ENGLISH

BACnet MS/TP Server Gateway for Mitsubishi Heavy Industries

COMPATIBLE WITH MITSUBISHI HEAVY INDUSTRIES SKY & VRV AIR CONDITIONER LINES

USER MANUAL
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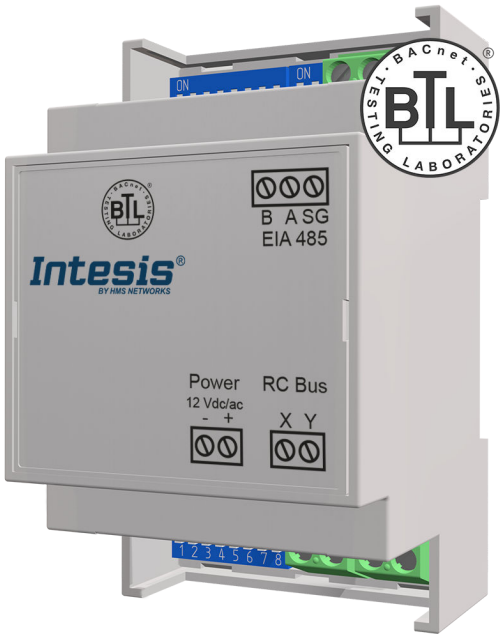

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Table of Contents

1. Description, Compatible AC systems, and Order Codes

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

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

ORDER CODE	LEGACY ORDER CODE
IN485MHI001R000	INBACMHI001R100

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.

Supply always a correct voltage to power the gateway. See Technical Specifications (page 56).

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 Mitsubishi Heavy Industries air conditioning (AC) systems into BACnet installations using the Intesis gateway.

The aim of this integration is to monitor and control your Mitsubishi Heavy Industries 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 Mitsubishi Heavy Industries 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 49).

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

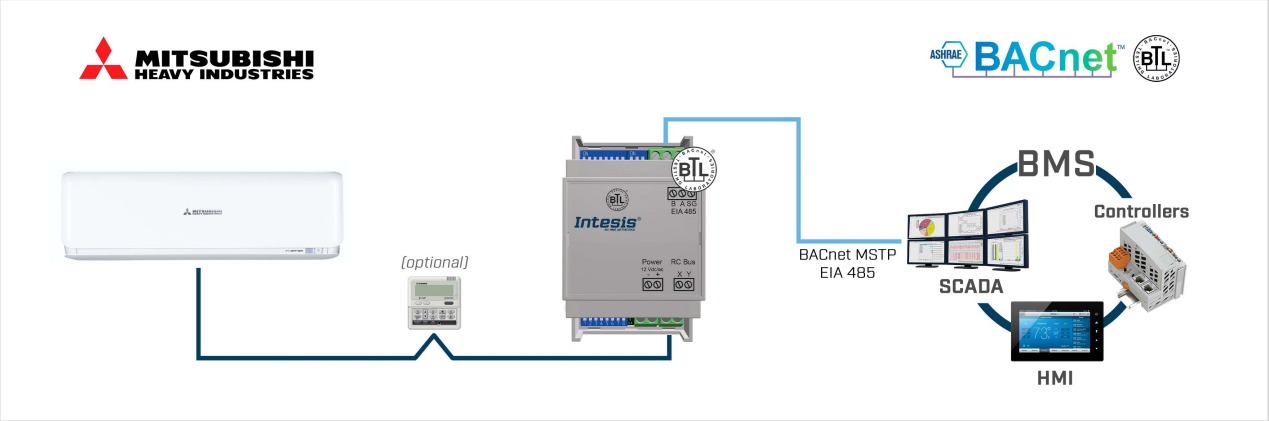


Figure 1. Integration of Mitsubishi Heavy Industries AC units into a BACnet installation using the Intesis IN485MHI001R000 gateway

3.2. General Functionality

The role of the gateway is to link the elements of Mitsubishi Heavy Industries AC units to BACnet objects.

The Intesis gateway continuously reads the Mitsubishi Heavy Industries 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 Mitsubishi Heavy Industries 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 51).
- For more information on the wired RC connection, see Connection Procedure (page 50).

