ENGLISH

BACnet MS/TP Server Gateway for Daikin

COMPATIBLE WITH DAIKIN SKY AND VRV AIR CONDITIONING SYSTEMS

USER MANUAL
Version 1.0.3
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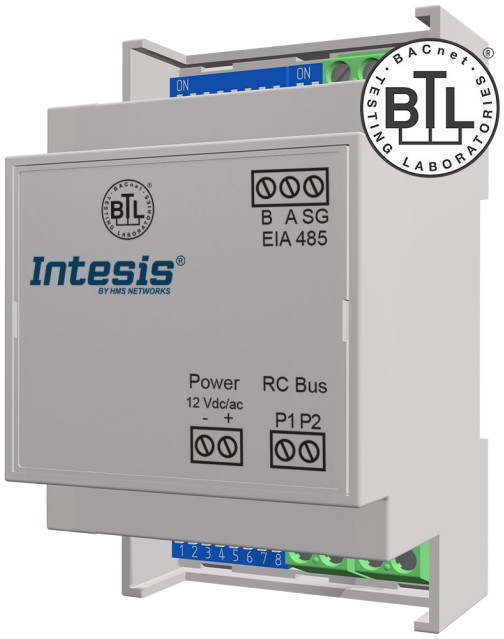

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Table of Contents

1. Description, Compatible AC systems, and Order Codes

BACnet MS/TP Server Gateway for Daikin Air Conditioners.
Compatible with Sky and VRV air conditioning systems commercialized by Daikin.

Use the compatibility tool to get a complete list of compatible AC units: https://compatibility.intesis.com/#

ORDER CODE	LEGACY ORDER CODE
IN485DAI001R000	INBACDAI001R100

2. General Information

2.1. Intended Use of the User Manual

This manual contains the main features of this Intesis gateway and the instructions for its appropriate installation, configuration, and operation.

The contents of this manual should be brought to the attention of any person who installs, configures, or operates this gateway or any associated equipment.

Keep this manual for future reference during the installation, configuration, and operation.

2.2. General Safety Information

IMPORTANT
Follow these instructions carefully. Improper work may seriously harm your health and damage the gateway and/or any other equipment connected to it.

Only technical personnel, following these instructions and the country legislation for installing electrical equipment, can install and manipulate this gateway.

Install this gateway indoors, in a restricted access location, avoiding exposure to direct solar radiation, water, high relative humidity, or dust.

All wires (for communication and power supply, if needed) must only be connected to networks with indoor wiring. All communication ports are considered for indoor use and must only be connected to SELV circuits.

Disconnect all systems from their power source before manipulating and connecting them to the gateway.

Use SELV-rated NEC class 2 or limited power source (LPS) power supply.

Supply always a correct voltage to power the gateway. See Technical Specifications (page 60).

Respect the expected polarity of power and communication cables when connecting them to the gateway.

2.3. Admonition Messages and Symbols

DANGER
Instructions that must be followed to avoid an imminently hazardous situation that, if not avoided, will result in death or severe injury.

WARNING
Instructions that must be followed to avoid a potentially hazardous situation that, if not avoided, could result in death or severe injury.

CAUTION
Instruction that must be followed to avoid a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.

IMPORTANT
Instruction that must be followed to avoid a risk of reduced functionality and/or damage to the equipment or to avoid a network security risk.

NOTE
Additional information which may facilitate installation and/or operation.

TIP
Helpful advice and suggestions.

NOTICE
Remarkable Information.

3. Overview

3.1. Introduction

This document describes the integration of Daikin air conditioning (AC) systems into BACnet installations using the Intesis IN485DAI001R000 gateway.

The aim of this integration is to monitor and control your Daikin AC system using any BACnet software solution to remotely monitor and control your installation. To do so, the gateway allows BACnet communication by polling or subscription requests (COV).

The gateway makes Daikin AC indoor units available through independent BACnet objects to set the AC system properties and functionalities. The gateway allows ID mapping of fixed BACnet objects. The configuration process is very easy with the built-in DIP switch blocks. For more information, see Connections and Switches (page 53).

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

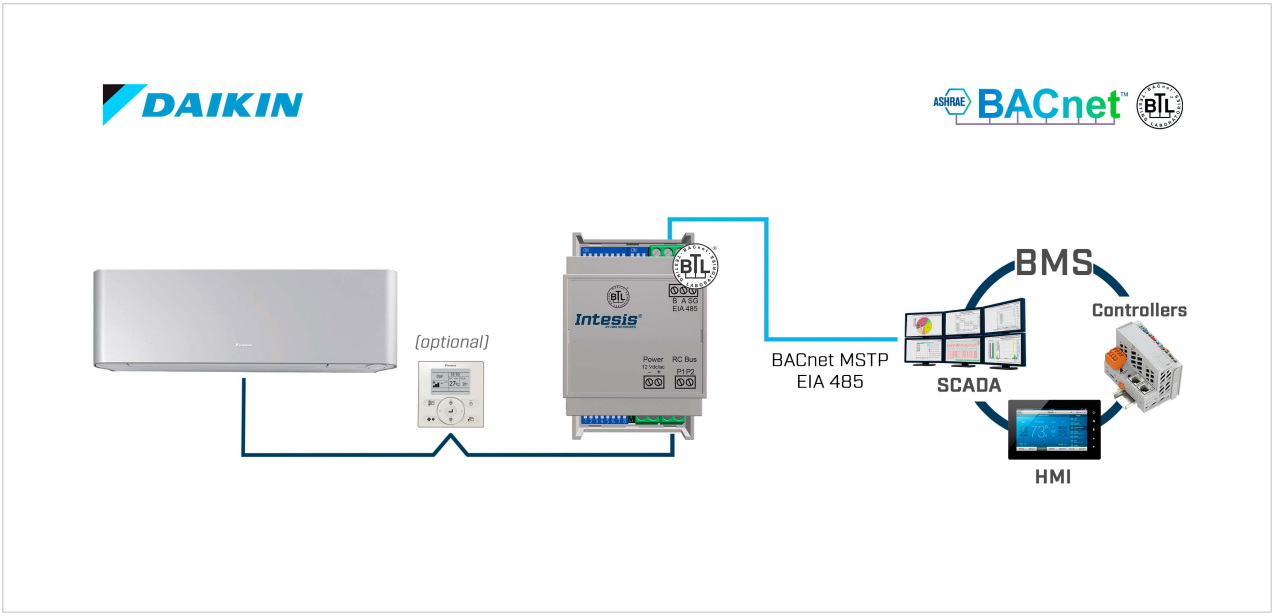


Figure 1. Integration of Daikin AC units into a BACnet installation using the Intesis IN485DAI001R000 gateway

3.2. General Functionality

The role of the gateway is to link the elements of Daikin AC units to BACnet objects.

The Intesis gateway continuously reads the Daikin AC system and stores the status of all objects in its memory, ready to be served when requested from the BACnet side.

The gateway also sends commands to the Daikin AC system to control indoor units.

If the AC unit has a wired remote controller (RC), you can:

- Set the wired RC as header and the gateway as follower.
- Set the wired RC as follower and the gateway as header.

NOTE

- You can configure this behavior via the DIP switch SW1. See DIP switches (page 55).
- For more information on the wired RC connection, see Connection Procedure (page 54).

3.3. Gateway Capacity

This Intesis gateway can integrate one single Daikin AC unit and its associated elements.

Table 1. Gateway capacity

Element	Max
Number of indoor units that the gateway can control	1 (see note)
Number of AC signals available as objects in the gateway	35

NOTE

You can connect several AC units to the gateway, but they will perform as one. This means you cannot send different commands to different units.

3.4. Quickstart Guide

IMPORTANT

Disconnect all systems from the power source before connecting them to the gateway.

NOTE

DIN rail mounting inside a grounded cabinet or metal enclosure is recommended.

1. Mount the Intesis gateway in the desired installation site.
2. Connect the gateway to the BACnet network via its EIA-485 port.
3. Connect the gateway to the wired remote controller bus (P1P2). See details in Connection Procedure (page 54).
4. Configure the gateway using the built-in DIP switches. See details in DIP switches (page 55).
5. Check the communication performance between the BACnet bus and the AC system through the gateway's LED indicators. See details in LED Status (page 57).
6. The Intesis gateway is ready to be used in your system.

