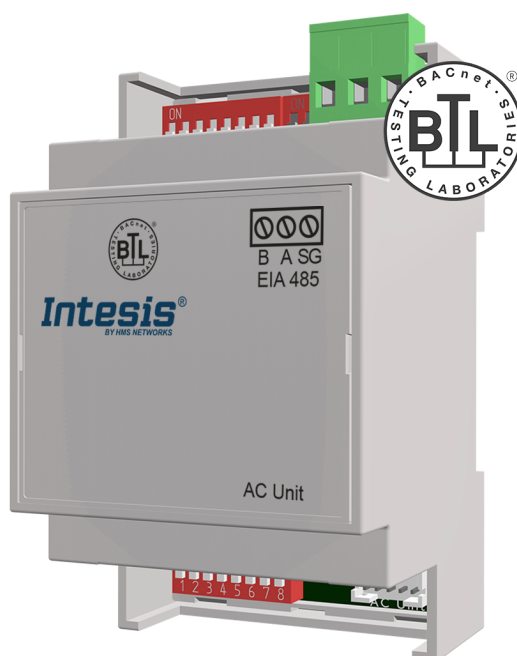


BACnet MS/TP Server Gateway for Mitsubishi Electric COMPATIBLE WITH MITSUBISHI ELECTRIC DOMESTIC, MR. SLIM, AND CITY MULTI AIR CONDITIONERS

USER MANUAL
Version 1.2.3
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1. Description, Compatible AC systems, and Order Codes

BACnet MS/TP Server Gateway for Mitsubishi Electric Air Conditioners.

Compatible with domestic, Mr. Slim, and City Multi air conditioning systems commercialized by Mitsubishi Electric.

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

ORDER CODE	LEGACY ORDER CODE
IN485MIT001I000	INBACMIT001I100

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.

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 Electric air conditioning (AC) systems into BACnet installations using the Intesis IN485MIT001I000 gateway.

The aim of this integration is to monitor and control your Mitsubishi Electric 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 Electric 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 \(page 51\)](#).