3.3. Gateway Capacity

This Intesis gateway can integrate one single Mitsubishi Heavy Industries AC unit and its associated elements.

Table 1. Gateway capacity

Element	Max
Number of indoor units that the gateway can control	1
Number of AC signals available as objects in the gateway	36

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 (XY). See details in Connection Procedure (page 50).
4. Configure the gateway using the built-in DIP switches. See details in DIP switches (page 51).
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 53).
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:

Mitsubishi Heavy Industries air conditioning system - BACnet MS/TPRTU.

Abstraction of Mitsubishi Heavy Industries 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:

Mitsubishi Heavy Industries 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 OutdoorTemp_status DIP_SW_S1_status DIP_SW_S2_status SerialNumber
Analog-Output	1	☒	Setpoint_command RoomTemperature_command
Analog-Value	2	☒	OnTimeCounter OccupiedCoolSetpoint OccupiedHeatSetpoint UnoccupiedCoolSetpoint UnoccupiedHeatSetpoint
Averaging	18	☐	
Binary-Input	3	☒	OnOff_status ErrorActive FilterSign
Binary-Value	5	☒	OccupacyContinuousCheck UnoccupiedDeadBandAction LockRemoteControl
Calendar	6	☐	
Command	7	☐	
Device	8	☒	IN485MHI001R000
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 CenterRemote
Multistate-Output	14	☒	Mode_command FanSpeed_command AirDirectionUD_command
Multistate-Value	19	☒	Occupancy
Notification-Class	15	☐	
Program	16	☐	
Schedule	17	☐	
Trend-Log	20	☐	

7.2. Member Objects

7.2.1. Type: Gateway

Object name	Description	Object type	Object instance
IN485MHI001R000	Mitsubishi Heavy Industries 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	2
ErrorReset	BO	5
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
LockRemoteControl	BV	2
OutdoorTemp_status	AI	8
CenterRemote	MI	9
DIP_SW_S1_status	AI	9
DIP_SW_S2_status	AI	10
SerialNumber	AI	11

7.3. Objects and Properties

7.3.1. Mitsubishi Heavy Industries AC Gateway (Device Object Type)

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

- **Automatic address (default)**: The device address is generated by combining the base address + the local address configured in the DIP switch block SW2 (P1 to P7). See DIP switches (page 51).

- **Manual address**: The device will switch to manual addressing mode when this property receives a value from the BACnet side.

IMPORTANT
During the manual addressing mode, the address configured with the DIP switch SW2 is not considered.

IMPORTANT
If **Object_Identifier** is overwritten from BACnet, the DIP switch SW2 configuration will not be considered for the device instance calculation until a **Restore factory settings** is performed. See details in Restore Factory Settings.

The **Object_Identifier**, **Object_Name**, and **Description** properties can be edited by writing on their **Value**.

NOTE
The **Description** value permits up to 63 characters.

Property Identifier	Property Datatype	Value	ASHRAE	Intesis
Object_Identifier	BACnetObjectIdentifier	Device, 246000 (default value)	R	W
Object_Name	CharacterString	IN485MHI001R000	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	IN485MHI001R000	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	Mitsubishi Heavy Industries AC interface	O	W
Protocol_Version	Unsigned	1	R	R
Protocol_Revision	Unsigned	12	R	R
Protocol_Services_ Supported	BACnetServiceSupported	Refer to section Service Types (page 10)	R	R
Protocol_Object_Types_ Supported	BACnetObjectTypes Supported	Refer to section Objects and Properties (page 12)	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 BACnet MS/TP 1476 for BACnet/IP	R	R
Segmentation_Supported	BACnetSegmentation	SEGMENTED-BOTH (0)	R	R
Max_Segments_accepted	Unsigned	16	O	R
VT_Classes_Supported	List of BACnetVTClass	-	O	-
Active_VT_Sessions	List of BACnetVTSession	-	O	-
Local_Date	Date	-	O	-
Local_Time	Time	-	O	-
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

Property Identifier	Property Datatype	Value	ASHRAE	Intesis
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	-

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 .. 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 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

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

7.3.6. 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	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	Celsius degrees (62) Fahrenheit degrees (64)	R	R
Min_Pres_Value	REAL	16°C / 61°F	O	R
Max_Pres_Value	REAL	30°C / 86°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 51).

