</b>	<b>94</b>

# 1 Description

## 1.1 Introduction

This document describes the integration of Panasonic VRF air conditioning systems into BACnet compatible devices and systems using gateway *IntesisBox BACnet Server – Panasonic VRF*.

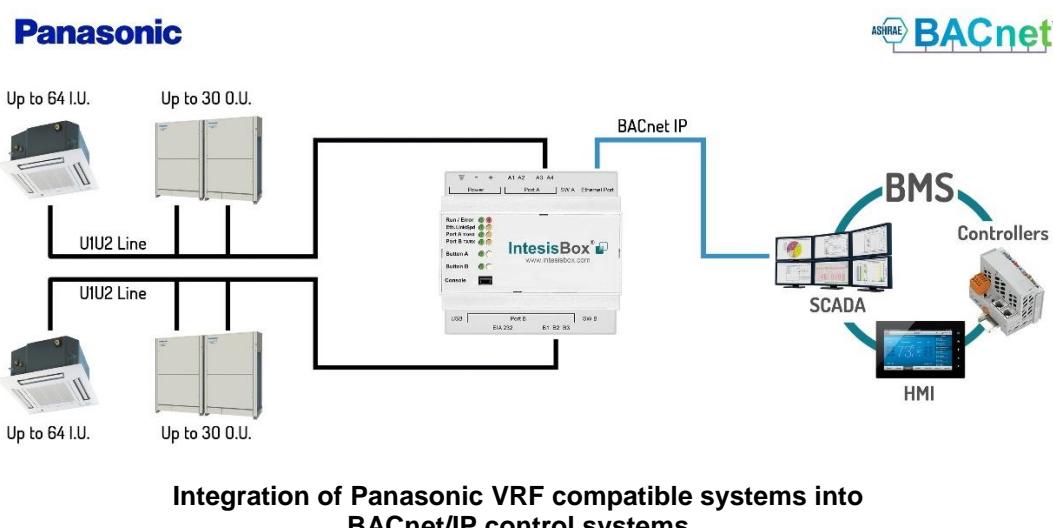
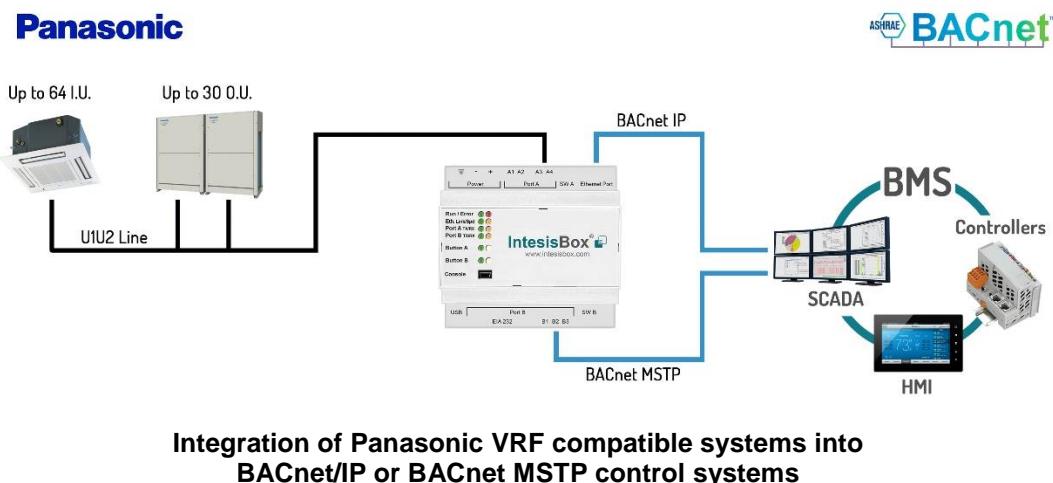
The aim of this integration is to monitor and control your Panasonic air conditioning system, remotely, from your Control Center using any commercial SCADA or monitoring software that includes a BACnet/IP or BACnet MSTP driver. To do it so, IntesisBox allows BACnet/IP and BACnet MSTP communication, acting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

IntesisBox makes available the Panasonic VRF conditioning system indoor units through independent BACnet objects.

IntesisBox provides a fixed BACnet object IDs mapping based on Indoor unit addresses. Simple configuration is needed: just select the appropriate communication parameters (IP address, baud rate...).

Up to 128 indoor units supported, depending on product version.

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



## 1.2 Functionality

IntesisBox® continuously monitors Panasonic VRF 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 indoor units are permitted.

Each indoor unit is presented as a set of BACnet objects.

Element	Object supported
Outdoor Unit	<ul style="list-style-type: none"> <li>Status</li> </ul>
Indoor Unit	<ul style="list-style-type: none"> <li>Status</li> <li>Command</li> <li>Communication status</li> </ul>
General signals (all units)	<ul style="list-style-type: none"> <li>Command</li> </ul>

## 1.3 Capacity of IntesisBox

Element	Max.	Notes
Number of indoor units	128*	Number of indoor units that can be controlled through IntesisBox

\* There are different models of *IntesisBox BACnet Server – Panasonic VRF* each one with different capacity. The table above shows the capacity for the top model (with maximum capacity).

Their order codes are:

- IBBACPAN016O000: BACnet IP + MSTP supporting up to 16 indoor units
- IBBACPAN064O000: BACnet IP + MSTP supporting up to 64 indoor units
- IBBACPAN128O000: BACnet IP supporting up to 128 indoor units

## 2 Protocol Implementation Conformance Statement

### BACnet Protocol Implementation Conformance Statement (PICS)

Date: 2018-04-20

Vendor Name: Intesis Software SLU

Product Name: IntesisBox-BACnet-Panasonic VRF

Product Model Number: PA-AC-BAC

Application Software Version: 1.0.0.0

Firmware Revision: 14.1.0.0

BACnet Protocol Revision: 14

#### Product Description:

Panasonic VRF to BACnet Gateway

Abstraction of Panasonic air conditioning system properties and functionalities as BACnet Objects.  
Capacity of 16, 64 or 128 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 (**only for 16&64 versions**)
- 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.

- |   |   |                                     |
|---|---|-------------------------------------|
| <input checked="" type="checkbox"/> ISO 10646 (UTF-8) | <input type="checkbox"/> IBM™/Microsoft™ DBCS | <input type="checkbox"/> ISO 8859-1 |
| <input type="checkbox"/> ISO 10646 (UCS-2)            | <input type="checkbox"/> ISO 10646 (UCS-4)    | <input type="checkbox"/> 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:

Panasonic VRF 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	<input type="checkbox"/>	ReadProperty	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-RP-B	Data Sharing-ReadProperty-B	<input checked="" type="checkbox"/>	ReadProperty	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-RPM-A	Data Sharing-ReadPropertyMultiple-A	<input type="checkbox"/>	ReadPropertyMultiple	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-RPM-B	Data Sharing-ReadPropertyMultiple-B	<input checked="" type="checkbox"/>	ReadPropertyMultiple	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-RPC-A	Data Sharing-ReadPropertyConditional-A	<input type="checkbox"/>	ReadPropertyConditional	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-RPC-B	Data Sharing-ReadPropertyConditional-B	<input type="checkbox"/>	ReadPropertyConditional	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-WP-A	Data Sharing-WriteProperty-A	<input type="checkbox"/>	WriteProperty	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-WP-B	Data Sharing-WriteProperty-B	<input checked="" type="checkbox"/>	WriteProperty	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-WPM-A	Data Sharing-WritePropertyMultiple-A	<input type="checkbox"/>	WritePropertyMultiple	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-WPM-B	Data Sharing-WritePropertyMultiple-B	<input checked="" type="checkbox"/>	WritePropertyMultiple	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-COV-A	Data Sharing-COV-A	<input type="checkbox"/>	SubscribeCOV	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	ConfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-COV-B	Data Sharing-COV-B	<input checked="" type="checkbox"/>	SubscribeCOV	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	ConfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-COVP-A	Data Sharing-COVP-A	<input type="checkbox"/>	SubscribeCOVProperty	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	ConfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-COVP-B	Data Sharing-COVP-B	<input type="checkbox"/>	SubscribeCOVProperty	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	ConfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DS-COVU-A	Data Sharing-COV-Unsubscribed-A	<input type="checkbox"/>	UnconfirmedCOVNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DS-COVU-B	Data Sharing-COV- Unsubscribed -B	<input type="checkbox"/>	UnconfirmedCOVNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 3.2 Alarm and Event Management BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
AE-N-A	Alarm and Event-Notification-A	<input type="checkbox"/>	ConfirmedEventNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedEventNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-N-I-B	Alarm and Event-Notification Internal-B	<input checked="" type="checkbox"/>	ConfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	UnconfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-N-E-B	Alarm and Event-Notification External-B	<input type="checkbox"/>	ConfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	UnconfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-ACK-A	Alarm and Event-ACK-A	<input type="checkbox"/>	AcknowledgeAlarm	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-ACK-B	Alarm and Event-ACK-B	<input checked="" type="checkbox"/>	AcknowledgeAlarm	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-ASUM-A	Alarm and Event-Alarm Summary-A	<input type="checkbox"/>	GetAlarmSummary	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-ASUM-B	Alarm and Event-Alarm Summary-B	<input checked="" type="checkbox"/>	GetAlarmSummary	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-ESUM-A	Alarm and Event-Enrollment Summary-A	<input type="checkbox"/>	GetEnrollmentSummary	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-ESUM-B	Alarm and Event-Enrollment Summary-B	<input type="checkbox"/>	GetEnrollmentSummary	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-INFO-A	Alarm and Event-Information-A	<input type="checkbox"/>	GetEventInformation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-INFO-B	Alarm and Event-Information-B	<input checked="" type="checkbox"/>	GetEventInformation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AE-LS-A	Alarm and Event-LifeSafety-A	<input type="checkbox"/>	LifeSafetyOperation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AE-LS-B	Alarm and Event-LifeSafety-B	<input type="checkbox"/>	LifeSafetyOperation	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.3 Scheduling BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
SCHED-A	Scheduling-A <i>(must support DS-RP-A and DS-WP-A)</i>	<input type="checkbox"/>			
SCHED-I-B	Scheduling-Internal-B <i>(shall support DS-RP-B and DS-WP-B)</i> <i>(shall also support either DM-TS-B or DS-UTC-B)</i>	<input checked="" type="checkbox"/>			
SCHED-E-B	Scheduling-External-B <i>(shall support SCHED-I-B and DS-WP-A)</i>	<input type="checkbox"/>			

### 3.4 Trending BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
T-VMT-A	Trending - Viewing and Modifying Trends-A	<input type="checkbox"/>	ReadRange	<input checked="" type="checkbox"/>	<input type="checkbox"/>
T-VMT-I-B	Trending - Viewing and Modifying Trends Internal-B	<input checked="" type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T-VMT-E-B	Trending - Viewing and Modifying Trends External-B	<input type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T-ATR-A	Trending - Automated Trend Retrieval-A	<input type="checkbox"/>	ConfirmedEventNotification	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	ReadRange	<input checked="" type="checkbox"/>	<input type="checkbox"/>
T-ATR-B	Trending - Automated Trend Retrieval-B	<input checked="" type="checkbox"/>	ConfirmedEventNotification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	ReadRange	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.5 Network Management BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
NM-CE-A	Network Management - Connection Establishment-A	<input type="checkbox"/>	Establish-Connection-To-Network	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	Disconnect-Connection-To-Network	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NM-CE-B	Network Management - Connection Establishment-B	<input type="checkbox"/>	Establish-Connection-To-Network	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	Disconnect-Connection-To-Network	<input type="checkbox"/>	<input checked="" type="checkbox"/>
NM-RC-A	Network Management - Router Configuration-A	<input type="checkbox"/>	Who-Is-Router-To-Network	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	I-Am-Router-To-Network	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	I-Could-Be-Router-To-Network	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	Initialize-Routing-Table	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	Initialize-Routing-Table-Ack	<input type="checkbox"/>	<input checked="" type="checkbox"/>
NM-RC-B	Network Management - Router Configuration-B	<input type="checkbox"/>	Who-Is-Router-To-Network	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	I-Am-Router-To-Network	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	Initialize-Routing-Table	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	Initialize-Routing-Table-Ack	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### 3.6 Device Management BIBBs