4. Protocol Implementation Conformance Statement

BACnet Protocol Implementation Conformance Statement (PICS)

Date: 2023-05-01

Vendor Name: Intesis (HMS Industrial Networks SLU)

Product Name: Intesis Air Conditioning Interface Series 2E

Product Model Number: Intesis Air Conditioning Interface Series 2E

Application Software Version: 1.0

Firmware Revision: 1.0.0.0

BACnet Protocol Revision: 15

Product Description:

Daikin air conditioning system - BACnet MS/TPRTU.

Abstraction of Daikin air conditioning system properties and functionalities as BACnet objects.

4.1. 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.

4.2. Segmentation Capability

Segmented request supported: ☐ No ☒ Yes Window Size · 16 ·

Segmented responses supported: ☐ No ☒ Yes Window Size · 16 ·

4.3. 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 manager (Clause 9), baud rate(s): 9600, 19200, 38400, 76800, 115200

☐ MS/TP subordinate (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:

4.4. Device Address Binding

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

4.5. 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).

4.6. Character Sets Supported

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

☐ IBM™/Microsoft™ DBCS

☐ JIS C 6226

☐ ISO 10646 (UCS-4)

☐ ISO 10646 (UCS-2)

☒ ISO 10646 (UTF-8)

☐ ISO 8859-1

4.7. Gateway

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

Daikin air conditioning system - BACnet MS/TP.

5. BACnet Interoperability Building Blocks Supported (BIBBs)

5.1. Data Sharing BIBBs

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

5.2. Device Management BIBBs

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

6. Service Types

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

7. Objects

7.1. Supported Object Types

Object type	ID	Supported	Management point
Analog-Input	0	☒	SetPoint_status RoomTemperature_status ErrorCode ErrorAddress DIP_SW_S1_status DIP_SW_S2_status SerialNumber
Analog-Output	1	☒	Setpoint_command RoomTemperature_command
Analog-Value	2	☒	OnTimeCounter OccupiedCoolSetpoint OccupiedHeatSetpoint UnoccupiedCoolSetpoint UnoccupiedHeatSetpoint WaitInit_as_Master
Averaging	18	☐	
Binary-Input	3	☒	OnOff_status ErrorActive FilterSign ThermostatON VirtualTempActive
Binary-Output	4	☒	OnOff_command FilterReset
Binary-Value	5	☒	OccupacyContinuousCheck UnoccupiedDeadBandAction LockRemoteControl
Calendar	6	☐	
Command	7	☐	
Device	8	☒	IN485DAI001R000
Event-Enrollment	9	☐	
File	10	☐	
Group	11	☐	
Life-Safety-Point	21	☐	
Life-Safety-Zone	22	☐	
Loop	12	☐	
Multistate-Input	13	☒	Mode_status FanSpeed_status AirDirectionUD_status ErrorCodeM
Multistate-Output	14	☒	Mode_command FanSpeed_command AirDirectionUD_command
Multistate-Value	19	☒	Occupancy
Notification-Class	15	☐	

Object type	ID	Supported	Management point
Program	16	☐	
Schedule	17	☐	
Trend-Log	20	☐	

7.2. Member Objects

7.2.1. Type: Gateway

Object name	Description	Object type	Object instance
IN485DAI001R000	Daikin RC gateway	Device	246000 (default)

7.2.2. Type: Indoor Unit

Object name	Object type	Object instance
OnOff_status	BI	0
OnOff_command	BO	0
Mode_status	MI	0
Mode_command	MO	0
SetPoint_status	AI	0
Setpoint_command	AO	0
FanSpeed_status	MI	1
FanSpeed_command	MO	1
AirDirectionUD_status	MI	2
AirDirectionUD_command	MO	2
RoomTemperature_status	AI	1
RoomTemperature_command	AO	1
ErrorCode	AI	2
ErrorCodeM	MI	4
ErrorActive	BI	1
ErrorAddress	AI	4
OnTimeCounter	AV	0
FilterSign	BI	6
FilterReset	BO	4
Occupancy	MV	0
OccupiedCoolSetpoint	AV	1
OccupiedHeatSetpoint	AV	2
UnoccupiedCoolSetpoint	AV	3
UnoccupiedHeatSetpoint	AV	4
OccupancyContinuousCheck	BV	0
UnoccupiedDeadBandAction	BV	1
VirtualTempActive	BI	14
ThermostatON	BI	7
LockRemoteControl	BV	2
DIP_SW_S1_status	AI	9
DIP_SW_S2_status	AI	10
SerialNumber	AI	11
WaitInit_as_Master	AV	8

7.3. Objects and Properties

7.3.1. Daikin AC Gateway (Device Object Type)

Object_Identifier: The gateway can be identified in the BACnet network automatically or manually:

- **Automatic addressing (default):** This mode uses a base address of 146000 + the MAC address number selected in the DIP switch SW2.
- **Manual addressing:** The gateway switches to this mode when this property receives a value from the BACnet side.

IMPORTANT
During the manual addressing mode, the gateway will not consider the MAC address configured with the DIP switch SW2.

IMPORTANT
If **Object_Identifier** is overwritten from BACnet, the DIP switch SW2 configuration will not be considered for device instance calculation until the gateway is reset to the factory settings. See Restore the Factory Settings (page 59).

Object_name: In the **Device Object**, is configurable writing directly on this property.

Description: In the **Device Object**, is configurable writing directly on the property. Max. length: 63 characters.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	Device, 246000 (default value)	R	W
Object_Name	CharacterString		R	W
Object_Type	BACnetObjectType	DEVICE (8) (Device Object Type)	R	R
System_Status	BACnetDeviceStatus	OPERATIONAL (0)	R	R
Vendor_Name	CharacterString	HMS Industrial Networks SLU	R	R
Vendor_Identifier	Unsigned16	246	R	R
Model_Name	CharacterString		R	R
Firmware_Revision	CharacterString	1.0.0.0	R	R
Application_Software_ Version	CharacterString	1.0.0.0	R	R
Location	CharacterString	""	O	-
Description	CharacterString		O	W
Protocol_Version	Unsigned	1	R	R
Protocol_Revision	Unsigned	12	R	R
Protocol_Services_ Supported	BACnetServiceSupported		R	R
Protocol_Object_Types_ Supported	BACnetObjectTypes Supported	Refer to section Supported Object Types (page 11)	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 for MS/TP	R	R
Segmentation_Supported	BACnetSegmentation	SEGMENTED-BOTH (0)	R	R
Max_Segments_accepted	Unsigned	16	O	R
VT_Classes_Supported	List of BACnetVTClass	-	O	-
Active_VT_Sessions	List of BACnetVTSession	-	O	-
Local_Date	Date	-	O	-
Local_Time	Time	-	O	-
UTC_Offset	INTEGER	-	O	-

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
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		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	-

7.3.2. OnOff_status (Binary Input Object Type)

It indicates if the indoor unit is turned on or off.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Binary Input, 0)	R	R
Object_Name	CharacterString	OnOff_status	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	-
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	-
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	-

7.3.3. OnOff_command (Binary Output Object Type)

It turns the indoor unit on or off.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Binary Output, 0)	R	R
Object_Name	CharacterString	OnOff_command	R	R
Object_Type	BACnetObjectType	BINARY_OUTPUT (4)	R	R
Present_Value	BACnetBinaryPV	INACTIVE (0) / ACTIVE (1)	R	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	-
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	R
Relinquish_Default	BACnetBinaryPV	INACTIVE (0)	R	R
Time Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Feedback_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	-

7.3.4. Mode_status (Multistate Input Object Type)

It indicates the indoor unit's current mode.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Input, 0)	R	R
Object_Name	CharacterString	Mode_status	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT (13)	R	R
Present_Value	Unsigned	1 .. 8	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	8	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **Mode status table** below.	O	R
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Alarm_Values	List of Unsigned	-	O	-
Fault_Values	List of 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	-

Table 2. Mode status

Present_Value	State_Text
1	Heat
2	Cool
3	Fan
4	Dry
5	Auto
6	AutoHeat
7	AutoCool
8	AutoFan

7.3.5. Mode_command (Multistate Output Object Type)

It sets the AC indoor unit's mode.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Output,0)	R	R
Object_Name	CharacterString	Mode_command	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 .. 5	R	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 the **Mode command table** below	O	R
Priority_Array	BACnetPriorityArray	BACnetPriorityArray	R	R
Relinquish_Default	Unsigned	1	R	R
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Feedback_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	-

Table 3. Mode command

Present_Value	Content displayed in State_Text
1	Heat
2	Cool
3	Fan
4	Dry
5	Auto

NOTE

When setting the control mode in Auto, the AC unit itself decides the appropriate status: Auto, Autoheat, or Autocool.