NOTE

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

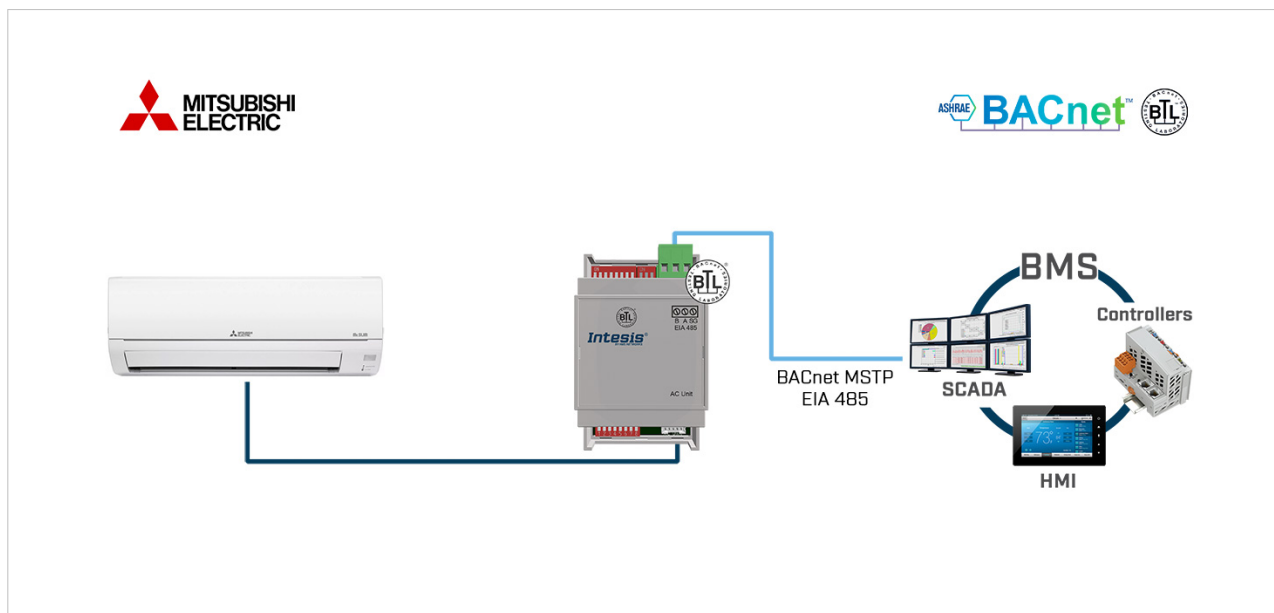


Figure 1. Integration of Mitsubishi Electric AC units into a BACnet installation using the Intesis IN485MIT001I000 gateway

3.2. General Functionality

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

The Intesis gateway continuously reads the Mitsubishi Electric 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 Electric AC system to control indoor units.

3.3. Gateway Capacity

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

Table 1. Gateway capacity

Element	Max
Number of indoor units that the gateway can control	1
Number of Mitsubishi Electric AC signals available as objects in the gateway	32

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 supplied AC connection cable. See details in [Connection Procedure \(page 51\)](#).
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 \(page 54\)](#).
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 Electric air conditioning system - BACnet MS/TPRTU.

Abstraction of Mitsubishi Electric 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 Electric 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. Alarm and Event Management BIBBs

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

5.3. Scheduling BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
SCHED-A	Scheduling-A (<i>must support DS-RP-A and DS-WP-A</i>)	☐			
		☐			
SCHED-I-B	Scheduling-Internal-B (<i>Shall support DS-RP-B and DS-WP-B. Shall also support either DM-TS-B or DS-UTC-B</i>)	☐			
		☐			
SCHED-E-B	Scheduling-External-B (<i>Shall support SCHED-I-B and DS-WP-A</i>)	☐			
		☐			
T-VMT-A	Trending - Viewing and Modifying Trends-A	☐	ReadRange	☐	☒
T-VMT-I-B	Trending - Viewing and Modifying Trends Internal-B	☐	ReadRange	☐	☒
T-VMT-E-B	Trending - Viewing and Modifying Trends External-B	☐	ReadRange	☐	☒
T-ATR-A	Trending - Automated Trend Retrieval-A	☐	ConfirmedEventNotification	☐	☒
		☐	ReadRange	☒	☐
T-ATR-B	Trending - Automated Trend Retrieval-B	☐	ConfirmedEventNotification	☒	☐
		☐	ReadRange	☐	☒

5.4. Trending BIBBs

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

5.5. Network Management BIBBs

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

5.6. Device Management BIBBs

BIBB Type		Active	BACnet Service	Initiate	Execute
DM-DDB-A	Device Management - Dynamic Device Binding-A	☐	Who-Is	☒	☐
		☐	I-Am	☐	☒
DM-DDB-B	Device Management - Dynamic Device Binding-B	☒	Who-Is	☐	☒
		☒	I-Am	☒	☐
DM-DOB-A	Device Management - Dynamic Object Binding-A	☐	Who-Has	☒	☐
		☐	I-Have	☐	☒
DM-DOB-B	Device Management - Dynamic Object Binding-B	☒	Who-Has	☐	☒
		☒	I-Have	☒	☐
DM-DCC-A	Device Management - DeviceCommunicationControl-A	☐	DeviceCommunicationControl	☒	☐
DM-DCC-B	Device Management - DeviceCommunicationControl-B	☒	DeviceCommunicationControl	☐	☒
DM-PT-A	Device Management - 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 Room Temperature_status ErrorCode DIP_SW_S1_status DIP_SW_S2_status SerialNumber UserSetPoint_status
Analog-Output	1	☒	Setpoint_command RoomTemperature_command
Analog-Value	2	☒	OnTimeCounter OccupiedCoolSetpoint OccupiedHeatSetpoint UnoccupiedCoolSetpoint UnoccupiedHeatSetpoint
Averaging	18	☐	
Binary-Input	3	☒	OnOff_status ErrorActive VirtualTempActive
Binary-Output	4	☒	OnOff_command
Binary-Value	5	☒	OccupancyContinuousCheck UnoccupiedDeadBandAction LockRemoteControl
Calendar	6	☐	
Command	7	☐	
Device	8	☒	IN485MIT001I000
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 AirDirectionLR_status ErrorCodeM
Multistate-Output	14	☒	Mode_command FanSpeed_command AirDirectionUD_command AirDirectionLR_command
Multistate-Value	19	☒	Occupancy
Notification-Class	15	☐	
Program	16	☐	
Schedule	17	☐	