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

## 4 Service Types

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

## 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	<input checked="" type="checkbox"/>	LXOUXX_High Pressure Sensor LXOUXX_Low Pressure Sensor LXOUXX_Working Time LXXXUXX_Setpoint_S LXXXUXX_Room Temperature LXXXUXX_Disch.Setpoint Cool_S LXXXUXX_Disch.Setpoint Heat_S LXXXUXX_Disch.Current Temp. LXXXUXX_Heat Exchanger Temp. LXXXUXX_Heat Setpoint Up Limit LXXXUXX_Heat Setpoint Low Limit LXXXUXX_Cool Setpoint Up Limit LXXXUXX_Cool Setpoint Low Limit LXXXUXX_Dry Setpoint Up Limit LXXXUXX_Dry Setpoint Low Limit LXXXUXX_Auto Setpoint Up Limit LXXXUXX_Auto Setpoint Low Limit LXXXUXX_Unit Error Code
Analog-Output	1	<input checked="" type="checkbox"/>	Temperature Setpoint (all units) LXXXUXX_Setpoint_C LXXXUXX_Disch.Setpoint Cool_C LXXXUXX_Disch.Setpoint Heat_C
Analog-Value	2	<input type="checkbox"/>	Occupancy Cool Setpoint Occupancy Heat Setpoint Unoccupancy Cool Setpoint Unoccupancy Heat Setpoint
Averaging	18	<input type="checkbox"/>	
Binary-Input	3	<input checked="" type="checkbox"/>	LXXXUXX_On/Off_S LXXXUXX_Wired Remote Controller_S LXXXUXX_Filter Sign LXXXUXX_Allow On/Off from RC_S LXXXUXX_Allow Mode from RC_S LXXXUXX_Allow Setpoint from RC_S
Binary-Output	4	<input checked="" type="checkbox"/>	On/Off (all units) LXXXUXX_On/Off_C LXXXUXX_Wired Remote Controller_C LXXXUXX_Filter Reset LXXXUXX_Allow On/Off from RC_C LXXXUXX_Allow Mode from RC_C LXXXUXX_Allow Setpoint from RC_C
Binary-Value	5	<input checked="" type="checkbox"/>	Unoccupancy Deadband Action
Calendar	6	<input type="checkbox"/>	
Command	7	<input type="checkbox"/>	
Device	8	<input checked="" type="checkbox"/>	Device PA-AC-BAC
Event-Enrollment	9	<input type="checkbox"/>	
File	10	<input type="checkbox"/>	
Group	11	<input type="checkbox"/>	
Life-Safety-Point	21	<input type="checkbox"/>	
Life-Safety-Zone	22	<input type="checkbox"/>	
Loop	12	<input type="checkbox"/>	
Multistate-Input	13	<input checked="" type="checkbox"/>	LXOUXX_Demand Limit. Ratio LXXXUXX_Mode_S

			LXXXUXX_FanSpeed_S LXXXUXX_Vane Position_S LXXXUXX_Unit Type LXXXUXX_Occupancy_S
Multistate-Output	14	<input checked="" type="checkbox"/>	Mode (all units) FanSpeed (all units) Vane Position (all units) LXXXUXX_Mode_C LXXXUXX_FanSpeed_C LXXXUXX_Vane Position_C LXXXUXX_Occupancy_C
Multistate-Value	19	<input checked="" type="checkbox"/>	
Notification-Class	15	<input checked="" type="checkbox"/>	
Program	16	<input type="checkbox"/>	
Schedule	17	<input checked="" type="checkbox"/>	
Trend-Log	20	<input checked="" type="checkbox"/>	
Trend-Log-Multiple	27	<input checked="" type="checkbox"/>	

## 5.2 Member objects

### 5.2.1 Type: Gateway

Object-name	Description	Object-type	Object-instance
Device PA-AC-BAC	Panasonic VRF to BACnet Gateway	Device	246 <small>Instance number of device object can be configured with MAPS</small>

### 5.2.2 Type: Central control

Object-name	Description	Object-type	Object-instance
On/Off (all units)	0-Off, 1-On	BO	0
Mode (all units)	1-Heat, 2-Cool, 3-Fan, 4-Dry, 5-Auto	MO	0
FanSpeed (all units)	1-Auto,2-Low,3-Med,4-High	MO	1
Vane Position swing (all units)	1-Stop,2-Pos1,3-Pos2,4-Pos3,5-Pos4,6-Pos5,7-Swing	MO	2
Temperature Setpoint (all units)	16..30 °C	AO	0

### 5.2.3 Type: Outdoor Unit

Oxx is a generic prefix for the BACnet object name, where:

Variable	Description
"Lx"	Panasonic Line (1..2)
"Oxx"	Outdoor Unit address (1..31)

Variable	Description
(O[1..30]*25)+((L-1)*1000)+10000	FO (formula for OU)

Object-name	Description	Object-type	Object-instance
LXOUXX_Demand Limit. Ratio	1-0%, 2-100%, 3-200%, 4-No Limit	MI	FO+0
LXOUXX_High Pressure Sensor	bar	AI	FO+0
LXOUXX_Low Pressure Sensor	bar	AI	FO+1
LXOUXX_Working Time	0..16777215 hours	AI	FO+2

### 5.2.4 Type: Indoor Unit

OxxUxx is a generic prefix for the BACnet object name, where:

Variable	Description
"Lx"	Panasonic Line (1..2)
"Oxx"	Outdoor Unit address (1..31)
"Uxx"	Indoor Unit address (1..64)

Variable	Description
(U[1..64]*100)+((L-1)*20000)	FU (formula for IU)

Object-name	Description	Object-type	Object-instance
LXXOXXUXX_On/Off_S	0-Off,1-On	BI	FI+0
LXXOXXUXX_On/Off_C	0-Off,1-On	BO	FI+0
LXXOXXUXX_Mode_S	1-Heat, 2-Cool, 3-Fan, 4-Dry, 5-Auto	MI	FI+0
LXXOXXUXX_Mode_C	1-Heat, 2-Cool, 3-Fan, 4-Dry, 5-Auto	MO	FI+0
LXXOXXUXX_Setpoint_S	16..30 °C / 61..86 °F	AI	FI+0
LXXOXXUXX_Setpoint_C	16..30 °C / 61..86 °F	AO	FI+0
LXXOXXUXX_FanSpeed_S	1-Auto, 2-Low, 3-Low+, 4-Med, 5-Med+, 6-High	MI	FI+1
LXXOXXUXX_FanSpeed_C	1-Auto, 2-Low, 3-Med, 4-High	MO	FI+1
LXXOXXUXX_Vane Position_S	1-Stop, 2-Pos1, 3-Pos2, 4-Pos3, 5-Pos4, 6-Pos5, 7-Swing	MI	FI+2
LXXOXXUXX_Vane Position_C	1-Stop, 2-Pos1, 3-Pos2, 4-Pos3, 5-Pos4, 6-Pos5, 7-Swing	MO	FI+2
LXXOXXUXX_Room Temperature	-35..92,5 °C / -31..198,5 °F	AI	FI+1
LXXOXXUXX_Wired Remote Controller_S	0-Body sensor, 1-Remote control sensor	BI	FI+1
LXXOXXUXX_Wired Remote Controller_C	0-Body sensor, 1-Remote control sensor	BO	FI+1
LXXOXXUXX_Disch.Setpoint Cool_S	-10..10 °C / 13..50 °F	AI	FI+2
LXXOXXUXX_Disch.Setpoint Cool_C	-10..10 °C / 13..50 °F	AO	FI+1
LXXOXXUXX_Disch.Setpoint Heat_S	-10..10 °C / 13..50 °F	AI	FI+3
LXXOXXUXX_Disch.Setpoint Heat_C	-10..10 °C / 13..50 °F	AO	FI+2
LXXOXXUXX_Disch.Current Temp.	-35..92,5 °C / -31..198,5 °F	AI	FI+4
LXXOXXUXX_Heat Exchanger Temp.	-1..26 °C / 30..79 °F	AI	FI+5
LXXOXXUXX_Heat Setpoint Up Limit	-35..92,5 °C / -31..198,5 °F	AI	FI+6
LXXOXXUXX_Heat Setpoint Low Limit	-35..92,5 °C / -31..198,5 °F	AI	FI+7
LXXOXXUXX_Cool Setpoint Up Limit	-35..92,5 °C / -31..198,5 °F	AI	FI+8
LXXOXXUXX_Cool Setpoint Low Limit	-35..92,5 °C / -31..198,5 °F	AI	FI+9
LXXOXXUXX_Dry Setpoint Up Limit	-35..92,5 °C / -31..198,5 °F	AI	FI+10
LXXOXXUXX_Dry Setpoint Low Limit	-35..92,5 °C / -31..198,5 °F	AI	FI+11
LXXOXXUXX_Auto Setpoint Up Limit	-35..92,5 °C / -31..198,5 °F	AI	FI+12
LXXOXXUXX_Auto Setpoint Low Limit	-35..92,5 °C / -31..198,5 °F	AI	FI+13
LXXOXXUXX_Unit Error Code	0-No Error, X-Error(0..255)	AI	FI+14
LXXOXXUXX_Filter Sign	0-Normal, 1-Alarm	BI	FI+2
LXXOXXUXX_Filter Reset	0-No reset, 1-Reset	BO	FI+2
LXXOXXUXX_Allow On/Off from RC_S	0-Allow, 1-Not allow	BI	FI+3
LXXOXXUXX_Allow On/Off from RC_C	0-Allow, 1-Not allow	BO	FI+3
LXXOXXUXX_Allow Mode from RC_S	0-Allow, 1-Not allow	BI	FI+4
LXXOXXUXX_Allow Mode from RC_C	0-Allow, 1-Not allow	BO	FI+4
LXXOXXUXX_Allow Setpoint from RC_S	0-Allow, 1-Not allow	BI	FI+5
LXXOXXUXX_Allow Setpoint from RC_C	0-Allow, 1-Not allow	BO	FI+5

LXOXXUXX_Unit Type	1:Not Defined, 2-TBD, 3-GHP, 4-PAC, 5-VRF	MI	FI+3
LXOXXUXX_Occupancy_S	1-Occupied, 2-Unoccupied, 3-Disable	MI	FI+4
LXOXXUXX_Occupancy_C	1-Occupied, 2-Unoccupied, 3-Disable	MO	FI+3

## 5.3 Objects and properties

### 5.3.1 PA-AC-BAC (Device Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier**	BACnetObjectIdentifier	(Device, 246)	R	R
Object_Name**	CharacterString	"Device PA-AC-BAC"	R	R
Object_Type	BACnetObjectType	DEVICE (8) (Device Object Type)	R	R
System_Status	BACnetDeviceStatus	OPERATIONAL (0)	R	R
Vendor_Name	CharacterString	"Intesis Software SLU"	R	R
Vendor_Identifier	Unsigned16	246	R	R
Model_Name	CharacterString	"PA-AC-BAC"	R	R
Firmware_Revision	CharacterString	"14.1.0.0"	R	R
Application_Software_Version	CharacterString	"1.0.0.0"	R	R
Location	CharacterString	""	O	-
Description	CharacterString	"PANASONIC to BACnet Gateway"	O	R
Protocol_Version	Unsigned	1	R	R
Protocol_Revision	Unsigned	14	R	R
Protocol_Services_Supported	BACnetServiceSupported	Refer to section 4 [Service Types]	R	R
Protocol_Object_Types_Supported	BACnetObjectTypesSupported	Refer to section 5.1 [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 BACnetVTSes	-	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 Occupancy Cool Setpoint (Analog Value Object Type)

Current Setpoint when both Cool mode and Occupancy are enabled, and the room is occupied. Check section 7.2.5.1 for more information.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 0)	R	R
Object_Name	CharacterString	<i>Occupancy Cool Setpoint</i>	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	-15..60 °C / 4..140 °F	R	R
Description	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 (62) // Fahrenheit (64)	R	R
Min_Pres_Value	REAL	-	O	-
Max_Pres_Value	REAL	-	O	-
Resolution	REAL	-	O	-
COV_Increment	REAL	0	O	W
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
High_Limit	REAL	-	O	-
Low_Limit	REAL	-	O	-
Deadband	REAL	-	O	-
Limit_Enable	BACnetLimitEnable	-	O	-
Event_Enable	BACnetEventTransitionBits	-	O	-
Acked_Transitions	BACnetEventTransitionBits	-	O	-
Notify_Type	BACnetNotifyType	-	O	-
Event_Time_Stamps	BACnetArray[N] of BACnetTimeStamp	-	O	-
Profile_Name	CharacterString	-	O	-

### 5.3.3 Occupancy Heat Setpoint (Analog Value Object Type)

Current Setpoint when both Heat mode and Occupancy are enabled, and the room is occupied. Check section 7.2.5.1 for more information.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 1)	R	R
Object_Name	CharacterString	<i>Occupancy Heat Setpoint</i>	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	-15..60 °C / 4..140 °F	R	R
Description	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 (62) // Fahrenheit (64)	R	R
Min_Pres_Value	REAL	-	O	-
Max_Pres_Value	REAL	-	O	-
Resolution	REAL	-	O	-
COV_Increment	REAL	0	O	W
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
High_Limit	REAL	-	O	-
Low_Limit	REAL	-	O	-
Deadband	REAL	-	O	-
Limit_Enable	BACnetLimitEnable	-	O	-
Event_Enable	BACnetEventTransitionBits	-	O	-
Acked_Transitions	BACnetEventTransitionBits	-	O	-
Notify_Type	BACnetNotifyType	-	O	-
Event_Time_Stamps	BACnetArray[N] of BACnetTimeStamp	-	O	-
Profile_Name	CharacterString	-	O	-