7.3.6. UserSetPoint_status (Analog Input Object Type)

It indicates the current BACnet setpoint temperature when the virtual temperature object is active. See VirtualTemperatureActive (Binary Input Object Type) (page 43).

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 17)	R	R
Object_Name	CharacterString	UserSetPoint_status	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	18 .. 30°C / 64 .. 86°F	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) UNRELIABLE_OTHER (7)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Update_Interval	Unsigned	300	O	-
Units	BACnetEngineeringUnits	Celsius degrees (62) Farenheit degrees (64)	R	R
Min_Pres_Value	REAL	18°C / 64°F	O	-
Max_Pres_Value	REAL	30°C / 86°F	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	-

7.3.7. Setpoint_status (Analog Input Object Type)1

It indicates the current temperature setpoint for the indoor unit.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 0)	R	R
Object_Name	CharacterString	SetPoint_status	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	10 .. 32°C / 50 .. 90°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	Celsius degrees (62) Fahrenheit degrees (64)	R	R
Min_Pres_Value	REAL	10°C / 50°F	O	R
Max_Pres_Value	REAL	32°C / 90°F	O	R
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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit via the DIP switches. More information in DIP switches (page 55).

7.3.8. Setpoint_command (Analog Output Object Type)

It sets the desired temperature for the indoor unit.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Output, 0)	R	R
Object_Name	CharacterString	SetPoint_command	R	R
Object_Type	BACnetObjectType	ANALOG_OUTPUT (1)	R	R
Present_Value	REAL	10 .. 32°C / 50 .. 90°F	R	W
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	Celsius degrees (62) Fahrenheit degrees (64)	R	R
Min_Pres_Value	REAL	10°C / 50°F	O	R
Max_Pres_Value	REAL	32°C / 90°F	O	R
Resolution	Unsigned	-	O	-
COV_Increment	REAL	0	O	W
Priority_Array	BACnetPriorityArray	BACnetPriorityArray	R	R
Relinquish_Default	Unsigned	22	R	R
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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 55).

7.3.9. FanSpeed_status (Multistate Input Object Type)

It indicates the indoor unit's fan speed.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Input, 1)	R	R
Object_Name	CharacterString	FanSpeed_status	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT (13)	R	R
Present_Value	Unsigned	1 .. 4	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/TRUE	R	R
Number_Of_States	Unsigned	4	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **Fan speed status table** below.	O	R
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Alarm_Values	List of Unsigned	-	O	-
Fault_Values	List of 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	-

Table 4. Fan speed status

Present_Value	State_Text
1	Auto
2	Low
3	Med
4	High

7.3.10. FanSpeed_command (Multistate Output Object Type)

It sets the indoor unit's fan speed.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Output, 1)	R	R
Object_Name	CharacterString	FanSpeed_command	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 .. 4	R	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 the **Fan speed command table** below	O	R
Priority_Array	BACnetPriorityArray	BACnetPriorityArray	R	R
Relinquish_Default	Unsigned	1	R	R
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Feedback_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	-

Table 5. Fan speed command

Present_Value	State_Text
1	Auto
2	Fan Speed 1
3	Fan Speed 2
4	Fan Speed 3

7.3.11. AirDirectionUD_status (Multistate Input Object Type)

It indicates the indoor unit's vertical air direction (up-down) status.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Input, 2)	R	R
Object_Name	CharacterString	AirDirectionUD_status	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/TRUE	R	R
Number_Of_States	Unsigned	7	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **Air direction status table** below.	O	R
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Alarm_Values	List of Unsigned	-	O	-
Fault_Values	List of 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	-

Table 6. Air direction up-down status

Present_Value	Content displayed in State_Text
1	Pos 1
2	Pos 2
3	Pos 3
4	Pos 4
5	Pos 5
6	Swing
7	Stop

7.3.12. AirDirectionUD_command (Multistate Output Object Type)

It sets the indoor unit's vertical air direction (up-down).

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Output, 2)	R	R
Object_Name	CharacterString	AirDirectionUD_command	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 .. 6	R	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	6	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **Air direction command table** below	O	R
Priority_Array	BACnetPriorityArray	-	R	R
Relinquish_Default	Unsigned	-	R	R
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Feedback_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	-

Table 7. Air direction up-down command

Present_Value	Content displayed in State_Text
1	Up
2	Med-1
3	Med-2
4	Med-3
5	Down
6	Swing

7.3.13. RoomTemperature_status (Analog Input Object Type)

It indicates the room temperature perceived by the AC indoor unit sensor.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 1)	R	R
Object_Name	CharacterString	RoomTemperature_status	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	10 .. 38°C / 50 .. 100°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	Celsius degrees (62) Fahrenheit degrees (64)	R	R
Min_Pres_Value	REAL	10°C / 50°F	O	-
Max_Pres_Value	REAL	38°C / 100°F	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	-

7.3.14. RoomTemperature_command (Analog Output Object Type)

It sets the desired room temperature.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Output, 1)	R	R
Object_Name	CharacterString	RoomTemperature_command	R	R
Object_Type	BACnetObjectType	ANALOG_OUTPUT (1)	R	R
Present_Value	REAL	10 .. 38°C / 50 .. 100°F	R	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	Celsius degrees (62) Fahrenheit degrees (64)	R	R
Min_Pres_Value	REAL	10°C / 50°F	O	-
Max_Pres_Value	REAL	38°C / 100°F	O	-
Resolution	REAL	-	O	-
COV_Increment	REAL	0	O	W
Priority_Array	BACnetPriorityArray	BACnetPriorityArray	R	R
Relinquish_Default	Unsigned	-32768	R	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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 55).

7.3.15. ErrorCode (Analog Input Object Type)

It indicates the AC system's current error.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 2)	R	R
Object_Name	CharacterString	ErrorCode	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-1 .. 349	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
Update_Interval	Unsigned	300	O	-
Units	BACnetEngineeringUnits	NO_UNITS (95)	R	R
Min_Pres_Value	REAL	-1	O	-
Max_Pres_Value	REAL	349	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	-

NOTICE

For more information on each error code, see Error Codes (page 61).

7.3.16. ErrorCodeM (Multistate Input Object Type)

It indicates the AC system's current error.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Input, 4)	R	R
Object_Name	CharacterString	ErrorCodeM	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT(13)	R	R
Present_Value	Unsigned	1 .. 156	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	156	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **Error codes table** below	O	R
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Alarm_Values	List of Unsigned	-	O	-
Fault_Values	List of 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	-

Table 8. Error codes

Pesent_Value	State_Text	Pesent_Value	State_Text	Pesent_Value	State_Text
1	-	55	H8	109	U4
2	CommError	56	H9	110	U5
3	A0	57	HA	111	U6
4	A1	58	HH	112	U7
5	A2	59	HC	113	U8
6	A3	60	HE	114	U9
7	A4	61	HF	115	UA
8	A5	62	F0	116	UH
9	A6	63	F1	117	UC
10	A7	64	F2	118	UJ
11	A8	65	F3	119	UE
12	A9	66	F6	120	UF
13	AA	67	FA	121	60
14	AH	68	FH	122	61
15	AJ	69	FC	123	62
16	AE	70	FE	124	63
17	AF	71	FF	125	64
18	C0	72	J0	126	65
19	C3	73	J1	127	68
20	C4	74	J2	128	6A
21	C5	75	J3	129	6H
22	C6	76	J4	130	6C