Object type	ID	Supported	Management point
Trend-Log	20	☐	

7.2. Member Objects

7.2.1. Type: Gateway

Object name	Description	Object type	Object instance
IN485MIT001I000	Mitsubishi Electric AC 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
AirDirectionLR_status	MI	3
AirDirectionLR_command	MO	3
RoomTemperature_status	AI	1
RoomTemperature_command	AO	1
ErrorCode	AI	2
ErrorCodeM	MI	4
ErrorActive	BI	1
OnTimeCounter	AV	0
Occupancy	MV	0
OccupiedCoolSetpoint	AV	1
OccupiedHeatSetpoint	AV	2
UnoccupiedCoolSetpoint	AV	3
UnoccupiedHeatSetpoint	AV	4
OccupancyContinuousCheck	BV	0
UnoccupiedDeadBandAction	BV	1
LockRemoteControl	BV	2
UserSetPoint_status	AI	17
VirtualTempActive	BI	14
OutdoorTemp_status	AI	8
DIP_SW_S1_status	AI	9
DIP_SW_S2_status	AI	10
SerialNumber	AI	11

7.3. Objects and Properties

7.3.1. Mitsubishi Electric 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 \(page 56\)](#).

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	IN485MIT001I000	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	IN485MIT001I000	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 Electric AC interface	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 13)	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	-
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	-

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Time_Synchronization_Recipients	List of BACnetRecipient	-	O	-
Max_Master	Unsigned	32	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 .. 5	R	R
Description	CharacterString	-	O	-
Device_Type	CharacterString	-	O	-
Status_Flags	BACnetStatusFlags	{FALSE, FALSE/TRUE, FALSE, FALSE}	R	R
Event_State	BACnetEventState	STATE_NORMAL (0)	R	R
Reliability	BACnetReliability	NO_FAULT_DETECTED (0), UNRELIABLE_OTHER(7)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Number_Of_States	Unsigned	5	R	R
State_Text	BACnetArray[N] of CharacterString	Check 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

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. UserSetPoint_status (Analog Input Object Type)

It indicates the current BACnet setpoint temperature when the virtual temperature object is active. See [VirtualTemperatureActive \(Binary Input Object Type\) \(page 36\)](#).

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) Fahrenheit 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	18 .. 30°C / 64 .. 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	18°C / 64°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 \(page 51\)](#).

7.3.8. 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	18 .. 30°C / 64 .. 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	18°C / 64°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 \(page 51\)](#).

7.3.9. 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 .. 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/TRUE	R	R
Number_Of_States	Unsigned	6	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
6	Fan Speed 5

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 .. 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 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
6	Fan Speed 5

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	Auto
2	Up
3	Mid-1
4	Mid-2
5	Mid-3
6	Down
7	Swing

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 .. 7	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	7	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	Auto
2	Up
3	Mid-1
4	Mid-2
5	Mid-3
6	Down
7	Swing

7.3.13. AirDirectionLR_status (Multistate Input Object Type)

It indicates the current indoor unit's horizontal air direction (left-right) status.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multi-state Input, 3)	R	R
Object_Name	CharacterString	AirDirectionLR_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 8. Air direction left-right status

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

7.3.14. AirDirectionLR_command (Multistate Output Object Type)

It allows control over the vertical air direction (left-right) for the indoor unit