### 5.3.4 Unoccupancy Cool Setpoint (Analog Value Object Type)

Current Setpoint when both Cool mode and Occupancy are enabled, and the room is unoccupied. Check section 7.2.5.1 for more information.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 2)	R	R
Object_Name	CharacterString	<i>Unoccupancy Cool Setpoint</i>	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	-15..60 °C / 4..140 °F	R	R
Description	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 (62) // Fahrenheit (64)	R	R
Min_Pres_Value	REAL	-	O	-
Max_Pres_Value	REAL	-	O	-
Resolution	REAL	-	O	-
COV_Increment	REAL	0	O	W
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
High_Limit	REAL	-	O	-
Low_Limit	REAL	-	O	-
Deadband	REAL	-	O	-
Limit_Enable	BACnetLimitEnable	-	O	-
Event_Enable	BACnetEventTransitionBits	-	O	-
Acked_Transitions	BACnetEventTransitionBits	-	O	-
Notify_Type	BACnetNotifyType	-	O	-
Event_Time_Stamps	BACnetArray[N] of BACnetTimeStamp	-	O	-
Profile_Name	CharacterString	-	O	-

### 5.3.5 Unoccupancy Heat Setpoint (Analog Value Object Type)

Current Setpoint when both Heat mode and Occupancy are enabled, and the room is unoccupied. Check section 7.2.5.1 for more information.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 3)	R	R
Object_Name	CharacterString	<i>Unoccupancy Heat Setpoint</i>	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	-15..60 °C / 4..140 °F	R	R
Description	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 (62) // Fahrenheit (64)	R	R
Min_Pres_Value	REAL	-	O	-
Max_Pres_Value	REAL	-	O	-
Resolution	REAL	-	O	-
COV_Increment	REAL	0	O	W
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
High_Limit	REAL	-	O	-
Low_Limit	REAL	-	O	-
Deadband	REAL	-	O	-
Limit_Enable	BACnetLimitEnable	-	O	-
Event_Enable	BACnetEventTransitionBits	-	O	-
Acked_Transitions	BACnetEventTransitionBits	-	O	-
Notify_Type	BACnetNotifyType	-	O	-
Event_Time_Stamps	BACnetArray[N] of BACnetTimeStamp	-	O	-
Profile_Name	CharacterString	-	O	-

### 5.3.6 OccupancyContinuousCheck (Binary Value Object Type)

It indicates if the system is continuously checking the setpoint and occupancy conditions. Check section 7.2.5.1 for more information.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Value, 0)	R	R
Object_Name	CharacterString	<i>OccupancyContinuousCheck</i>	R	R
Object_Type	BACnetObjectType	BINARY_VALUE (5)	R	R
Present_Value	BACnetBinaryPV	INACTIVE (0) / ACTIVE (1)	W	W
Description	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
Inactive_Text	CharacterString	"Disabled"	O	R
Active_Text	CharacterString	"Enabled"	O	R
Change_Of_State_Time	BACnetDatetime	-	O	-
Change_Of_State_Count	Unsigned	-	O	-
Time_Of_State_Count_Reset	BACnetDatetime	-	O	-
Elapsed_Active_Time	Unsigned	-	O	-
Time_Of_Active_Time_Reset	BACnetDatetime	-	O	-
Minimum_Off_Time	Unsigned32	-	O	-
Minimum_On_Time	Unsigned32	-	O	-
Priority_Array	BACnetPriorityArray	BACnetPriorityArray	R	-
Relinquish_Default	BACnetBinaryPV	INACTIVE (0)	R	-
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Alarm_Value	BACnetBinaryPV	-	O	-
Event_Enable	BACnetEventTransitionBits	-	O	-
Acked_Transitions	BACnetEventTransitionBits	-	O	-
Notify_Type	BACnetNotifyType	-	O	-
Event_Time_Stamps	BACnetArray[N] of BACnetTimeStamp	-	O	-
Profile_Name	CharacterString	-	O	-

### 5.3.7 Unoccupancy Deadband Action (Multistate Value Object Type)

It indicates the action to be performed by the system when Unoccupancy is enabled and Room Temperature is within the deadband.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Output, 29)	R	R
Object_Name	CharacterString	<i>Unoccupancy Deadband Action</i>	R	R
Object_Type	BACnetObjectType	BINARY_OUTPUT (4)	R	R
Present_Value	BACnetBinaryPV	INACTIVE (0) / ACTIVE (1)	W	W
Description	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	2	R	R
State_Text	BACnetArray[N] of CharacterString	<i>Check <b>Unoccupancy Deadband Action table</b> below</i>	O	R
Priority_Array	BACnetPriorityArray	-	R	-
Relinquish_Default	Unsigned	-	R	-
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Alarm_Value	Unsigned	-	O	-
Fault_Value	Unsigned	-	O	-
Event_Enable	BACnetEventTransitionBits	-	O	-
Acked_Transitions	BACnetEventTransitionBits	-	O	-
Notify_Type	BACnetNotifyType	-	O	-
Event_Time_Stamps	BACnetArray[N] of BACnetTimeStamp	-	O	-
Profile_Name	CharacterString	-	O	-

#### Unoccupancy Deadband Action table

Check possible Occupancy values in the following correspondence table.

Pesent_Value	Contents displayed in State_Text
0	OFF
1	Current mode

## 5.3.8 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

### 5.3.9 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	5	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	Cool
3	Fan
4	Dry
5	Auto

### 5.3.10 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	<i>FanSpeed (all units)</i>	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 <b>FanSpeed (all units) table</b> 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	Auto
2	Low
3	Med
4	High

### 5.3.11 Vane position (all units) (Multistate Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Output, 2)	R	R
Object_Name	CharacterString	Vane Position (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	8	R	R
State_Text	BACnetArray[N] of CharacterString	Check <b>Vane Position (all units) table</b> 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

### Vane Position (all units) table

Vane Position interpretation is possible using the value in the following correspondence table.

Pesent_Value	Contents displayed in State_Text
1	Stop
2	Pos1
3	Pos2
4	Pos3
5	Pos4
6	Pos5
7	Swing

## 5.3.12 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	<i>Temperature Setpoint (all units)</i>	R	R
Object_Type	BACnetObjectType	ANALOG_OUTPUT (1)	R	R
Present_Value	REAL	16..30 °C / 61..86 °F	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 (62) // Fahrenheit (64)	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	<i>Configurable through BACnet and Config Tool</i>	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

## 5.3.13 LxOxx\_Demand Limit Ratio (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (OU[1..30]*25)+((L-1)*1000)+10000)+ 0)	R	R
Object_Name	CharacterString	LXOUXX_Demand Limit. Ratio	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	0..200 % (255-No limit)	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		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

## 5.3.14 LXOUXX\_High Pressure Sensor. (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (OU[1..30]*25)+((L-1)*1000)+10000)+ 0)	R	R
Object_Name	CharacterString	LxOUxx_High Pressure Sensor	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	bar	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

## 5.3.15 LXOUXX\_Low Pressure Sensor. (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (OU[1..30]*25)+((L-1)*1000)+10000)+ 1)	R	R
Object_Name	CharacterString	LxOUxx_Low Pressure Sensor	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	bar	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

## 5.3.16 LxOUxx\_Working Time (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (OU[1..30]*25)+((L-1)*1000)+10000)+ 2)	R	R
Object_Name	CharacterString	LxOUxx_Working Time	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	0..16777215	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	Hours	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

## 5.3.17 LxOxxUxx On/Off\_S (Binary Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Input, (U[1..64]*100)+((L-1)*20000)+0)	R	R
Object_Name	CharacterString	LxOxxUxx 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

## 5.3.18 LxOxxUxx\_On/Off\_C (Binary Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Output, (U[1..64]*100)+((L-1)*20000)+0)	R	R
Object_Name	CharacterString	LxOxxUxx_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

### 5.3.19 LXXUXX\_Mode\_S (Multistate Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Input, (U[1..64]*100)+((L-1)*20000)+0)	R	R
Object_Name	CharacterString	LXXUXX_Mode_S	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT (13)	R	R
Present_Value	Unsigned	1 ~ 5	R	R
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	5	R	R
State_Text	BACnetArray[N] of CharacterString	Check <b>Mode table</b> 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	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 table

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

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

## 5.3.20 LXXOXXUXX\_Mode\_C (Multistate Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Output, (U[1..64]*100)+((L-1)*20000)+0)	R	R
Object_Name	CharacterString	LXXOXXUXX_Mode_C	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 ~ 5	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	5	R	R
State_Text	BACnetArray[N] of CharacterString	Check <b>Mode table</b> 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	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 table

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

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

## 5.3.21 LxOxxUxx\_Setpoint\_S (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+0)	R	R
Object_Name	CharacterString	LxOxxUxxSetpoint_S	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	16..30 °C / 61..86 °F	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 (62) // Fahrenheit (64)	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 LxOxxUxx\_Setpoint\_C (Analog Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Output, (U[1..64]*100)+((L-1)*20000)+ 0)	R	R
Object_Name	CharacterString	LxOxxUxxSetpoint_C	R	R
Object_Type	BACnetObjectType	ANALOG_OUTPUT (1)	R	R
Present_Value	REAL	16..30 °C / 61..86 °F	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 (62) // Fahrenheit (64)	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 LxOxxUxxFanSpeed\_S (Multistate Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Input, (U[1..64]*100)+((L-1)*20000)+ 1)	R	R
Object_Name	CharacterString	LxOxxUxxFanSpeed_S	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT (13)	R	R
Present_Value	Unsigned	1 ~ 6	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 <b>FanSpeed table</b> 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	Auto
2	Low
3	Low+
4	Med
5	Med+
6	High

### 5.3.24 LxOxxUxxFanSpeed\_C (Multistate Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Output, (U[1..64]*100)+((L-1)*20000)+1)	R	R
Object_Name	CharacterString	LxOxxUxxFanSpeed_C	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 ~ 4	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 <b>FanSpeed table</b> 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	Auto
2	Low
3	Med
4	High

### 5.3.25 LxOxxUxxVane Position\_S (Multistate Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Input, (U[1..64]*100)+((L-1)*20000)+ 2)	R	R
Object_Name	CharacterString	LxOxxUxxVane Position_S	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT (13)	R	R
Present_Value	Unsigned	1 ~ 7	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 Vane Position 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

### Vane Position table

Vane Position interpretation is possible using the value in the following correspondence table.

Pesent_Value	Contents displayed in State_Text
1	Stop
2	Pos1
3	Pos2
4	Pos3
5	Pos4
6	Pos5
7	Swing

### 5.3.26 LxOxxUxxVane Position\_C (Multistate Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Output, (U[1..64]*100)+((L-1)*20000)+2)	R	R
Object_Name	CharacterString	LxOxxUxxVane Position_C	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 ~ 5	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 <b>Vane Position table</b> 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

### Vane Position table

Vane Position interpretation is possible using the value in the following correspondence table.

Pesent_Value	Contents displayed in State_Text
1	Stop
2	Pos1
3	Pos2
4	Pos3
5	Pos4
6	Pos5
7	Swing

## 5.3.27 LxOxxUxx Room Temp. (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+1)	R	R
Object_Name	CharacterString	LxOxxUxxRemote Sensor Temp.	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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 LxOxxUxx Wired Remote Controller\_S (Binary Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Input, (U[1..64]*100)+((L-1)*20000)+1)	R	R
Object_Name	CharacterString	<i>Wired Remote Controller_S</i>	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	<i>“Body sensor”</i>	O	R
Active_Text	CharacterString	<i>“Remote control sensor”</i>	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

## 5.3.29 LxOxxUxx\_Wired Remote Controller\_C (Binary Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Output, (U[1..64]*100)+((L-1)*20000)+1)	R	R
Object_Name	CharacterString	Wired Remote Controller_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	<i>"Body sensor"</i>	O	R
Active_Text	CharacterString	<i>"Remote control sensor"</i>	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

## 5.3.30 LXXOXXUXX\_Disch.Setpoint Cool\_S (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+2)	R	R
Object_Name	CharacterString	LXXOXXUXX_Disch.Setpoint Cool_S	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-10..10 °C / 13..50 °F	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 (62) // Fahrenheit (64)	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 LxOxxUxx\_Disch\_Setpoint Cool\_C (Analog Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Output, (U[1..64]*100)+((L-1)*20000)+ 1)	R	R
Object_Name	CharacterString	LxOxxUxxDisch_Setpoint Cool_C	R	R
Object_Type	BACnetObjectType	ANALOG_OUTPUT (1)	R	R
Present_Value	REAL	-10..10 °C / 13..50 °F	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 (62) // Fahrenheit (64)	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 LXXOXXUXX\_Disch.Setpoint Heat\_S (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+3)	R	R
Object_Name	CharacterString	LXXOXXUXX_Disch.Setpoint Heat_S	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-10..10 °C / 13..50 °F	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 (62) // Fahrenheit (64)	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 LxOxxUxx\_Disch\_Setpoint Heat\_C (Analog Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Output, (U[1..64]*100)+((L-1)*20000)+ 2)	R	R
Object_Name	CharacterString	LxOxxUxxDisch_Setpoint Heat_C	R	R
Object_Type	BACnetObjectType	ANALOG_OUTPUT (1)	R	R
Present_Value	REAL	-10..10 °C / 13..50 °F	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 (62) // Fahrenheit (64)	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 LXXOXXUXX\_Disch.Current temperature (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+4)	R	R
Object_Name	CharacterString	LXXOXXUXX_Disch.Current temperature_S	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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 LXXOXXUXX\_Heat Exchanger Temp. (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+5)	R	R
Object_Name	CharacterString	LXXOXXUXX_Heat Exchanger Temp.	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-1..26 °C / 30..79 °F	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 (62) // Fahrenheit (64)	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