Pesent_Value	State_Text	Pesent_Value	State_Text	Pesent_Value	State_Text
23	C7	77	J5	131	6J
24	C8	78	J6	132	6E
25	C9	79	J7	133	6F
26	CA	80	J8	134	51
27	CH	81	J9	135	52
28	CC	82	JA	136	53
29	CJ	83	JH	137	54
30	CE	84	JC	138	40
31	CF	85	JE	139	41
32	E0	86	JF	140	42
33	E1	87	L0	141	43
34	E3	88	L3	142	44
35	E4	89	L4	143	31
36	E5	90	L5	144	32
37	E6	91	L6	145	33
38	E7	92	L7	146	34
39	E8	93	L8	147	35
40	E9	94	L9	148	36
41	EA	95	LA	149	3A
42	EH	96	LC	150	3H
43	EC	97	P0	151	3C
44	EJ	98	P1	152	M2
45	EE	99	P3	153	M8
46	EF	100	P4	154	MA
47	H0	101	P5	155	MC
48	H1	102	P6	156	UNKOWN
49	H2	103	P7		
50	H3	104	PJ		
51	H4	105	U0		
52	H5	106	U1		
53	H6	107	U2		
54	H7	108	U3		

7.3.17. ErrorActive (Binary Input Object Type)

It indicates if there is an active error in the AC system.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Binary Input, 1)	R	R
Object_Name	CharacterString	ErrorActive	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, 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	O	R
Active_Text	CharacterString	Error	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	-
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	-

7.3.18. ErrorAddress (Analog Input Object Type)

It indicates the address of the indoor unit which is reporting the error.

Property Identifier	Property Datatype	Value	ASHRAE	Intesis
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 4)	R	R
Object_Name	CharacterString	ErrorAddress	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	-	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/TRUE	R	R
Update_Interval	Unsigned	-	O	-
Units	BACnetEngineeringUnits	NO_UNITS (95)	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	-

7.3.19. OnTimeCounter (Analog Value Object Type)

It indicates the AC unit running time.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 0)	R	R
Object_Name	CharacterString	OnTimeCounter	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	0 .. 65535	R	R/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
Update_Interval	Unsigned	-	O	-
Units	BACnetEngineeringUnits	Hours (71)	R	R
Min_Pres_Value	REAL	0	O	-
Max_Pres_Value	REAL	65535	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	-

7.3.20. FilterSign (Binary Input Object Type)

It indicates the status of the filter, if there's an error or not.

Property Identifier	Property Datatype	Value	ASHRAE	Intesis
Object_Identifier	BACnetObjectIdentifier	(Binary Input, 1)	R	R
Object_Name	CharacterString	FilterSign	R	R
Object_Type	BACnetObjectType	BINARY_OUTPUT (4)	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	OK	O	R
Active_Text	CharacterString	Dirty	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	-
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Feedback_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	-

7.3.21. FilterReset (Binary Output Object Type)

It resets the filter signal.

Property Identifier	Property Datatype	Value	ASHRAE	Intesis
Object_Identifier	BACnetObjectIdentifier	(Binary Output, 4)	R	R
Object_Name	CharacterString	FilterReset	R	R
Object_Type	BACnetObjectType	BINARY_OUTPUT (4)	R	R
Present_Value	BACnetBinaryPV	INACTIVE (0) / ACTIVE (1)	W	W
Description	CharacterString	-	O	-
Device_Type	CharacterString	-	O	-
Status_Flags	BACnetStatusFlags	{FALSE, FALSE, FALSE, FALSE}	R	R
Event_State	BACnetEventState	STATE_NORMAL (0)	R	R
Reliability	BACnetReliability	NO_FAULT_DETECTED (0)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Polarity	BACnetPolarity	NORMAL (0)	R	R
Inactive_Text	CharacterString	Normal	O	R
Active_Text	CharacterString	Reset	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	R
Relinquish_Default	BACnetBinaryPV	INACTIVE (0)	R	R
Time Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Feedback_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	-

7.3.22. Occupancy (Multistate Value Object Type)

It indicates the current occupancy status.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Output, 0)	R	R
Object_Name	CharacterString	Occupancy	R	R
Object_Type	BACnetObjectType	MULTISTATE_VALUE (19)	R	R
Present_Value	BACnetBinaryPV	1 .. 3	R	R/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	3	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **Occupancy values table** below	O	R
Priority_Array	BACnetPriorityArray	-	R	-
Relinquish_Default	Unsigned	-	R	-
Time_Delay	Unsigned	-	O	-
Notification_Class	Unsigned	-	O	-
Alarm_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	-

Table 9. Occupancy values

Present_Value	Content displayed in State_Text
1	Occupied
2	Unoccupied
3	Disabled

7.3.23. OccupiedCoolSetPoint (Analog Value Object Type)

It indicates the temperature setpoint when the room is occupied and the cool mode is selected and the occupancy object is enabled:

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 1)	R	R
Object_Name	CharacterString	OccupiedCoolSetPoint	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	0 .. 65535	R	R/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
Update_Interval	Unsigned	-	O	-
Units	BACnetEngineeringUnits	Degrees Celsius (62) Degrees Fahrenheit (64)	R	R
Min_Pres_Value	REAL	0	O	-
Max_Pres_Value	REAL	65535	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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 55).

7.3.24. OccupiedHeatSetPoint (Analog Value Object Type)

It indicates the temperature setpoint when the room is occupied and the heat mode is selected and the occupancy object is enabled.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 2)	R	R
Object_Name	CharacterString	OccupiedHeatSetPoint	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	0 .. 65535	R	R/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
Update_Interval	Unsigned	-	O	-
Units	BACnetEngineeringUnits	Degrees Celsius (62) Degrees Fahrenheit (64)	R	R
Min_Pres_Value	REAL	0	O	-
Max_Pres_Value	REAL	65535	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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 55).

7.3.25. UnoccupiedCoolSetPoint (Analog Value Object Type)

It indicates the setpoint when the room is unoccupied and the cool mode is selected and the occupancy object is enabled.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 3)	R	R
Object_Name	CharacterString	UnoccupiedCoolSetPoint	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	0 .. 65535	R	R/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
Update_Interval	Unsigned	-	O	-
Units	BACnetEngineeringUnits	Degrees Celsius (62) Degrees Fahrenheit (64)	R	R
Min_Pres_Value	REAL	0	O	-
Max_Pres_Value	REAL	65535	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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 55).

7.3.26. UnoccupiedHeatSetPoint (Analog Value Object Type)

It indicates the setpoint temperature when the room is unoccupied and the heat mode is selected and the occupancy object is enabled.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 4)	R	R
Object_Name	CharacterString	UnoccupiedHeatSetPoint	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	0 .. 65535	R	R/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
Update_Interval	Unsigned	-	O	-
Units	BACnetEngineeringUnits	Degrees Celsius (62) Degrees Fahrenheit (64)	R	R
Min_Pres_Value	REAL	0	O	-
Max_Pres_Value	REAL	65535	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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 55).

7.3.27. OccupancyContinuousCheck (Binary Value Object Type)

It indicates if the system is continuously checking the setpoint and occupancy conditions.

Property Identifier	Property Datatype	Value	ASHRAE	Intesis
Object_Identifier	BACnetObjectIdentifier	(Binary Value, 0)	R	R
Object_Name	CharacterString	OccupancyContinuousCheck	R	R
Object_Type	BACnetObjectType	BINARY_VALUE (5)	R	R
Present_Value	BACnetBinaryPV	INACTIVE (0) / ACTIVE (1)	R	R/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	-

7.3.28. UnoccupiedDeadbandAction (Binary Value Object Type)

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

Property Identifier	Property Datatype	Value	ASHRAE	Intesis
Object_Identifier	BACnetObjectIdentifier	(Binary Value, 1)	R	R
Object_Name	CharacterString	UnoccupiedDeadbandAction	R	R
Object_Type	BACnetObjectType	BINARY_VALUE (5)	R	R
Present_Value	BACnetBinaryPV	INACTIVE (0) / ACTIVE (1)	R	R/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	Off	O	R
Active_Text	CharacterString	CurrentMode	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	-

7.3.29. VirtualTemperatureActive (Binary Input Object Type)

It indicates if the virtual temperature function is active or not. For more information on this function, see Virtual Temperature (page 52).