7.3.7. 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	16 .. 30°C / 61 .. 86°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	16°C / 61°F	O	R
Max_Pres_Value	REAL	30°C / 86°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 51).

7.3.8. 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 .. 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/TRUE	R	R
Number_Of_States	Unsigned	5	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	Fan Speed 1
3	Fan Speed 2
4	Fan Speed 3
5	Fan Speed 4

7.3.9. 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 .. 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 **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
5	Fan Speed 4

7.3.10. AirDirectionUD_status (Multistate Input Object Typee

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 .. 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/TRUE	R	R
Number_Of_States	Unsigned	5	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	Swing

7.3.11. AirDirectionUD_command (Multistate Output Object Type)e

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 .. 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 **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	Pos-1
2	Pos-2
3	Pos-3
4	Pos-4
5	Swing

7.3.12. 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 .. 50°C / 14 .. 122°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 / 14°F	O	-
Max_Pres_Value	REAL	50°C / 122°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	-

7.3.13. 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 .. 50°C / 14 .. 122°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 / 14°F	O	-
Max_Pres_Value	REAL	50°C / 122°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 51).

7.3.14. 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 57).

7.3.15. 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 .. 92	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	92	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

Preset_Value	State_Text	Present_Value	State_Text	Present_Value	State_Text
1		32	E30	63	E61
2	CommError	33	E31	64	E62
3	E1	34	E32	65	E63
4	E2	35	E33	66	E64
5	E3	36	E34	67	E65
6	E4	37	E35	68	E66
7	E5	38	E36	69	E67
8	E6	39	E37	70	E68
9	E7	40	E38	71	E69
10	E8	41	E39	72	E70
11	E9	42	E40	73	E71
12	E10	43	E41	74	E72
13	E11	44	E42	75	E73
14	E12	45	E43	76	E74
15	E13	46	E44	77	E75
16	E14	47	E45	78	E76
17	E15	48	E46	79	E77
18	E16	49	E47	80	E78
19	E17	50	E48	81	E79
20	E18	51	E49	82	E80
21	E19	52	E50	83	E81
22	E20	53	E51	84	E82

Preset_Value	State_Text	Present_Value	State_Text	Present_Value	State_Text
23	E21	54	E52	85	E83
24	E22	55	E53	86	E84
25	E23	56	E54	87	E85
26	E24	57	E55	88	E86
27	E25	58	E56	89	E87
28	E26	59	E57	90	E88
29	E27	60	E58	91	E89
30	E28	61	E59	92	E90
31	E29	62	E60		

7.3.16. 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	-

7.3.17. 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	-

7.3.18. ErrorReset (Binary Output Object Type)

It resets the error signal.

Property Identifier	Property Datatype	Value	ASHRAE	Intesis
Object_Identifier	BACnetObjectIdentifier	(Binary Output, 5)	R	R
Object_Name	CharacterString	ErrorReset	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	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	-

7.3.19. 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 51).

7.3.24. 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		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		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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 51).

7.3.25. 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		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	-

NOTE

You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 51).

7.3.26. 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	-

7.3.27. 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	-

7.3.28. 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	-

7.3.29. OutdoorTemp_status (Analog Input Object Type)

It indicates the outdoor temperature from the outdoor unit sensor.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 8)	R	R
Object_Name	CharacterString	OutdoorTemp_status	R	R
Object_Type	BACnetObjectType	ANALOG_INPUT (0)	R	R
Present_Value	REAL	°C / °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
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 51).