## 5.3.36 LXXOXXUXX\_Heat Setpoint Up Limit (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+6)	R	R
Object_Name	CharacterString	LXXOXXUXX_Heat Setpoint Up Limit	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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 LXXOXXUXX\_Heat Setpoint Down Limit (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+7)	R	R
Object_Name	CharacterString	LXXOXXUXX_Heat Setpoint Down Limit	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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 LXXOXXUXX\_Cool Setpoint Up Limit (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+8)	R	R
Object_Name	CharacterString	LXXOXXUXX_Cool Setpoint UpLimit	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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 LXXOXXUXX\_Cool Setpoint Down Limit (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+9)	R	R
Object_Name	CharacterString	LXXOXXUXX_Cool Setpoint Down Limit	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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 LXXOXXUXX\_Dry Setpoint Up Limit (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+10)	R	R
Object_Name	CharacterString	LXXOXXUXX_Dry Setpoint Up Limit	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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

## 5.3.41 LXXOXXUXX\_Dry Setpoint Down Limit (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+11)	R	R
Object_Name	CharacterString	LXXOXXUXX_Dry Setpoint Down Limit	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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

## 5.3.42 LXXOXXUXX\_Auto Setpoint Up Limit (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+12)	R	R
Object_Name	CharacterString	LXXOXXUXX_Auto Setpoint Up Limit	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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

## 5.3.43 LXXOXXUXX\_Auto Setpoint Down Limit (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+13)	R	R
Object_Name	CharacterString	LXXOXXUXX_Auto Setpoint Down Limit	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-35..92,5 °C / -31..198,5 °F	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 (62) // Fahrenheit (64)	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

## 5.3.44 LXXOXXUXX\_Unit Error Code (Analog Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, (U[1..64]*100)+((L-1)*20000)+14)	R	R
Object_Name	CharacterString	LXXOXXUXX_Unit Error Code	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	0-No Error, X-Error (0..255)	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	-	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

## 5.3.45 LxOxxUxx Filter Sign (Binary Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Input, (U[1..64]*100)+((L-1)*20000)+2)	R	R
Object_Name	CharacterString	<i>Filter Sign</i>	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	“Alarrrm”	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

## 5.3.46 LxOxxUxx\_Filter Reset (Binary Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Output, (U[1..64]*100)+((L-1)*20000)+2)	R	R
Object_Name	CharacterString	Filter Reset	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

## 5.3.47 LxOxxUxx\_Allow On/Off from RC\_S (Binary Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Input, (U[1..64]*100)+((L-1)*20000)+3)	R	R
Object_Name	CharacterString	Allow On/Off from RC_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	"Allow"	O	R
Active_Text	CharacterString	"Not allow"	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 LxOxxUxx\_Allow On/Off from RC\_C (Binary Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Output, (U[1..64]*100)+((L-1)*20000)+3)	R	R
Object_Name	CharacterString	Allow On/Off from RC_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	"Allow"	O	R
Active_Text	CharacterString	"Not allow"	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 LxOxxUxx\_Allow Mode from RC\_S (Binary Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Input, (U[1..64]*100)+((L-1)*20000)+4)	R	R
Object_Name	CharacterString	Allow Mode from RC_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	"Allow"	O	R
Active_Text	CharacterString	"Not allow"	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

## 5.3.50 LxOxxUxx\_Allow Mode from RC\_C (Binary Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Output, (U[1..64]*100)+((L-1)*20000)+4)	R	R
Object_Name	CharacterString	Allow Mode from RC_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	"Allow"	O	R
Active_Text	CharacterString	"Not allow"	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

## 5.3.51 LxOxxUxx\_Allow Setpoint from RC\_S (Binary Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Input, (U[1..64]*100)+((L-1)*20000)+5)	R	R
Object_Name	CharacterString	Allow Setpoint from RC_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	“Allow”	O	R
Active_Text	CharacterString	“Not allow”	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

## 5.3.52 LxOxxUxx\_Allow Setpoint from RC\_C (Binary Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Output, (U[1..64]*100)+((L-1)*20000)+5)	R	R
Object_Name	CharacterString	Allow Setpoint from RC_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	"Allow"	O	R
Active_Text	CharacterString	"Not allow"	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

### 5.3.53 LxOxxUxxUnit Type (Multistate Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Input, (U[1..64]*100)+((L-1)*20000)+ 3)	R	R
Object_Name	CharacterString	LxOxxUxxUnit Type	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT (13)	R	R
Present_Value	Unsigned	1 ~ 5	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	5	R	R
State_Text	BACnetArray[N] of CharacterString	Check <b>Unit Type Table</b> 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

Vane Position interpretation is possible using the value in the following correspondence table.

Pesent_Value	Contents displayed in State_Text
1	Not defined
2	TBD
3	GHP
4	PAC
5	VRF

### 5.3.54 LxOxxUxx\_Occupancy\_S (Multistate Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Input, (U[1..64]*100)+((L-1)*20000)+ 4)	R	R
Object_Name	CharacterString	LxOxxUxx_Occupancy_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 <b>Occupancy table</b> 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

### Occupancy table

Vane Position interpretation is possible using the value in the following correspondence table.

Pesent_Value	Contents displayed in State_Text
1	Occupied
2	Unoccupied
3	Disable

### 5.3.55 LxOxxUxx\_Occupancy\_C (Multistate Output Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multi-state Output, (U[1..64]*100)+((L-1)*20000)+3)	R	R
Object_Name	CharacterString	LxOxxUxx_Occupancy_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 <b>Occupancy table</b> 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

## Occupancy table

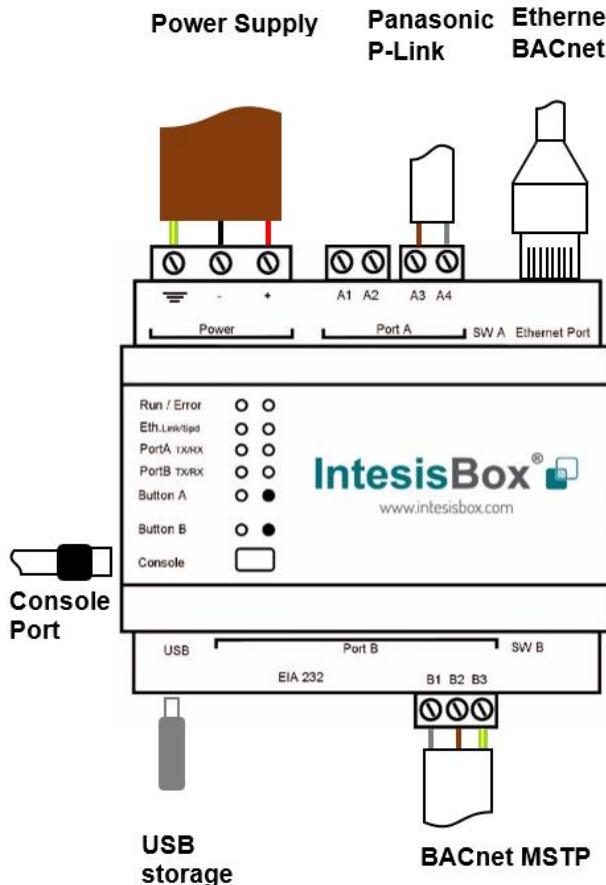
Vane Position interpretation is possible using the value in the following correspondence table.

Pesent_Value	Contents displayed in State_Text
1	Occupied
2	Unoccupied
3	Disable

## 6 Connections

### 6.1 Connections for 16 (IBBACPAN016O000) and 64 (IBBACPAN064O000) versions

Find below information regarding the IntesisBox connections available.



#### Power Supply

#### Panasonic P-Link

#### Ethernet BACnet IP

#### 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 (UDP) / Console (UDP & TCP)

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). With factory settings, after powering up the gateway, DHCP will be enabled for 30 seconds. After that time, if no IP is provided by a DHCP server, the default IP 192.168.100.246 will be set.

#### PortA / P-Link Panasonic

Connect the P-Link terminals of Panasonic Outdoor Unit to the connectors A3 and A4 of gateway's PortA. There is no polarity to be respected.

#### PortB / BACnet MSTP

Connect the EIA485 bus to connectors B1 (B+), B2 (A-) and B3 (SNGD) of gateway's PortB. Respect the polarity.

**Note for PortB:** 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  $\Omega$ . The port includes a DIP-Switch for configuration of biasing circuit as well as termination:

SW1:

- ON:** 120  $\Omega$  termination active
- OFF:** 120  $\Omega$  termination inactive

SW2-3:

- ON:** Polarization active
- OFF:** Polarization inactive

If the gateway is installed in one bus end, make sure that termination is active.

#### 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.

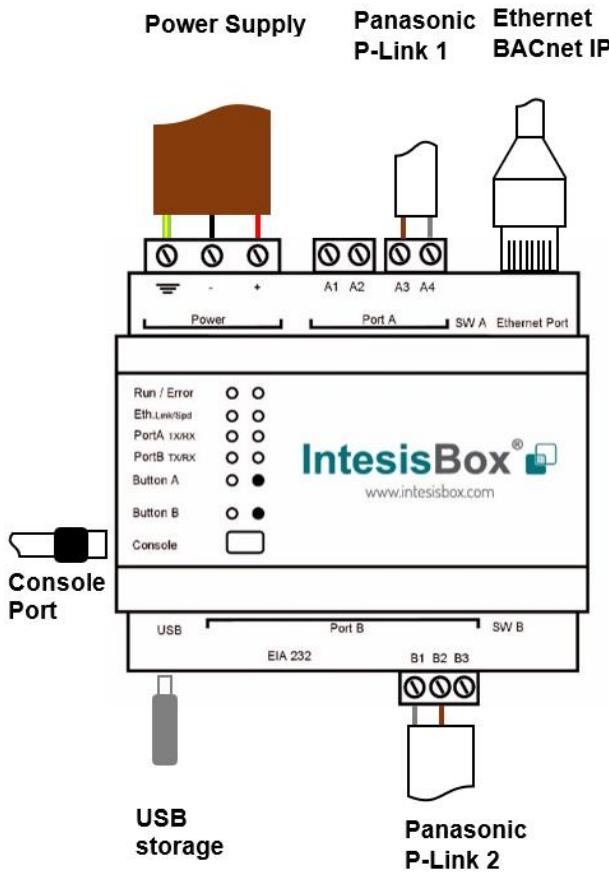
#### USB

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 9).

## 6.2 Connections for 128 (IBBACPAN128O000) version

Find below information regarding the IntesisBox 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 (UDP) / Console (UDP & TCP)

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). With factory settings, after powering up the gateway, DHCP will be enabled for 30 seconds. After that time, if no IP is provided by a DHCP server, the default IP 192.168.100.246 will be set.

### PortA / P-Link 1 Panasonic

Connect the P-Link terminals of Panasonic Outdoor Unit to the connectors A3 and A4 of gateway's PortA. There is no polarity to be respected

### PortB / P-Link 2 Panasonic

Connect the P-Link terminals of Panasonic Outdoor Unit to the connectors B1 and B2 of gateway's PortB. There is no polarity to be respected.

### 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 9).

## 6.3 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!** 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.

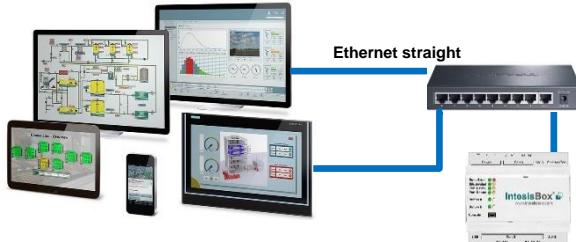
## 6.4 Connection to BACnet

### 6.4.1 BACnet IP

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

In case there is no response from IntesisBox to the frames sent by the BACnet client device, check that both the client and IntesisBox are operative and reachable from the network connection used by IntesisBox. Check the IntesisBox 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

### 6.4.2 BACnet MSTP (only available for 16 and 64 versions)

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. Set port switch SW1 to ON if gateway is installed on one bus end. SW2-3 will generally go to OFF (polarization inactive), unless there isn't a client / header device providing polarization in the bus.

## 6.5 Connect to Panasonic P-Link installation

Use the PortA connector in the top corner of the IntesisBox device in order to connect Panasonic P-Link bus to the IntesisBox. Remember to follow all safety precautions indicated by Panasonic.