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Binary Input, 14)	R	R
Object_Name	CharacterString	VirtualTempActive	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, FALSE, FALSE}	R	R
Event_State	BACnetEventState	STATE_NORMAL (0)	R	R
Reliability	BACnetReliability	NO_FAULT_DETECTED (0) UNRELIABLE_OTHER (7)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Polarity	BACnetPolarity	NORMAL (0)	R	R
Inactive_Text	CharacterString	No	O	R
Active_Text	CharacterString	Yes	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	-
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	-

7.3.30. LockRemoteControl (Binary Value Object Type)

It is used to lock or unlock the indoor unit infrared remote controller.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Binary Value, 2)	R	R
Object_Name	CharacterString	LockRemoteControl	R	R
Object_Type	BACnetObjectType	BINARY_VALUE (5)	R	R
Present_Value	BACnetBinaryPV	INACTIVE (0) / ACTIVE (1)	R	R/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	Unlocked	O	R
Active_Text	CharacterString	Locked	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	-

7.3.31. ThermostatON (Binary Input Object Type)

It indicates if the AC system is currently working or not according to the set point temperatures selected. Please do not confuse with On/Off function.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Binary Input, 7)	R	R
Object_Name	CharacterString	ThermostatON	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	-
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	-
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	-

7.3.32. DIP_SW_S1_status (Analog Input Object Type)

It indicates the status of the DIP switch block SW1 in decimal value. To get the status of each individual switch of SW1, just convert it into binary. The gateway reads this value only when booting up.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 9)	R	R
Object_Name	CharacterString	DIP_SW_S1_status	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	BACnetBinaryPV	0 .. 255	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 / TRUE	R	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	-
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	-
Units	BACnetEngineeringUnits	No units (95)	R	R
COV_Increment	REAL	0	O	W

7.3.33. DIP_SW_S2_status (Analog Input Object Type)

It indicates the status of the DIP switch block SW2 in decimal value. To get the status of each individual switch of SW2, just convert it into binary. The gateway reads this value only when booting up.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 9)	R	R
Object_Name	CharacterString	DIP_SW_S2_status	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	BACnetBinaryPV	0 .. 255	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 / TRUE	R	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	-
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	-
Units	BACnetEngineeringUnits	No units (95)	R	R
COV_Increment	REAL	0	O	W

7.3.34. SerialNumber (Analog Input Object Type)

It indicates the serial number of the gateway with the pattern **000EXXXXX**, where:

- **000E** is constant and not included in the Present Value property.
- **XXXXX** is the unique device serial number. This is the information provided by the Present Value.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 11)	R	R
Object_Name	CharacterString	SerialNumber	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	BACnetBinaryPV	00000 .. 99999	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
Polarity	BACnetPolarity	NORMAL (0)	R	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	-
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	-
Units	BACnetEngineeringUnits	No units (95)	R	R
COV_Increment	REAL	0	O	W

7.3.35. WaitInit_as_Master (Analog Value Object Type)

It defines a communication delay in seconds after starting up the gateway. (The gateway must be set as client in the RC bus).

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Value, 8)	R	R
Object_Name	CharacterString	WaitInit_as_Master	R	R
Object_Type	BACnetObjectType	ANALOG_VALUE (2)	R	R
Present_Value	REAL	0 .. 90	R	R/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
Update_Interval	Unsigned	-	O	-
Units	BACnetEngineeringUnits	Seconds (73)	R	R
Min_Pres_Value	REAL	0	O	-
Max_Pres_Value	REAL	90	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	-

8. Occupancy

IMPORTANT
This function requires an external sensor on the control system (BMS) side to detect if there's someone in the room.

The occupancy function determines the AC unit behavior depending on the presence or absence of people in the room. This signal is processed directly in the Intesis gateway and modifies three parameters from the AC system: Setpoint, Mode, and On/Off.

To adjust the settings for the current mode (Heat or Cool), the gateway offers six different BACnet objects:

- OccupiedCoolSetPoint
- OccupiedHeatSetPoint
- UnoccupiedCoolSetPoint
- UnoccupiedHeatSetPoint
- OccupancyContinousCheck
- UnoccupiedDeadbandAction

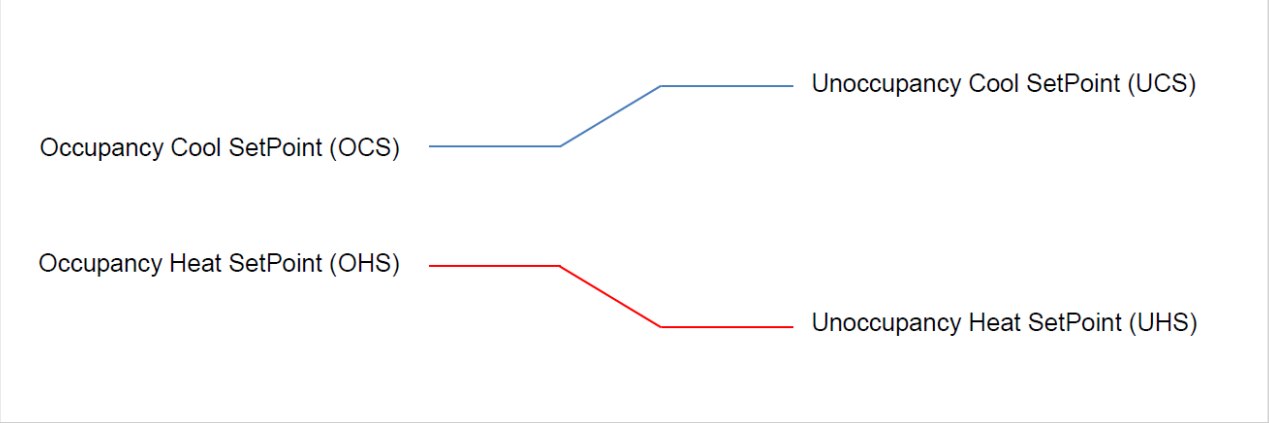


Figure 2. Temperature setpoint settings

NOTICE
The minimum difference between Cool and Heat setpoints must be 2°C / 4°F.

Occupancy/Unoccupancy Cool SetPoint (OCS/UCS): This is the default value for the setpoint temperature when the current mode is Cool, and Occupancy / Unoccupancy is enabled. UCS must always be greater or equal to OCS. The difference between OCS and OHS must be greater or equal to 2°C / 4°F).

Occupancy/Unoccupancy Heat SetPoint (OHS/UHS): This is the default value for the setpoint temperature when the current mode is Heat, and Occupancy / Unoccupancy is enabled. UHS must always be smaller or equal to OHS. The difference between OCS and OHS must be greater or equal to 2°C / 4°F.

Occupancy Continous check: It determines when the gateway checks the occupancy:

- If the parameter is checked, the gateway checks the occupancy when there's any change in the room's temperature.
- If the parameter is unchecked, it only checks the occupancy when the occupancy status changes.

Unoccupied Deadband Action: This determines the AC unit behavior while the ambient temperature is in between the deadband. If unchecked, the indoor unit will turn off; if checked, it will remain on.

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 OCS value	Heat	On
OCS < Room temperature > OHS	OCS/OHS depending on the 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/of**f 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 the current mode (If Fan or Dry mode is active, no setpoint is sent)	Current mode	On (Deadband action=1)
			Off (Deadband action=0)

The room temperature is cross-checked against temperature settings as described above when:

- The AC indoor unit occupancy status changes.
- The room temperature changes (only if the **check continuously** function is enabled).

NOTICE
Any local change (for example with the remote control) in the Setpoint, Mode, or the On/Off signal will disable the Occupancy functionality.

9. Virtual Temperature

AC indoor units and external temperature sensors are usually placed in different locations (for example, the external temperature sensor is in the wired remote controller, two meters (six feet) under the AC indoor unit). This creates a difference between the real temperature at which the AC unit operates and the temperature perceived by the sensor and the people in the room.