7.3.30. CenterRemote (Multistate Input Object Type)

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multi-state Input, 0)	R	R
Object_Name	CharacterString	CenterRemote	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	6	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **CenterRemote 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 10. CenterRemote Table

Present_Value	State_Text
1	Center I
2	Remote I
3	Center / Remote I
4	Center II
5	Remote II
6	Center / Remote II

7.3.31. 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

7.3.32. 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

7.3.33. 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

7.4. 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

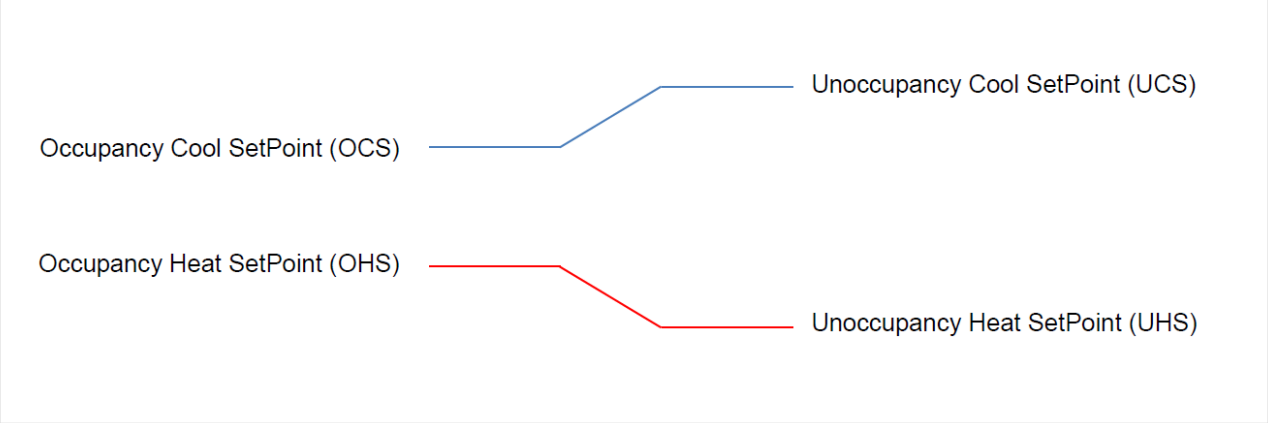


Figure 2. Temperature setpoint settings

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/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 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.

7.5. 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

8. Connections and Switches

8.1. 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.

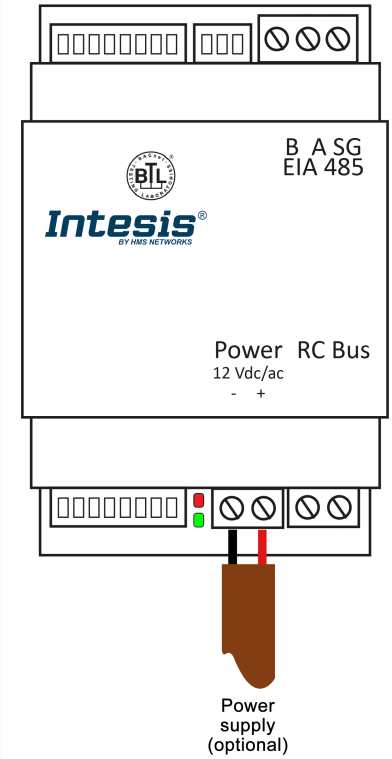


Figure 3. Power connector

IMPORTANT
Respect polarity.

8.2. 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.

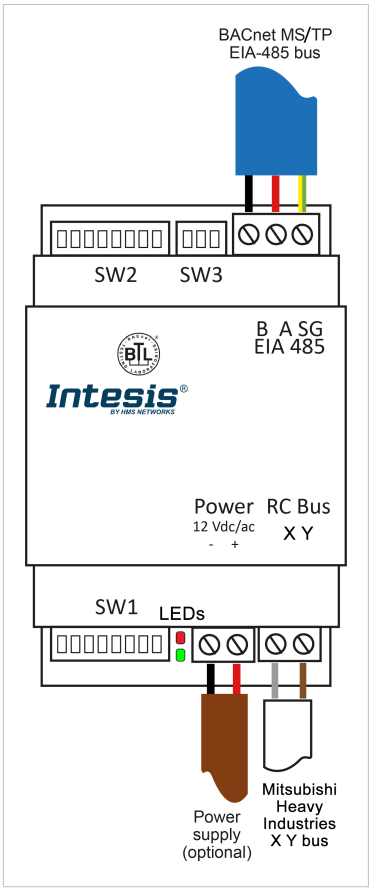


Figure 4. Wiring diagram

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 XY bus.

NOTE
- The XY 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 51).