Connect the Panasonic P-Link bus to connectors A3 and A4 of gateway's PortA. Bus is not sensitive to polarity.

Note that for the version of 128 unis, the gateway supports up to 2 Panasonic lines, therefore the line 1 is connected to the Port A and the line 2 is connected to the Port B (connectrars B1/B2). Bus is not sensitive to polarity.

## 6.6 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 IntesisBox.
- **USB:** Using the console port of IntesisBox, 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 IntesisBox and the Panasonic VRF installation 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 Intesis Software SLU for this standard integration.

Items supplied by Intesis Software for this integration are:

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

### 7.2 IntesisBox MAPS. Configuration & monitoring tool for IntesisBox BACnet series

#### 7.2.1 Introduction

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

The installation procedure and main functions are explained in the *IntesisBox MAPS BACnet User Manual*. This document can be downloaded from the link indicated in the installation sheet supplied with the IntesisBox device or in the product website at [www.intesisbox.com](http://www.intesisbox.com)

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

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

#### 7.2.2 Connection

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

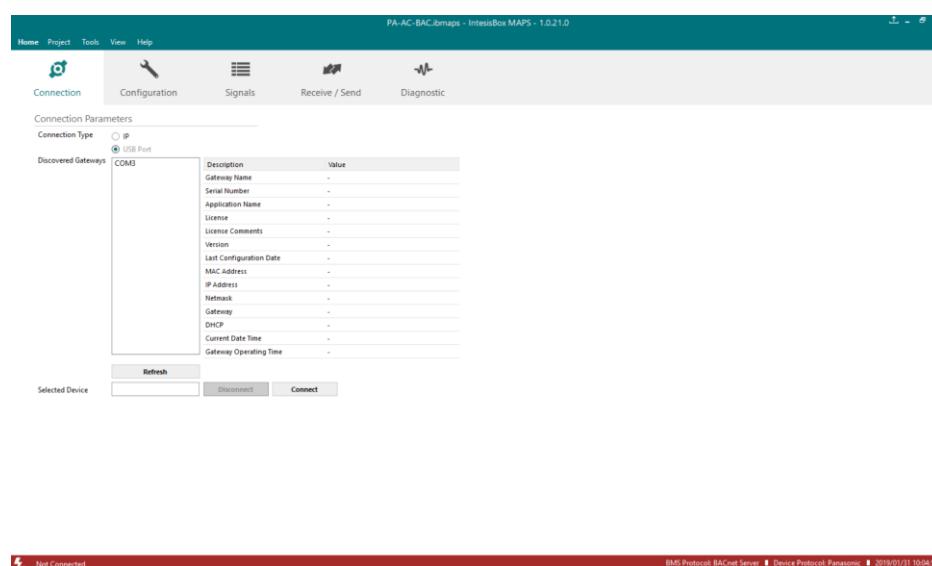
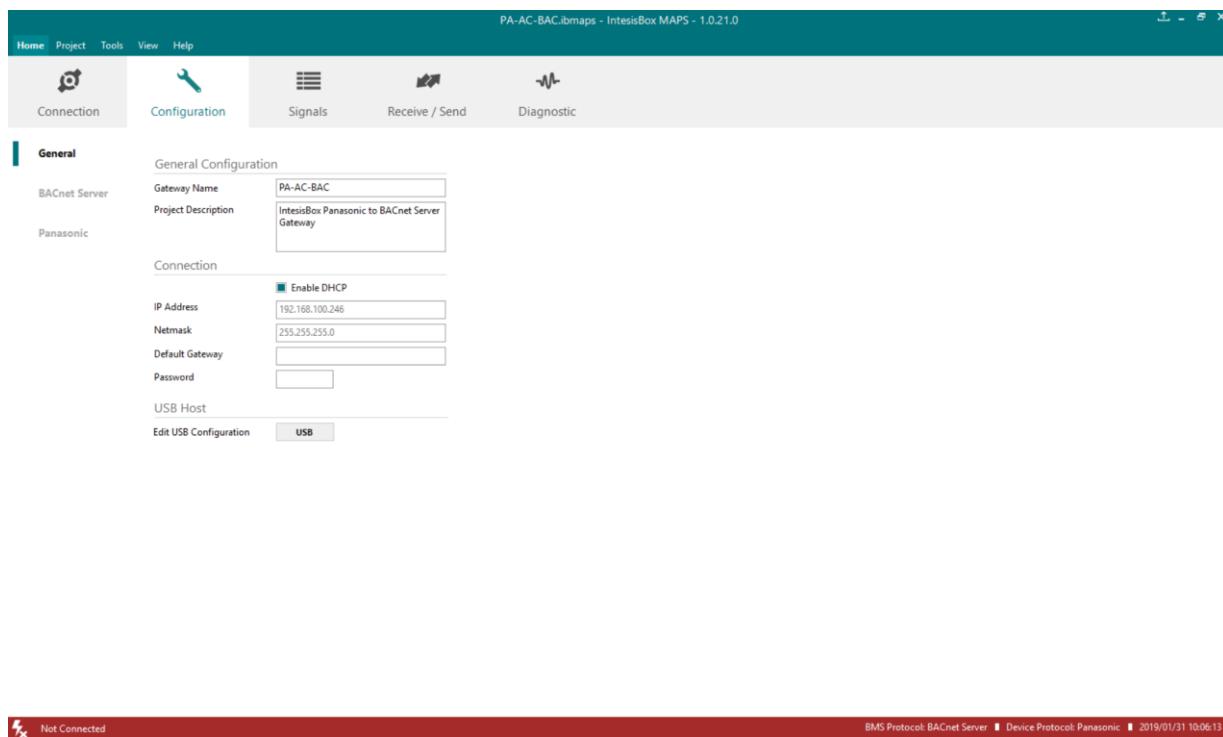


Figure 7.1 MAPS connection

### 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 Panasonic (Panasonic VRF interface parameters).

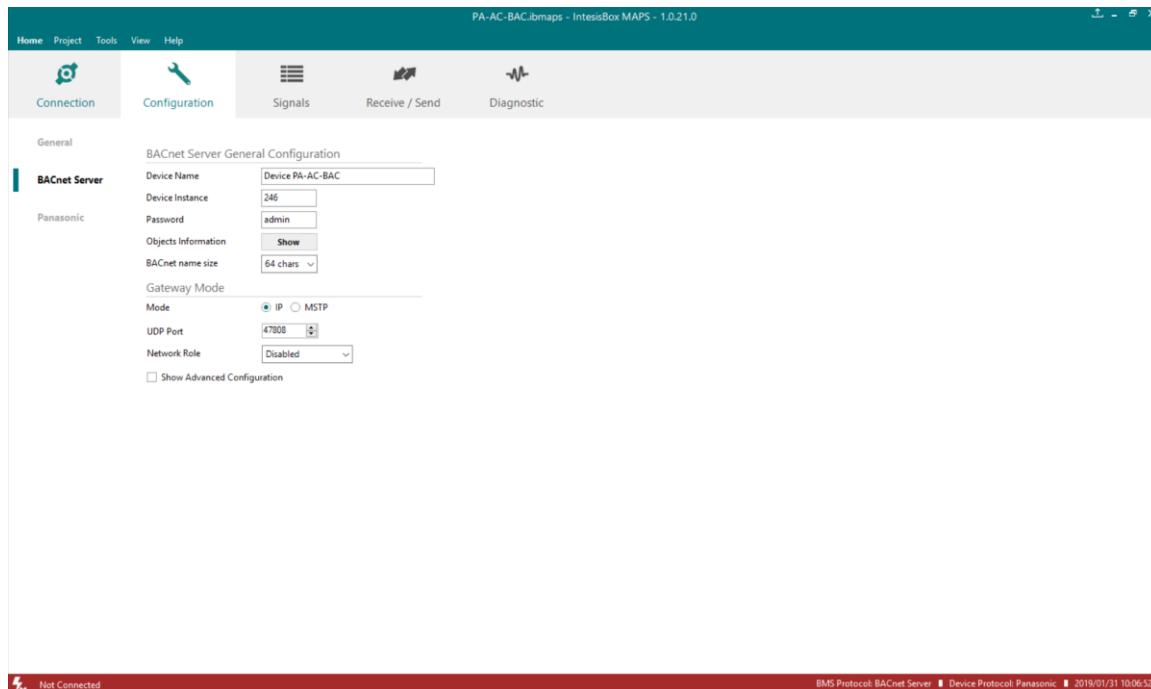


**Figure 7.2** IntesisBox MAPS configuration tab

## 7.2.4 BACnet Server configuration

Set parameters of BACnet interface of IntesisBox.

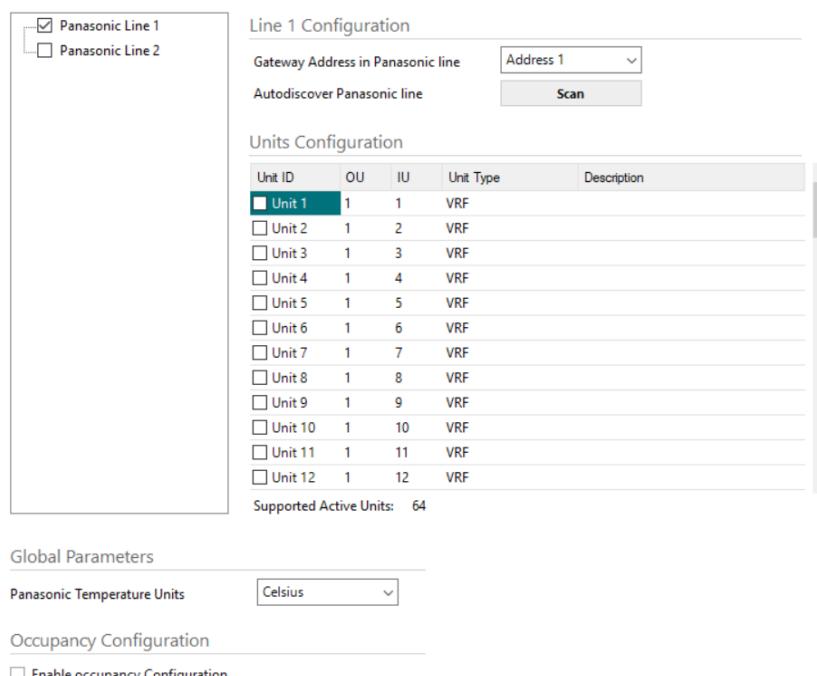
Find description of these settings in *IntesisBox MAPS BACnet User Manual*.



**Figure 7.3** IntesisBox MAPS BACnet configuration tab

## 7.2.5 Panasonic configuration

Set parameters for connection with Panasonic's installation.



**Figure 7.4** IntesisBox MAPS Panasonic configuration tab

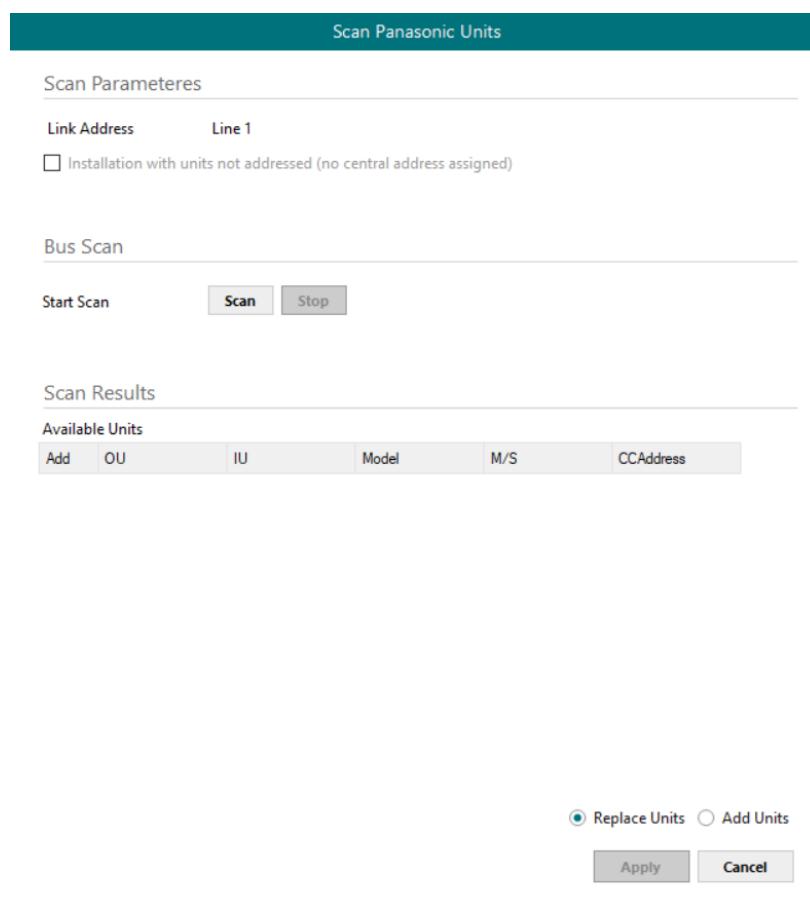
### Line configuration section:

Each line of Panasonic needs to be addressed by using the parameter “**Gateway Address in Panasonic line**”. There are 2 addresses reserved for the gateway in the Panasonic bus: address 1 and address 2. Note that only the version of 128 units allows the connection to 2 Panasonic lines simultaneously. The 16 and 64 units versions will only support the configuration of the “Panasonic Line 1”.