To overcome this situation, the virtual temperature function applies a formula to make the AC indoor unit operate at the appropriate temperature:

SAC = SU – (TU – TAC)

Where:

- **SAC**: Setpoint value sent to the AC indoor unit by the gateway after applying the formula.
- **SU**: Setpoint value written by the user.
- **TU**: External temperature reference written by the BMS temperature sensor (RoomTemp_command).
- **TAC**: Ambient temperature that the indoor unit or the WRC (if it is configured) registers.

IMPORTANT
You can enable this function only when there's a wired remote controller acting as a header, and you configure the gateway to act as a follower. This way, the gateway will register any change in the RoomTemp_command object and activate the virtual temperature function. Otherwise, if the gateway is set as header, the AC indoor unit will use the temperature reported by its own sensor on the return path, and any value written in the RoomTemp_command object will take no effect.

NOTE
The temperature to calculate the virtual temperature can be registered by:

- The indoor unit's temperature probe
- An additional temperature probe installed in the indoor unit
- The wired remote controller's temperature probe
- A BACnet temperature probe connected to the gateway

10. Connections and Switches

10.1. Connection to an External Power Supply

IMPORTANT
In most cases, this gateway is powered by the remote controller bus itself, and there is no need to connect an external power supply. However, depending on the number and type of remote controllers installed, the bus could not supply the needed power.

TIP
Some signs indicating there is not enough power in the bus may include, for example, a malfunction of the remote controllers' displays or performance.

If that's the case, connect a 12 VDC/AC SELV-rated NEC class 2 or Limited Power Source (LPS) power supply in the gateway's Power connector.

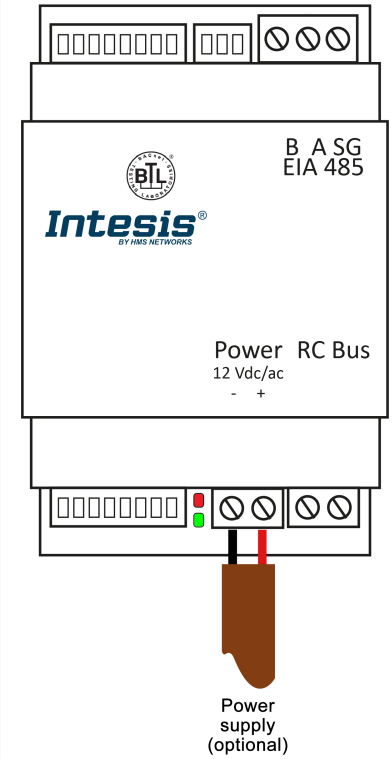


Figure 3. Power connector

IMPORTANT
Respect polarity.

10.2. Connection Procedure

CAUTION
Disconnect all systems from the power source before connecting them to the gateway.

IMPORTANT
Keep communication cables away from power and ground wires.

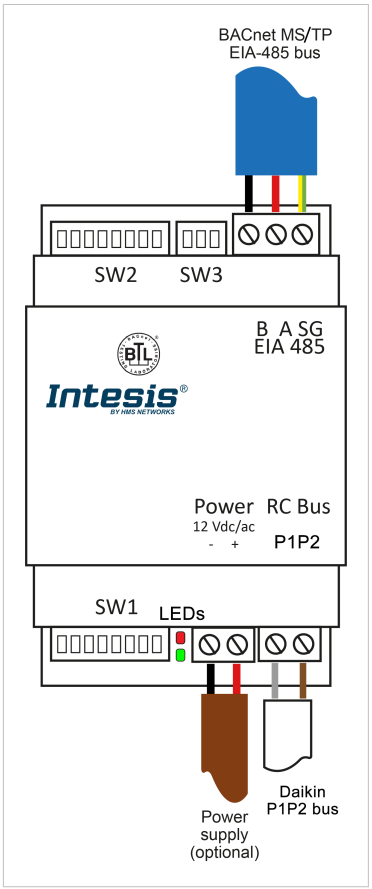


Figure 4. Wiring diagram

Connection to the wired remote controller bus

1. Mount the Intesis gateway in the desired installation site.
2. Connect the gateway at any point of the P1P2 bus.

NOTE
- The P1P2 bus is a two-wire bus that connects the AC indoor unit and the wired remote controller.
- This connection has no specific polarity.

If the AC unit has a wired remote controller (RC), you can:

- Set the wired RC as header and the gateway as follower.
- Set the wired RC as follower and the gateway as header.

NOTE
You can configure this behavior via the DIP switch SW1. See DIP switches (page 55).

IMPORTANT
Although it is not mandatory, we recommend connecting a wired remote controller in the RC bus since it may be necessary to establish proper communication with some indoor units.

Connection to the BACnet MS/TP bus

3. Connect the BACnet MS/TP bus to the EIA-485 port of the gateway.

IMPORTANT
Observe polarity: B-, A+, and SG for ground connection.

IMPORTANT
- EIA-485 bus doesn't allow loop or star topologies.
- Maximum length for the EIA-485 bus is 1200 meters.

4. Reconnect all systems to their power source.

10.3. DIP switches

The gateway includes three DIP switches: SW1 (8 switches) at the bottom, SW2 (8 switches) and SW3 (3 switches) at the top.

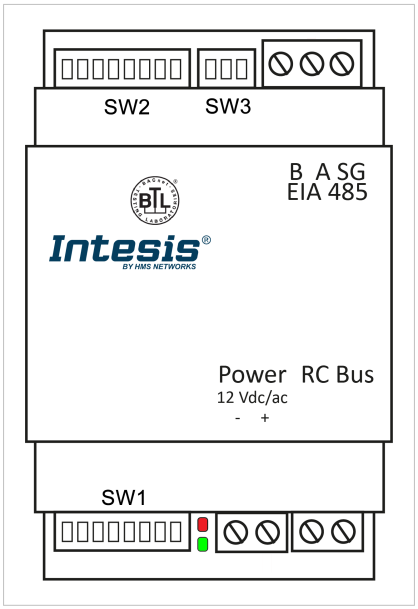


Figure 5. IN485DAI001R000 DIP switches

Table 10. SW1 (P1): Gateway configuration; (P2): AC unit configuration; (P6 to P8): BACnet MS/TP baudrate

Binary value	Switches								Description
b0 .. b7	1	2	3	4	5	6	7	8	
0 X X X X X X X	↓	X	X	X	X	X	X	X	Follower in P1P2 bus (default)
1 X X X X X X X	↑	X	X	X	X	X	X	X	Header in P1P2 bus
X 0 X X X X X X	X	↓	X	X	X	X	X	X	Indoor unit temperature reading (default)
X 1 X X X X X X	X	↑	X	X	X	X	X	X	Remote controller temperature reading
X X X X X 0 0 0	X	X	X	X	X	↓	↓	↓	Autobaudrate (default value)
X X X X X 1 0 0	X	X	X	X	X	↑	↓	↓	9600 bps
X X X X X 0 1 0	X	X	X	X	X	↓	↑	↓	19200 bps
X X X X X 1 1 0	X	X	X	X	X	↑	↑	↓	38400 bps
X X X X X 0 0 1	X	X	X	X	X	↓	↓	↑	57600 bps
X X X X X 1 0 1	X	X	X	X	X	↑	↓	↑	76800 bps
X X X X X 0 1 1	X	X	X	X	X	↓	↑	↑	115200 bps
X X X X X 1 1 1	X	X	X	X	X	↑	↑	↑	Autobaudrate

NOTE

If **Autobaudrate** is selected, the gateway will scan the network to find any other BACnet MS/TP device and will match its baudrate. Once detected, the baudrate will only be modified after a reset/ reboot of the gateway.