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.

8.3. DIP switches

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

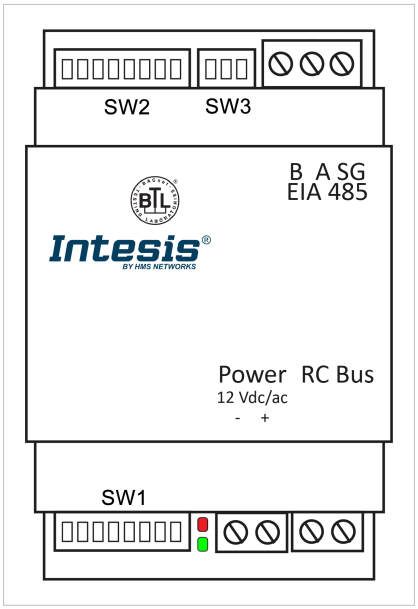


Figure 5. IN485MHI001R000 DIP switches

Table 11. SW1 (P1): Gateway 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 XY bus (default)
1 X X X X X X X	↑	X	X	X	X	X	X	X	Header in XY bus
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 12. 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 13. 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.

9. Setup Process

This is a fully compatible KNX gateway. Use ETS, the standard KNX software, to configure the gateway.

Download the ETS database for this gateway from: https://intesis.com/products/ac-interfaces/mitsubishi-electric-gateways/mitsubishi-electric-knxinputs-ac-me-ac-knx-1i

NOTE
Consult the README.txt file inside the downloaded zip file to find instructions on how to install the database.

9.1. 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 IN485MHI001R000 gateway
   - A specific connection cable to connect the AC unit with the gateway
   - The installation sheet

9.2. 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.

9.3. LED Status

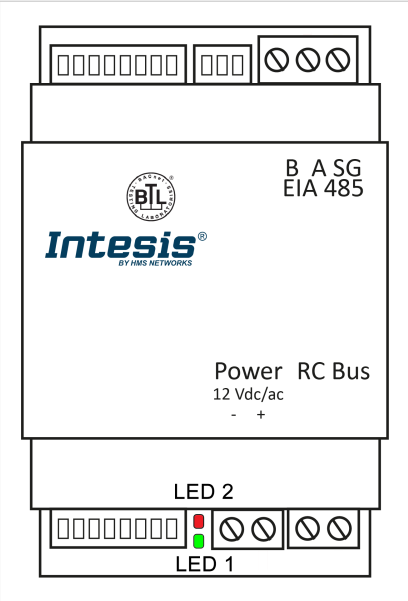


Figure 6. IN485MHI001R000 LEDs

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 14. 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

10. 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:

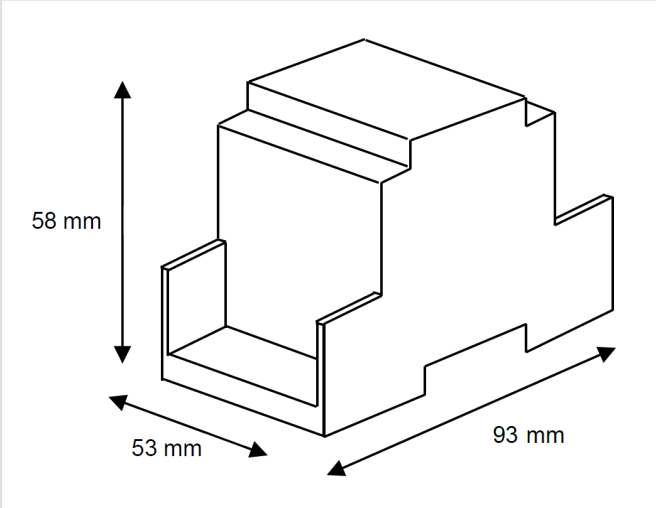
1. Set the DIP switched again depending on the desired configuration.
2. Reset the device:
   a. Power it Off.
   b. Power it On.

11. Hardware Specifications

11.1. 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: 1 core: 0.5 to 2.5 mm^2 (20 to 14 AWG) 2 cores: 0.5 to 1.5mm^2 (20 to 16 AWG) 3 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 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

11.2. Dimensions



12. Error Codes

NOTE
These error codes are the same for all applications.