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

- **Unit ID**. 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 IntesisBox model)
- **Unit type**. Type will default to 'Not Defined'. When units have been detected after scan, it can be one of the following: TBD, GHP, PAC and VRF.
- **IU address**. Address 1..64 of Unit in Panasonic line.
- **OU address**. Address 1..30 of Outdoor Unit in Panasonic line.
- **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 P-Link installation is possible. To do so, click button **Scan**.

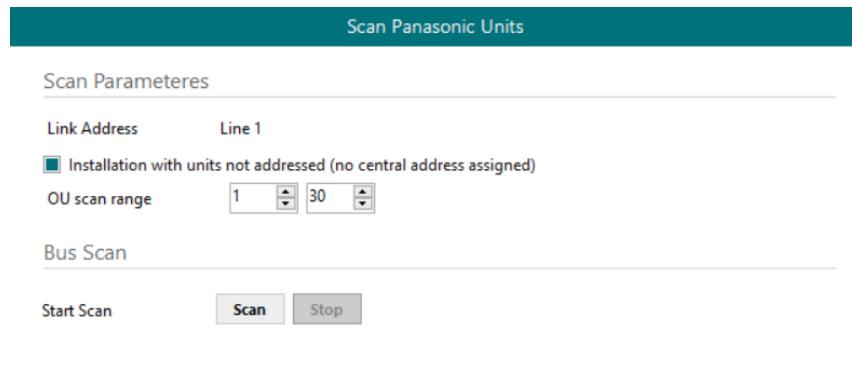


**Figure 7.5** IntesisBox MAPS Scan Panasonic Units window

**Scan parameters:**

There are 2 different types of Scan to be applied. By default, the fastest one is defined since it is assumed that Panasonic units (indoor units and outdoor units) have been addressed. However, and only in case the units do not have an address assigned, the parameter “**Installation with units not addressed (no central address assigned)**” must be selected.

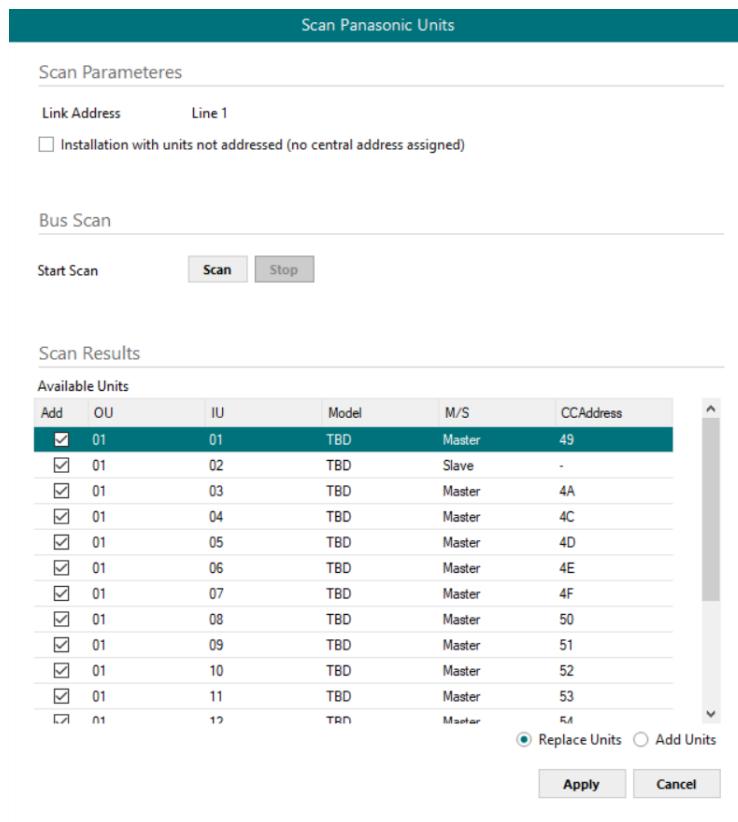
Please take into consideration that when the installation is not addressed, the scan process might take longer than the standard scan (up to 60 min). To decrease this time, it is highly recommended to reduce the OU range to be scanned as much as possible:



**Figure 7.6** IntesisBox MAPS Long Scan Panasonic Units window

By pressing **Scan** button, connected Panasonic line will be scanned for available units. Error window will appear if there is a problem in the connection with P-Link 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.



**Figure 7.7** IntesisBox MAPS Scan Panasonic 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.

### Global Parameters:

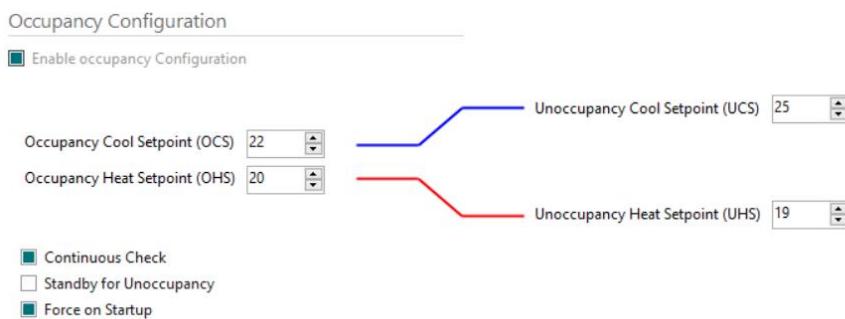
In this section it is possible to select the temperature units for monitoring of the temperature signals available in the gateways, Celsius (°C) or Fahrenheit (°F).

#### 7.2.5.1 Occupancy Function

Each indoor unit has its own occupancy signal. Remember that this signal needs to be feed by an external presence sensor which indicates if there is presense or not (occupancy). This signal is processed directly in the IntesisBox gateway.

To enable the use of this function, check the parameter “Enable occupancy Configuration” available in Panasonic configuration tab.

This functionality modifies 3 parameters from the AC system: Setpoint, Mode and On/Off.



- Occupancy/Unoccupancy Cool Setpoint (OCS/UCS):** Default value for setpoint temperature to be set when Occupancy/Unoccupancy is enabled and current mode is cool. UCS must always be greater or equal to OCS. Difference between OCS and OHS must be greater or equal to 2°C/4°F. It can be changed later on through BACnet (*Occ\_Cool\_setpoint* and *Unocc\_Cool\_Setpoint* BACnetObjects) and newer value will persist.
- Occupancy/Unoccupancy Heat Setpoint (OHS/UHS):** Default value for setpoint temperature to be set when Occupancy/Unoccupancy is enabled and current mode is heat. UHS must always be smaller or equal to OHS. Difference between OCS and OHS must be greater or equal to 2°C/4°F. It can be changed later on through BACnet (*Occ\_Heat\_setpoint* and *Unocc\_Heat\_Setpoint* BACnet Objects) and newer value will persist.
- Continuous check:** This checkbox is used to determine if the gateway will check the occupancy conditions constantly (check) or not (unchecked) by default. That means that with the the checkbox active, conditions are checked on each change of the temperature too, while if unchecked, this is only checked when the occupancy status changes. This check option can be changed later on through BACnet (*Occ\_ContinuousCheck* BACnet Object) and newer value will persist.
- Standby for Unoccupancy:** This checkbox determines the action to be taken while the ambient temperature is in between the deadband. If unchecked, indoor unit will turn off and if checked will remain on. It can be changed later on through BACnet (*Unocc\_DeadbandAction* BACnet Object) and newer value will persist.
- Force on startup:** If checked, values set in the configuration screen will be loaded after a reset. If unchecked, last values selected (as it can be changed through BACnet object) will be loaded after reset.

Note that the default units are in  $^{\circ}\text{C}$  and when changing from Celsius to Fahrenheit and vice versa all values are set to its default values.

When **occupancy mode is active** (there is presence in the room), according to current room temperature, **mode**, **setpoint** and **on/off** will be set to:

Condition	Setpoint	Mode	On/Off
Room temperature > OCS	Current OCS value	Cool	On
Room temperature < OHS	Current OHS value	Heat	On
OCS < Room temperature > OHS	OCS/OHS depending on current mode (If Fan or Dry mode is active, no setpoint is sent)	Current mode	On

When **unoccupancy mode is active** (there is no presence in the room), according to current room temperature, **mode**, **setpoint** and **on/off** will be set to:

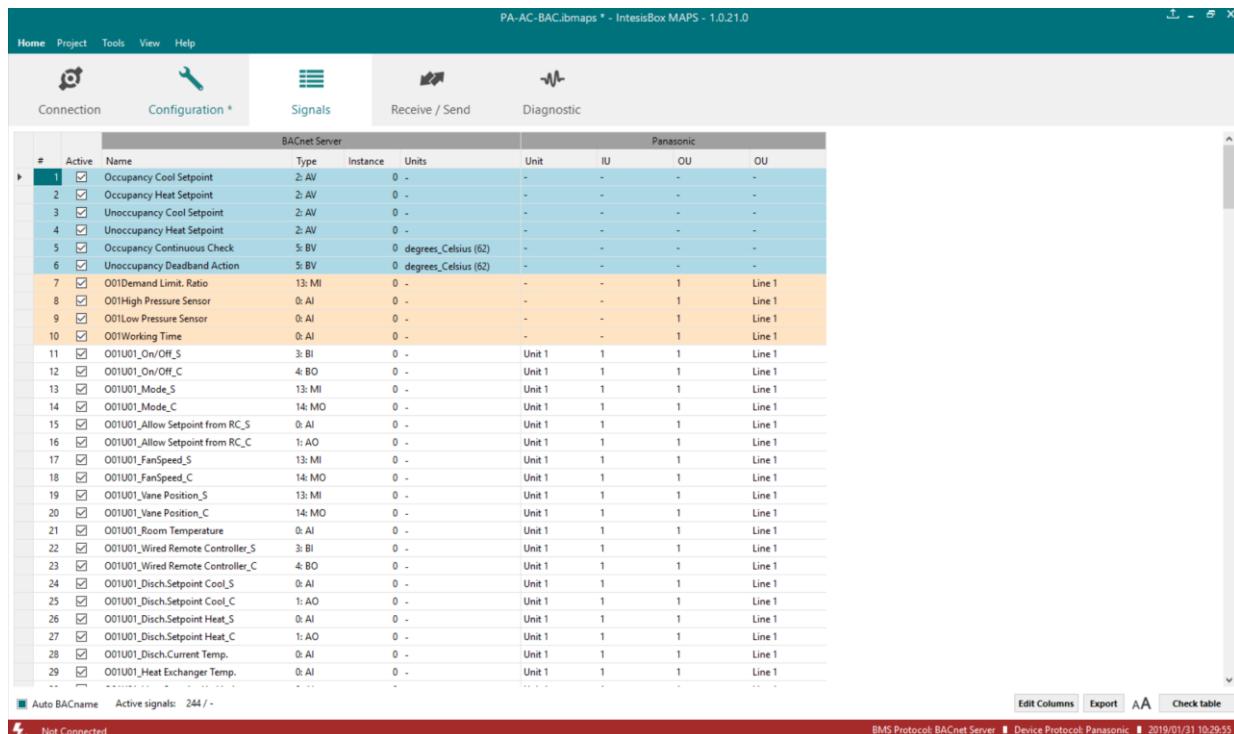
Condition	Setpoint	Mode	On/Off
Room temperature > OCS	Current UCS value	Cool	On
Room temperature < OHS	Current UHS value	Heat	On
OCS < Room temperature > OHS	UCS/UHS depending on current mode (If Fan or Dry mode is active, no setpoint is sent)	Current mode	On (Deadband action =1)
			Off (Deadband action =0)

These checks will be done each time the indoor unit occupancy status is changed and each time the room temperature changes if **check continuously** checkbox is checked.

The configuration set on the occupy tab is applied from the very first moment the occupancy signal is enabled until the user changes the setpoint, mode or the On/Off signal, which disables occupancy functionality.