Table 11. SW2 (P1 to P7): BACnet MS/TP MAC address; (P8): Temperature unit (°C/°F)

Binary value	Switches								MAC address	Description
b0 .. b7	1	2	3	4	5	6	7	8		
0 0 0 0 0 0 0 X	↓	↓	↓	↓	↓	↓	↓	X	0	-
1 0 0 0 0 0 0 X	↑	↓	↓	↓	↓	↓	↓	X	1	-
0 1 0 0 0 0 0 X	↓	↑	↓	↓	↓	↓	↓	X	2	-
1 1 0 0 0 0 0 X	↑	↑	↓	↓	↓	↓	↓	X	3	-
...	...							...	...	-
1 0 1 1 1 1 1 X	↑	↓	↑	↑	↑	↑	↑	X	125	-
0 1 1 1 1 1 1 X	↓	↑	↑	↑	↑	↑	↑	X	126	-
1 1 1 1 1 1 1 X	↑	↑	↑	↑	↑	↑	↑	X	127	-
X X X X X X X 0	X	X	X	X	X	X	X	↓	-	Temperature values in BACnet are represented in Celsius degrees (default value)
X X X X X X X 1	X	X	X	X	X	X	X	↑	-	Temperature values in BACnet are represented in Fahrenheit degrees

NOTE

By default, the **Device instance** base is 2460000. Setting the SW2 switches, you can add from 0 to 127, so the final Device instance address can be from 2460000 to 2460127.

IMPORTANT

If you overwrite the **Device instance** object from the BMS side (for example, using the control terminal), this function to set up the **Device instance** with the SW2 switches will be deactivated. To activate this function again, a factory reset is needed.

Table 12. SW3 (P1 to P3): BACnet polarization and termination resistor

Binary value	Switches			Description
b0 .. b2	1	2	3	
0 X X	↓	X	X	EIA-485 bus without termination resistor. The gateway is not at one end of the EIA-485 bus (default value)
1 X X	↑	X	X	120 Ω termination resistor active. The gateway is at one end of the EIA-485 bus
X 0 0	X	↓	↓	No bus polarization (default value)
X 1 1	X	↑	↑	Bus polarization active

IMPORTANT

The DIP switches configuration will only take effect after rebooting the gateway.

11. Setup Process

11.1. Prerequisites

For this integration, you need the following:

1. An active BACnet MS/TP client device must be present and well-connected to the BACnet MS/TP port of the gateway.
2. The items supplied by HMS Networks:
   - The Intesis IN485DAI001R000 gateway
   - The installation sheet

11.2. Physical Connections Checking

To ensure the gateway is working correctly:

1. Check the connection between the AC unit and the gateway.
2. Make sure the AC unit is connected to the power supply.
3. Check the EIA-485 port connection on the gateway, and verify polarity and termination resistor settings.

11.3. LED Status

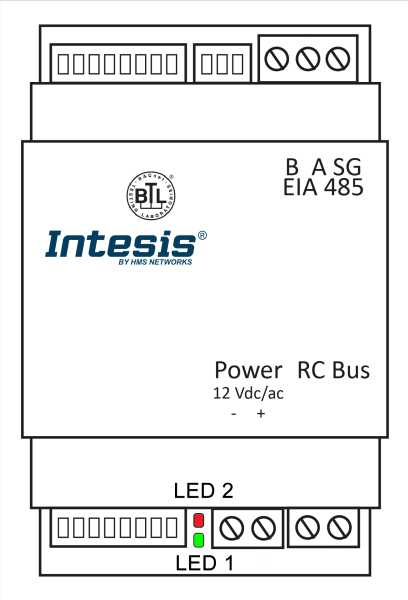


Figure 6. IN485DAI001R000 LEDs

When powering the gateway up, both LED indicators blink once and then turn off. After that, LEDs will behave as described in the table below:

Table 13. LED status table

LED	Status	Description
BACnet		
L1 Green	ON	BACnet MS/TP link performed
	Flickering	Activity on the BACnet MS/TP bus
	OFF	BACnet MS/TP link not performed
AC unit		
L2 Red	ON	AC communication error
	Blinking	AC unit error
	Flashing	AC communication OK

LED PATTERNS

- **ON**: 100% on
- **Flickering**: irregular cycle (90% on - 10% off approx)
- **Blinking**: 50% on - 50% off
- **Flashing**: 10% on - 90% off
- **OFF**: 100% off

12. Restore the Factory Settings

To restore the gateway's factory settings, proceed as follows:

1. Set both SW1 and SW2 DIP switches to the On position.
2. Reset the device:
   a. Power it Off.
   b. Power it On.
3. After the reboot, LEDs will blink with the SOS Morse sequence:
   a. Three short blinks
   b. Three longer blinks
   c. Three short blinks
4. Set both SW1 and SW2 DIP switches to the Off position before 30 seconds pass.

After this procedure, the gateway will already be restored to the factory settings.

To continue working with the gateway, proceed as usual:

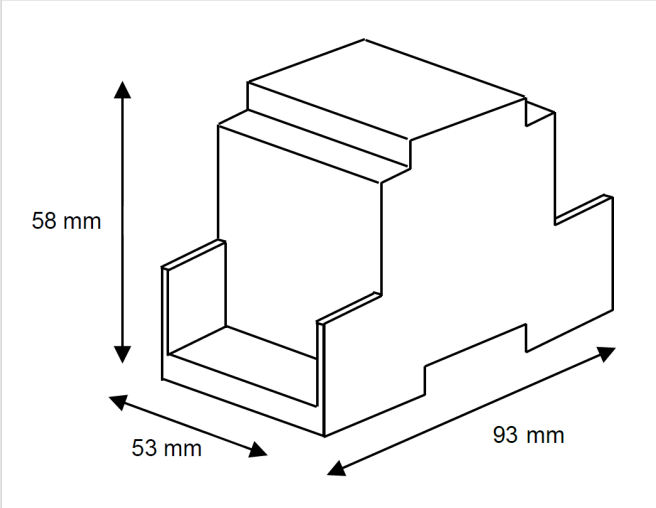
1. Set the DIP switched again depending on the desired configuration.
2. Reset the device:
   a. Power it Off.
   b. Power it On.

13. Hardware Specifications

13.1. Technical Specifications

Enclosure	Plastic, type PC (UL 94 V-0) Net dimensions (DxWxH): 93 x 53 x 58 mm / 3.7 x 2.1 x 2.3” Recommended space for installation (DxWxH): 100 x 60 x 70 mm / 4 x 2.4 x 2.8" Color: Light grey. RAL 7035
Weight	85 g (3 oz)
Terminal wiring for low-voltage signals	Per terminal: solid wires or stranded wires (twisted or with ferrule). Wire cross-section/gauge: One core: 0.2 to 2.5 mm^2 (24 to 11 AWG) Two cores: 0.2 to 1.5mm^2 (24 to 15 AWG) Three cores: Not permitted
External power supply (optional)	SELV-rated NEC class 2 or limited power source (LPS) power supply. 12 VDC/AC; 0.1 A
Mounting	Wall or DIN rail
BACnet MS/TP port	1 x EIA-485 pluggable terminal block (3 poles: B, A, and SG) with 120 Ω resistor termination and polarisation configurable by DIP switch
AC unit port	1 x RC bus pluggable terminal block (2 poles: A, B)
LED indicators	2 x Communication status
DIP switches	SW1: Gateway, AC unit, and baudrate configuration SW2: MAC address and temperature unit SW3: Bus polarization and termination
Operational and storage temperature	Celsius: Op: 0 to +70°C; St: -20 to 85°C Fahrenheit: 32 to 158°F; St: -4 to 185°F
Operational and storage humidity	5% to 95%, non-condensing
Isolation Voltage	1500 VDC
Isolation resistance	1000 MΩ