Error code	Code in the wired RC	Description
0	N/A	No active error
1	E1	Remote controller communication error
2	E2	Duplicated indoor unit address
3	E3	Outdoor unit signal line error
4	E4	Invalid I/U address
5	E5	Communication error during operation
6	E6	Indoor heat exchanger temperature thermistor anomaly
7	E7	Indoor return air temperature thermistor anomaly
8	E8	Heating overload operation
9	E9	Drain trouble
10	E10	Excessive number of indoor units (more than 17) by controlling one remote controller
11	E11	RAS is done when plural R/Cs are connected
12	E12	Address setting error by mixed setting method
13	E13	SAF Malfunction
14	E14	Communication error between master and slave indoor units
15	E15	I/U Supply Air sensor disconnection
16	E16	Indoor fan motor anomaly
17	E17	I/U Fan motor Malfunction
18	E18	Gas sensor Malfunction
19	E19	Indoor unit operation check, drain motor check setting error
20	E20	I/U Fan motor rotation
21	E21	Grille open
28	E28	Remote controller temperature thermistor anomaly
30	E30	Unmatched connection of indoor and outdoor unit
31	E31	Duplicated outdoor unit address No.
32	E32	Open L3 Phase on power supply at primary side
33	E33	Inverter primary current error
34	E34	Missing fase
35	E35	Cooling overload operation
36	E36	Discharge pipe temperature error
37	E37	Outdoor heat exchanger temperature thermistor anomaly
38	E38	Outdoor/Ambient air temperature thermistor anomaly
39	E39	Discharge pipe temperature thermistor anomaly
40	E40	High pressure error
41	E41	Power transistor overheat
42	E42	Current cut
43	E43	Excessive number of indoor units connected, excessive total capacity of connection
44	E44	Abnormal Comp. bottom temp
45	E45	Communication error between inverter PCB and outdoor control PCB
46	E46	Mixed address setting methods coexistent in same network

Error code	Code in the wired RC	Description
47	E47	Inverter overcurrent error
48	E48	Outdoor DC fan motor anomaly
49	E49	Low pressure anomaly
50	E50	Ice storage unit Error
51	E51	Inverter anomaly
52	E52	Water temp sensor disconnection
53	E53	Suction pipe temperature thermistor anomaly
54	E54	High/Low pressure sensor anomaly
55	E55	Underneath temperature thermistor anomaly
56	E56	Power transistor temperature thermistor anomaly
65336	IH2	CAUTION. Bus power supply on critical level. Use an external power supply or check switch configuration
57	E57	Insufficient in refrigerant amount or detection of service valve closure
58	E58	Anomalous compressor by loss of synchronism
59	E59	Compressor startup failure
60	E60	Rotor position detection failure / Anomalous compressor rotor lock
61	E61	Communication error between the master unit and slave units
62	E62	Outdoor unit address error
63	E63	Emergency stop
65535	IH1	Error in the communication of IACCC device with the AC unit
64	E64	Coolant failure
65	E65	System malfunction when PAC I/F is used
66	E66	I/F address duplication
67	E67	V-multi excess number of indoor units
68	E68	Communication error between V-multi and the indoor unit
70	E70	Communication error between CC1 - indoor unit
71	E71	Communication error between NR and the indoor unit
72	E72	Communication error between CC2 and the indoor unit
73	E73	Communication error between CC3 and the indoor unit
74	E74	Address duplication for Network equipment
75	E75	Communication circuit failure in network optional equipment
79	E79	Communication error between the SLQ board and the indoor unit
80	E80	Abnormal engine water temp
81	E81	Abnormal oil pressure of engine
82	E82	Too much revolution of engine
83	E83	Too less revolution of engine
84	E84	Engine startup failure
85	E85	Engine stop failure
86	E86	Oil pressure sensor disconnection
87	E87	Water temperature sensor disconnection
88	E88	Engine oil failure
89	E89	Other engine failure
90	E90	Actuator failure
	M07	I/U overload alarm
	M09	Overcurrent of drain motor

NOTE

If you detect a non-listed error code, please contact Mitsubishi Heavy Industries technical support.