## 7.2.6 Signals

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

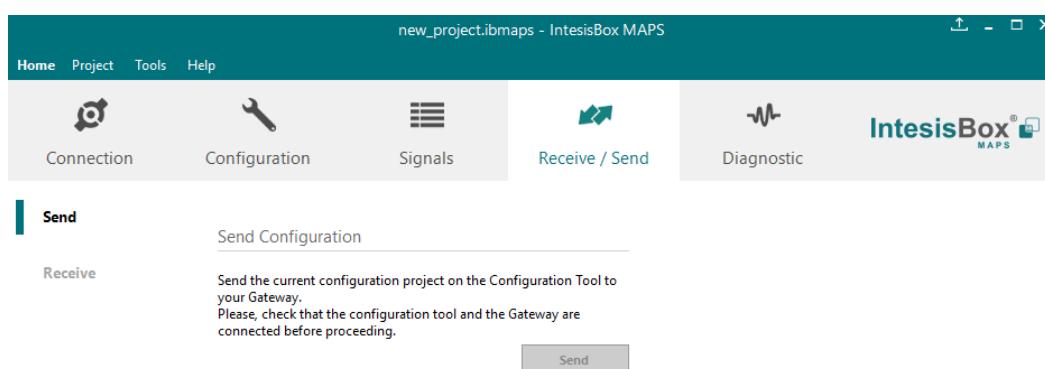


**Figure 7.8** IntesisBox MAPS Signals tab

## 7.2.7 Sending the configuration to IntesisBox

When the configuration is finished, follow the next steps.

- 1.- Save the project (Menu option **Project->Save**) on your hard disk (more information in IntesisBox MAPS User Manual).
- 2.- Go to tab '**Receive / Send**' of MAPS, and in **Send** section, press **Send** button. IntesisBox will reboot automatically once the new configuration is loaded.



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

**After any configuration change, do not forget to send the configuration file to the IntesisBox 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.

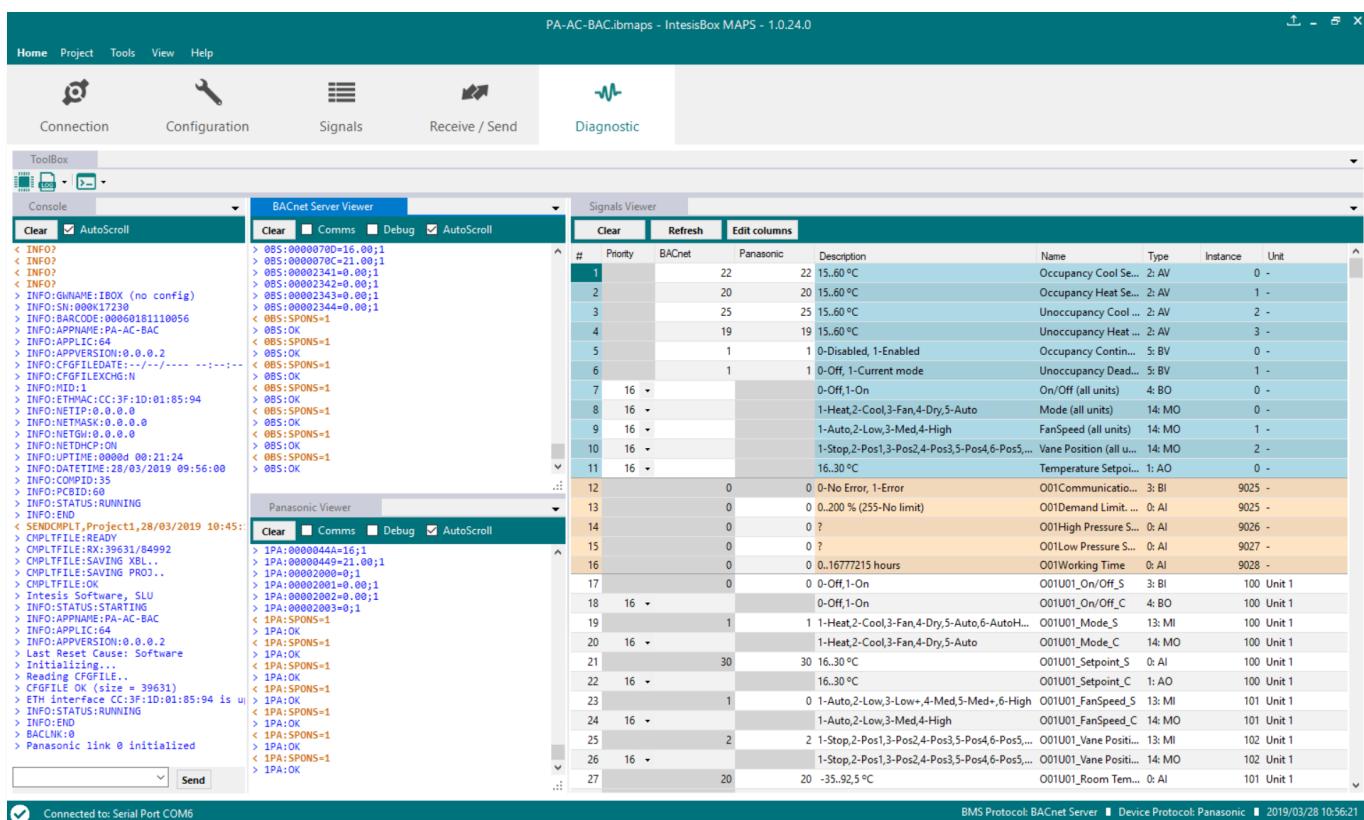
The Diagnostic section is composed by two main parts: Tools and Viewers.

- **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 Configuration Tool manual.

## 7.2.9 Set-up procedure

1. Install IntesisBox MAPS on your laptop, use the setup program supplied for this and follow the instructions given by the Installation wizard.
2. Install IntesisBox 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 IntesisBox (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 IntesisBox (More details in section 6).

4. Connect the communication cable coming from the Panasonic P-Link installation to the port marked as Port A of IntesisBox (More details in section 6).
5. In case you have the 128 version, connect the second Panasonic P-Link line to the port marked as Port B of IntesisBox (More details in section 6). Remember that BACnet MSTP is not available for this version.
6. Power up IntesisBox. 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 IntesisBox 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.

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

8. Open IntesisBox MAPS, create a new project selecting a copy of the one named **IBOX-BAC-PA**.
9. Modify the configuration as desired, save it and download the configuration file to IntesisBox as explained in the IntesisBox MAPS user manual.
10. 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 Panasonic installation is OK. In case there is no communication activity between IntesisBox and the BACnet and/or Panasonic units, check that those are operative: check communication cable used to connect all devices and any other communication parameter.

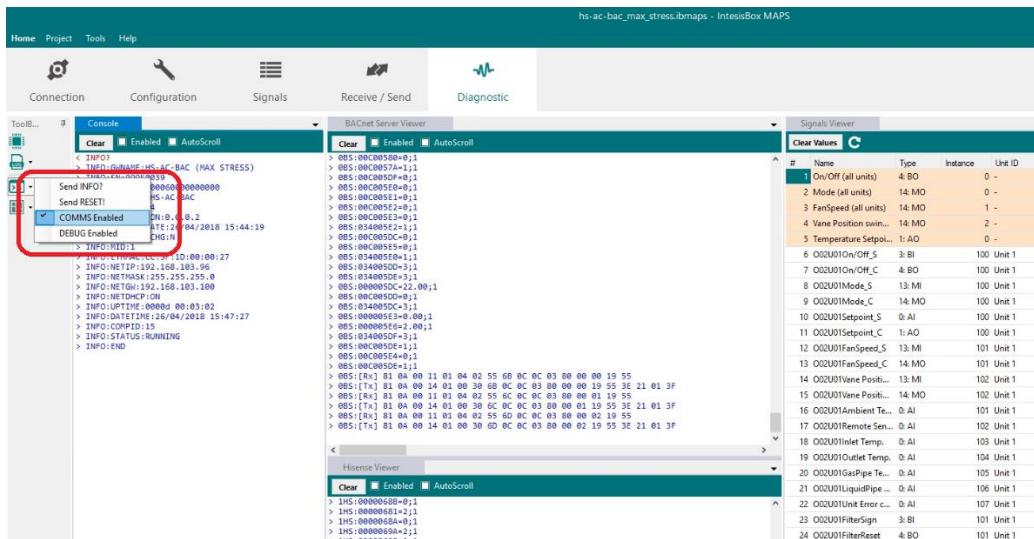


Figure 7.11 Enable COMMS

## 8 Electrical & Mechanical Features

### 8.1 IntesisBox BACnet Server for Panasonic 16 and 64 units



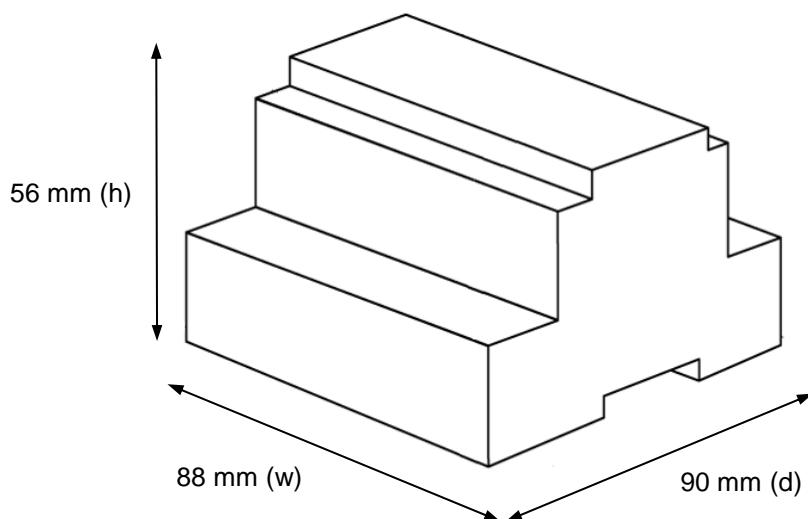
<b>Enclosure</b>	Plastic, type PC (UL 94 V-0) Net dimensions (dxwxh): 90x88x56 mm Recommended space for installation (dxwxh): 130x100x100mm Color: Light Grey. RAL 7035	<b>Battery</b>	Size: Coin 20mm x 3.2mm Capacity: 3V / 225mAh Type: Manganese Dioxide Lithium
<b>Mounting</b>	Wall. DIN rail EN60715 TH35.	<b>Console Port</b>	Mini Type-B USB 2.0 compliant 1500VDC isolation
<b>Terminal Wiring (for power supply and low-voltage signals)</b>	Per terminal: solid wires or stranded wires (twisted or with ferrule) 1 core: 0.5mm <sup>2</sup> ... 2.5mm <sup>2</sup> 2 cores: 0.5mm <sup>2</sup> ... 1.5mm <sup>2</sup> 3 cores: not permitted	<b>USB port</b>	Type-A USB 2.0 compliant Only for USB flash storage device (USB pen drive) Power consumption limited to 150mA (HDD connection not allowed)
<b>Power</b>	1 x Plug-in screw terminal block (3 poles) 9 to 36VDC +/-10%, Max.: 140mA. 24VAC +/-10% 50-60Hz, Max.: 127mA Recommended: 24VDC	<b>Push Button</b>	Button A: Not used Button B: Sends I-Am message to all BACnet ports
<b>Ethernet</b>	1 x Ethernet 10/100 Mbps RJ45 2 x Ethernet LED: port link and activity	<b>Operation Temperature</b>	0°C to +60°C
<b>Port A</b>	1 x P-Link Plug-in screw terminal block orange (2 poles) 1500VDC isolation from other ports 1 x Plug-in screw terminal block green (2 poles) Reserved for future use	<b>Operational Humidity</b>	5 to 95%, no condensation
<b>Switch A (SWA)</b>	1 x DIP-Switch for serial EIA485 configuration: Reserved for future use	<b>Protection</b>	IP20 (IEC60529)
<b>PORT B</b>	1 x Serial EIA232 (SUB-D9 male connector) <i>Not used</i> 1 x Serial EIA485 Plug-in screw terminal block (3 poles) A, B, SGND (Reference ground or shield) 1500VDC isolation from other ports	<b>LED Indicators</b>	10 x On board LED indicators 1 x Error LED 1 x Power LED 2 x Ethernet Link/Speed 2 x Port A TX/RX 2 x Port B TX/RX 1 x Button A indicator 1 x Button B indicator
<b>Switch B (SWB)</b>	1 x DIP-Switch for serial EIA485 configuration: Position 1: ON: 120 Ω termination active Off: 120 Ω termination inactive Position 2-3: ON: Polarization active Off: Polarization inactive		