13.2. Dimensions



14. Error Codes

Table 14. Daikin error codes

Error Code	Error CodeM	Error in Remote Controller	Error Category	Error description
-1	CommError	N/A	Indoor Unit	Communication Error between the AC unit and the gateway
17	A0	A0		External protection devices activated
18	A1	A1		Indoor unit PCB assembly failure
19	A2	A2		Interlock error for fan
20	A3	A3		Drain level system error
21	A4	A4		Temperature of heat exchanger (1) error
22	A5	A5		Temperature of heat exchanger (2) error
23	A6	A6		Fan motor locked, overload, over current
24	A7	A7		Swing flap motor error
25	A8	A8		Overcurrent of AC input
26	A9	A9		Electronic expansion valve drive error
27	AA	AA		Heater overheat
28	AH	AH		Dust collector error / No-maintenance filter error
30	AJ	AJ		Capacity setting error (indoor)
31	AE	AE		Shortage of water supply
32	AF	AF		Malfunctions of a humidifier system (water leaking)
33	C0	C0		Malfunctions in a sensor system
36	C3	C3		Sensor system of drain water error
37	C4	C4		Heat exchanger (1) (Liquid pipe) thermistor system error
38	C5	C5		Heat exchanger (1) (Gas pipe) thermistor system error
39	C6	C6		Sensor system error of fan motor locked, overload
40	C7	C7		Sensor system of swing flag motor error
41	C8	C8		Sensor system of over-current of AC input
42	C9	C9		Suction air thermistor error
43	CA	CA		Discharge air thermistor system error
44	CH	CH		Contamination sensor error
45	CC	CC		Humidity sensor error
46	CJ	CJ		Remote control thermistor error
47	CE	CE		Radiation sensor error
48	CF	CF		High pressure switch sensor
49	E0	E0	Outdoor Unit	Protection devices activated
50	E1	E1		Outdoor unit PCB assembly failure
52	E3	E3		High pressure switch (HPS) activated
53	E4	E4		Low pressure switch (LPS) activated
54	E5	E5		Overload of inverter compressor motor
55	E6	E6		Over current of STD compressor motor
56	E7	E7		Overload of fan motor / Over current of fan motor
57	E8	E8		Over current of AC input
58	E9	E9		Electronic expansion valve drive error
59	EA	EA		Four-way valve error
60	EH	EH		Pump motor over current
61	EC	EC		Water temperature abnormal
62	EJ	EJ		(Site installed) Protection device activated
63	EE	EE		Malfunctions in a drain water

Error Code	Error CodeM	Error in Remote Controller	Error Category	Error description
64	EF	EF		Ice thermal storage unit error
65	H0	H0		Malfunctions in a sensor system
66	H1	H1		Air temperature thermistor error
67	H2	H2		Sensor system of power supply error
68	H3	H3		High Pressure switch is faulty
69	H4	H4		Low pressure switch is faulty
70	H5	H5		Compressor motor overload sensor is abnormal
71	H6	H6		Compressor motor over current sensor is abnormal
72	H7	H7		Overload or over current sensor of fan motor is abnormal
73	H8	H8		Sensor system of over-current of AC input
74	H9	H9		Outdoor air thermistor system error
75	HA	HA		Discharge air thermistor system error
76	HH	HH		Pump motor sensor system of over current is abnormal
77	HC	HC		Water temperature sensor system error
79	HE	HE		Sensor system of drain water is abnormal
80	HF	HF		Ice thermal storage unit error (alarm)
81	F0	F0		No.1 and No.2 common protection device operates.
82	F1	F1		No.1 protection device operates.
83	F2	F2		No.2 protection device operates
84	F3	F3		Discharge pipe temperature is abnormal
87	F6	F6		Temperature of heat exchanger(1) abnormal
91	FA	FA		Discharge pressure abnormal
92	FH	FH		Oil temperature is abnormally high
93	FC	FC		Suction pressure abnormal
95	FE	FE		Oil pressure abnormal
96	FF	FF		Oil level abnormal
97	J0	J0		Sensor system error of refrigerant temperature
98	J1	J1		Pressure sensor error
99	J2	J2		Current sensor error
100	J3	J3		Discharge pipe thermistor system error
101	J4	J4		Low pressure equivalent saturated temperature sensor system error
102	J5	J5		Suction pipe thermistor system error
103	J6	J6		Heat exchanger(1) thermistor system error
104	J7	J7		Heat exchanger(2) thermistor system error
105	J8	J8		Oil equalizer pipe or liquid pipe thermistor system error
106	J9	J9		Double tube heat exchanger outlet or gas pipe thermistor system error
107	JA	JA		Discharge pipe pressure sensor error
108	JH	JH		Oil temperature sensor error
109	JC	JC		Suction pipe pressure sensor error
111	JE	JE		Oil pressure sensor error
112	JF	JF		Oil level sensor error
113	L0	L0		Inverter system error
116	L3	L3		Temperature rise in a switch box
117	L4	L4		Radiation fin (power transistor) temperature is too high
118	L5	L5		Compressor motor grounded or short circuit, inverter PCB fault
119	L6	L6		Compressor motor grounded or short circuit, inverter PCB fault
120	L7	L7		Over current of all inputs
121	L8	L8		Compressor over current, compressor motor wire cut
122	L9	L9		Stall prevention error (start-up error) Compressor locked, etc.

Error Code	Error CodeM	Error in Remote Controller	Error Category	Error description
123	LA	LA		Power transistor error
125	LC	LC		Communication error between inverter and outdoor control unit
129	P0	P0		Shortage of refrigerant (thermal storage unit)
130	P1	P1		Power voltage imbalance, open phase
132	P3	P3		Sensor error of temperature rise in a switch box
133	P4	P4		Radiation fin temperature sensor error
134	P5	P5		DC current sensor system error
135	P6	P6		AC or DC output current sensor system error
136	P7	P7		Total input current sensor error
142	PJ	PJ		Capacity setting error (outdoor)
145	U0	U0		Low pressure drop due to insufficient refrigerant or electronic expansion valve error, etc.
146	U1	U1		Reverse phase, Open phase
147	U2	U2		Power voltage failure / Instantaneous power failure
148	U3	U3		Failure to carry out check operation, transmission error
149	U4	U4		Communication error between indoor unit and outdoor unit,communication error between outdoor unit and BS unit
150	U5	U5		Communication error between remote control and indoor unit / Remote control board failure or setting error for remote control
151	U6	U6		Communication error between indoor units
152	U7	U7		Communication error between outdoor units / Communication error between outdoor unit and ice thermal storage unit
153	U8	U8	System	Communication error between main and sub remote controllers (sub remote control error) / Combination error of other indoor unit / remote control in the same system (model)
154	U9	U9		Communication error between other indoor unit and outdoor unit in the same system / Communication error between other BS unit and indoor/outdoor unit
155	UA	UA		Combination error of indoor/BS/outdoor unit (model, quantity, etc.),setting error of spare parts PCB when replaced
156	UH	UH		Improper connection of transmission wiring between outdoor and outdoor unit outside control adaptor
157	UC	UC		Centralized address duplicated
158	UJ	UJ		Attached equipment transmission error
159	UE	UE		Communication error between indoor unit and centralized control device
160	UF	UF		Failure to carry out check operation Indoor-outdoor, outdoor-outdoor communication error, etc.
209	60	60		All system error
210	61	61		PC board error
211	62	62		Ozone density abnormal
212	63	63		Contamination sensor error
213	64	64		Indoor air thermistor system error
214	65	65		Outdoor air thermistor system error
217	68	68		HVU error (Venti air dust-collecting unit)
219	6A	6A	Others	Dumper system error
220	6H	6H		Door switch error
221	6C	6C		Replace the humidity element
222	6J	6J		Replace the high efficiency filter
223	6E	6E		Replace the deodorization catalyst
224	6F	6F		Simplified remote controller error
226	51	51		Fan motor of supply air over current or overload
227	52	52		Fan motor of return air over current / Fan motor of return air overload

Error Code	Error CodeM	Error in Remote Controller	Error Category	Error description
228	53	53		Inverter system error (supply air side)
229	54	54		Inverter system error (return air side)
241	40	40		Humidifying valve error
242	41	41		Chilled water valve error
243	42	42		Hot water valve error
244	43	43		Heat exchanger of chilled water error
245	44	44		Heat exchanger of hot water error
258	31	31		The humidity sensor of return air sensor
259	32	32		Outdoor air humidity sensor error
260	33	33		Supply air temperature sensor error
261	34	34		Return air temperature sensor error
262	35	35		Outdoor air temperature sensor error
263	36	36		Remote controller temperature sensor error
267	3A	3A		Water leakage sensor 1 error
268	3H	3H		Water leakage sensor 2 error
269	3C	3C		Dew condensation error
339	M2	M2		Centralized remote controller PCB error
345	M8	M8		Communication error between centralized remote control devices
347	MA	MA		Centralized remote control devices inappropriate combination
349	MC	MC		Centralized remote controller address setting error

NOTE

If you detect a non-listed error code, please contact Daikin technical support.