## 8.2 IntesisBox BACnet IP Server for Panasonic 128 units

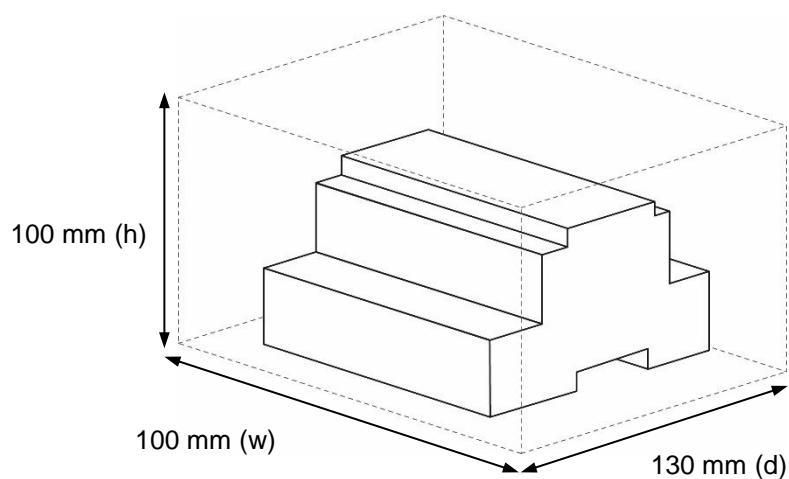


<b>Enclosure</b>	Plastic, type PC (UL 94 V-0) Net dimensions (dxwxh): 90x88x56 mm Recommended space for installation (dxwxh): 130x100x100mm Color: Light Grey, RAL 7035	<b>Battery</b>	Size: Coin 20mm x 3.2mm Capacity: 3V / 225mAh Type: Manganese Dioxide Lithium
<b>Mounting</b>	Wall. DIN rail EN60715 TH35.	<b>Console Port</b>	Mini Type-B USB 2.0 compliant 1500VDC isolation
<b>Terminal Wiring (for power supply and low-voltage signals)</b>	Per terminal: solid wires or stranded wires (twisted or with ferrule) 1 core: 0.5mm <sup>2</sup> ... 2.5mm <sup>2</sup> 2 cores: 0.5mm <sup>2</sup> ... 1.5mm <sup>2</sup> 3 cores: not permitted	<b>USB port</b>	Type-A USB 2.0 compliant Only for USB flash storage device (USB pen drive) Power consumption limited to 150mA (HDD connection not allowed)
<b>Power</b>	1 x Plug-in screw terminal block (3 poles) 9 to 36VDC +/-10%, Max.: 140mA. 24VAC +/-10% 50-60Hz, Max.: 127mA Recommended: 24VDC	<b>Push Button</b>	Button A: Not used Button B: Sends I-Am message to all BACnet ports
<b>Ethernet</b>	1 x Ethernet 10/100 Mbps RJ45 2 x Ethernet LED: port link and activity	<b>Operation Temperature</b>	0°C to +60°C
<b>Port A</b>	1 x P-Link 1 Plug-in screw terminal block orange (2 poles) 1500VDC isolation from other ports 1 x Plug-in screw terminal block green (2 poles) Reserved for future use	<b>Operational Humidity</b>	5 to 95%, no condensation
<b>Switch A (SWA)</b>	1 x DIP-Switch for serial EIA485 configuration: Reserved for future use	<b>Protection</b>	IP20 (IEC60529)
<b>PORT B</b>	1 x Serial EIA232 (SUB-D9 male connector) <i>Not used</i> 1 x P-Link 2 Plug-in screw terminal block orange (2 poles) 1500VDC isolation from other ports	<b>LED Indicators</b>	10 x On board LED indicators 1 x Error LED 1 x Power LED 2 x Ethernet Link/Speed 2 x Port A TX/RX 2 x Port B TX/RX 1 x Button A indicator 1 x Button B indicator
<b>Switch B (SWB)</b>	1 x DIP-Switch for serial EIA485 configuration: Reserved for future use		

## 9 Dimensions



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



## 10 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 considered 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	Error in Control Panel	Error category	Error Description
0	N/A	N/A	No active error
1	A01		GHP - Engine oil pressure fault
2	A02		GHP - Engine oil level fault
3	A03		GHP - Engine over speed
4	A04		GHP - Engine under speed
5	A05		GHP - Ignition power supply failure
6	A06		GHP - Engine start up failure
7	A07		GHP - Fuel gas valve failure
8	A08		GHP - Engine stalled
9	A09		GHP - Engine overload
10	A10		GHP - High exhaust gas temp
11	A11		GHP - Engine oil level failure
12	A12		GHP - Throttle actuator fault
13	A13		GHP - Fuel gas valve adjustment failure
14	A14		GHP - Engine oil pressure sensor fault
15	A15		GHP - Starter power output short circuit
16	A16		GHP - Starter motor locked
17	A17		GHP - Starter current (CT) coil failed
19	A19		GHP - Wax Valve (3 Way) fault
20	A20		GHP - Cooling water temp high
21	A21		GHP - Cooling water level fault
22	A22		GHP - Cooling water pump fault
23	A23		GHP - Engine crank angle sensor failure
24	A24		GHP - Engine cam angle sensor failure
25	A25		GHP - Clutch fault
26	A26		GHP - Misfire
27	A27		GHP - Catalyst temperature fault
28	A28		GHP - Generator fault
29	A29		GHP - Converter fault
30	A30		GHP - Fuel gas pressure low
33	C01	Central Controller Issues	Duplicated setting of control address
34	C02		Central control number of units mis-matched
35	C03		Incorrect wiring of central control
36	C04		Incorrect connection of central control
37	C05		System Controller fault, error in transmitting comms signal, i-door or o-door unit not working, wiring fault
38	C06		System Controller fault, error in receiving comms signal, i-door or o-door unit not working, wiring fault, CN1 not connected correctly
44	C12		Batch alarm by local controller
48	C16		Transmission error from adaptor to unit
49	C17		Reception error to adaptor from unit
50	C18		Duplicate central address in adaptor
51	C19		Duplicate adaptor address
52	C20		Mix of PAC & GHP type units on adaptor

53	C21		Memory fault in adaptor
54	C22		Incorrect address setting in adaptor
55	C23		Host terminal software failure
56	C24		Host terminal hardware failure
57	C25		Host terminal processing failure
58	C26		Host terminal communication failure
60	C28		Reception error of S-DDC from host terminal
61	C29		Initialization failure of S-DDC
63	C31		Configuration change detected by adaptor
65	E01	Addressing and Communication Problems	Remote control detecting error from indoor unit, Address not set/Auto address failed. Check interconnecting wiring etc. Re-address system.
66	E02		Remote detecting error from indoor unit,
67	E03		Indoor unit detecting error from remote,
68	E04		Indoor seeing error from outdoor. Qty of i/d units connected are less than qty set. Check; all i/d units are ON, reset turn off all units wait 5min power up
69	E05		Indoor unit detecting error from outdoor unit, Error in sending comms signal
70	E06		Outdoor unit detecting error from indoor unit, Error in receiving comms signal
71	E07		Outdoor unit detecting error from indoor unit, Error in sending comms signal
72	E08		Incorrect setting indoor/controller, Indoor address duplicated
73	E09		Incorrect setting indoor/controller, Remote address duplicated or IR wireless controller not disabled
74	E10		Indoor unit detecting error from 'option' plug, Error in sending comms signal
75	E11		Indoor unit detecting error from 'option' plug, Error in receiving comms signal
76	E12		Auto addressing failed, Auto address connector CN100 shorted during auto addressing
77	E13		Indoor unit failed to send signal to remote controller
78	E14		Setting Failure, Duplication of master indoor units
79	E15		Auto addressing failed, Number of indoor units connected are less than number set
80	E16		Auto addressing failed, Number of indoor units connected are more than number set
81	E17		Group control wiring error, Main indoor unit not sending signal for sub indoor units
82	E18		Group control wiring error, Main indoor unit not receiving signal for sub indoor units
84	E20		Auto addressing failed, No indoor units connected
88	E24		Auto addressing failed, Error on sub outdoor unit
89	E25		Auto addressing failed, Error on outdoor unit address setting
90	E26		Auto addressing failed, Quantity of main and sub outdoor units do not correspond to the number set on main outdoor unit P.C.B.
93	E29		Auto addressing failed, Sub outdoor unit not receiving comms for main outdoor unit
95	E31		Between units, Comms failure with MDC, does E31 remain after power is re-instated? If so replace PCB. & power PCB
97	F01	Sensor Faults	Indoor Heat Exch inlet temp sensor failure (E1)
98	F02		Indoor Heat Exch freeze temp sensor failure (E2)
99	F03		Indoor Heat Exch outlet temp sensor failure (E3)
100	F04		Outdoor Discharge temp sensor failure (TD) or (DISCH1)
101	F05		Outdoor Discharge temp sensor failure (DISCH2)

102	F06		Outdoor Heat Exch temp sensor failure (C1) or (EXG1)
103	F07		Outdoor Heat Exch temp sensor failure (C2) or (EXL1)
104	F08		Outdoor Air temp sensor failure (TO)
106	F10		Indoor inlet temp sensor failure
107	F11		Indoor outlet temp sensor failure
108	F12		Outdoor Intake sensor failure (TS)
109	F13		GHP - Cooling water temperature sensor failure
112	F16		Outdoor High pressure sensor failure
113	F17		GHP - Cooling water temperature sensor fault
114	F18		GHP - Exhaust gas temperature sensor fault
116	F20		GHP Clutch coil temperature fault
119	F23		Outdoor Heat Exch temp sensor failure (EXG2)
120	F24		Outdoor Heat Exch temp sensor failure (EXL2)
125	F29		Indoor EEPROM error
126	F30		Clock Function (RTC) fault
127	F31		Outdoor EEPROM error
129	H01	Compressor Issues	Compressor Fault, Over current (Comp1)
130	H02		Compressor Fault, Locked rota current detected (Comp1)
131	H03		Compressor Fault, No current detected (Comp1)
133	H05		Compressor Fault, Discharge temp not detected (Comp1)
134	H06		Compressor Fault, Low Pressure trip
135	H07		Compressor Fault, Low oil level
136	H08		Compressor Fault, Oil sensor Fault (Comp1)
139	H11		Compressor Fault, Over current (Comp2)
140	H12		Compressor Fault, Locked rota current detected (Comp2)
141	H13		Compressor Fault, No current detected (Comp2)
143	H15		Compressor Fault, Discharge temp not detected (Comp2)
149	H21		Compressor Fault, Over current (Comp3)
150	H22		Compressor Fault, Locked rota current detected (Comp3)
151	H23		Compressor Fault, No current detected (Comp3)
153	H25		Compressor Fault, Discharge temp not detected (Comp3)
155	H27		Compressor Fault, Oil sensor fault (Comp2)
156	H28		Compressor Fault, Oil sensor (connection failure)
159	H31		Compressor Fault, IPM trip (IMP current on temperature)
193	L01	Incorrect Settings	Setting Error, Indoor unit group setting error
194	L02		Setting Error, Indoor/outdoor unit type/model miss-matched
195	L03		Duplication of main indoor unit address in group control
196	L04		Duplication of outdoor unit system address
197	L05		2 or more controllers have been set as 'priority' in one system - shown on controllers set as 'priority'
198	L06		2 or more controllers have been set as 'priority' in one system - shown on controllers not set as 'priority'
199	L07		Group wiring connected on and individual indoor unit
200	L08		Indoor unit address/group not set
201	L09		Indoor unit capacity code not set
202	L10		Outdoor unit capacity code not set
203	L11		Group control wiring incorrect
205	L13		Indoor unit type setting error, capacity
207	L15		Indoor unit paring fault
208	L16		Water heat exch unit setting failure
209	L17		Miss-match of outdoor unit with different refrigerant
210	L18		4-way valve failure
211	L19		Water heat exch unit duplicated address
213	L21		Gas type setup failure
225	P01		Indoor unit fault, Fan motor thermal overload

226	P02	Indoor Unit Problems	Outdoor unit fault, Compressor motor thermal overload, over or under voltage
227	P03		Outdoor unit fault, Compressor discharge temperature too high (Comp1) over 111 °C. Low on ref gas, exp valve, pipework damage.
228	P04		Outdoor unit fault, High pressure trip
229	P05		Outdoor unit fault, Open phase on power supply. Check power on each phase, inverter pcb, control pcb
233	P09		Indoor unit fault, Ceiling panel incorrectly wired
234	P10		Indoor unit fault, Condensate float switch opened
235	P11		GHP - Water Heat exch low temp (frost protection) fault
236	P12		Indoor unit fault, Fan DC motor fault
238	P14		Input from leak detector (If fitted)
239	P15		Refrigerant loss, high discharge temp and EEV wide open and low compressor current draw.
240	P16		Outdoor unit fault, Open phase on compressor power supply
241	P17		Outdoor unit fault, Compressor discharge temperature too high (Comp2) over 111 degC. Low on ref gas, exp valve, pipework damage.
242	P18		Outdoor unit fault, By-pass valve failure
243	P19		Outdoor unit fault, 4 way valve failure, i/door temp rises in cooling or falls in heating. Check wiring, coil, pcb output, valve operation.
244	P20		Ref gas, high temp/pressure fault, heat exch temp high C2, 55-60 degC, cooling over-load, sensor fault.
246	P22		Outdoor unit fan motor fault, fan blade jammed, check connections, does fan turn freely, motor resistance 30-40ohm on each pair, no fan fault, yes pcb fault.
250	P26		Outdoor unit fault, Compressor overcurrent - check winding resistance, Inverter failure - check internal resistance term HIC + & - to UVW 200-300Kohm or more
252	P29		Outdoor unit fault, Inverter circuit fault - Motor-current Detection Circuit (MDC) fault, check comp windings, sensors C1 & TS, if ok possible pcb failure.
253	P30		Indoor unit fault, System controller detected fault on sub indoor unit
255	P31		Simultaneous operation multi control fault, Group controller fault