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multi-state Output, 3)	R	R
Object_Name	CharacterString	AirDirectionLR_command	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 .. 6	W	W
Description	CharacterString	-	O	-
Device_Type	CharacterString	-	O	-
Status_Flags	BACnetStatusFlags	{FALSE, FALSE, FALSE, FALSE}	R	R
Event_State	BACnetEventState	STATE_NORMAL (0)	R	R
Reliability	BACnetReliability	NO_FAULT_DETECTED (0)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Number_Of_States	Unsigned	6	R	R
State_Text	BACnetArray[N] of CharacterString	Check the Air direction command setting 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 9. Air direction left-right status

Present_Value	Content displayed in State_Text
1	Position 1
2	Position 2
3	Position 3
4	Position 4
5	Position 5
6	Swing

7.3.15. 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	-

7.3.16. 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 \(page 51\)](#).

7.3.17. 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 .. 6846	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	6846	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](#).

7.3.18. 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 .. 48	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	48	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 10. Error Codes

Pesent_Value	State_Text	Pesent_Value	State_Text	Present_Value	State_Text
1	-	17	4101	33	5202
2	CommError	18	4102	34	5300
3	1102	19	4103	35	6600
4	1108	20	4108	36	6602
5	1110	21	4118	37	6603
6	1300	22	4124	38	6606
7	1302	23	4210	39	6607
8	1503	24	4220	40	6608
9	1504	25	4230	41	6831
10	1509	26	5101	42	6832
11	1520	27	5102	43	6840
12	2500	28	5104	44	6841
13	2502	29	5105	45	6844
14	2503	30	5106	46	6845
15	4030	31	5107	47	6846
16	4100	32	5110	48	UNKNOWN

7.3.19. 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	-

7.3.20. 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	-

7.3.21. 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 \(page 49\)](#).

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	-

7.3.22. 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 11. 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. 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 \(page 51\)](#).

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 \(page 51\)](#).

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 \(page 51\)](#).

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. 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	-

7.3.30. 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

7.3.31. 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

7.3.32. SerialNumber (Analog Input Object Type)

It indicates the gateway's serial number: **000EXXXXX**

- 000E is a constant value and it's not included in the Present_Value property.
- XXXXX is a unique value for each gateway. This is the information the Present_Value provides.

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	REAL	00000 .. 99999	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
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

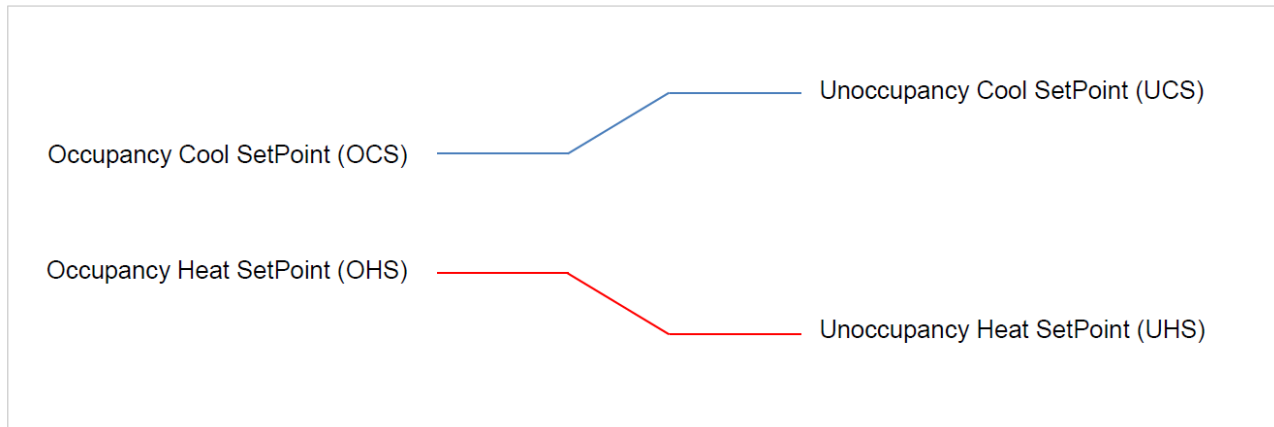


Figure 2. Temperature setpoint settings



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 Continuous 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

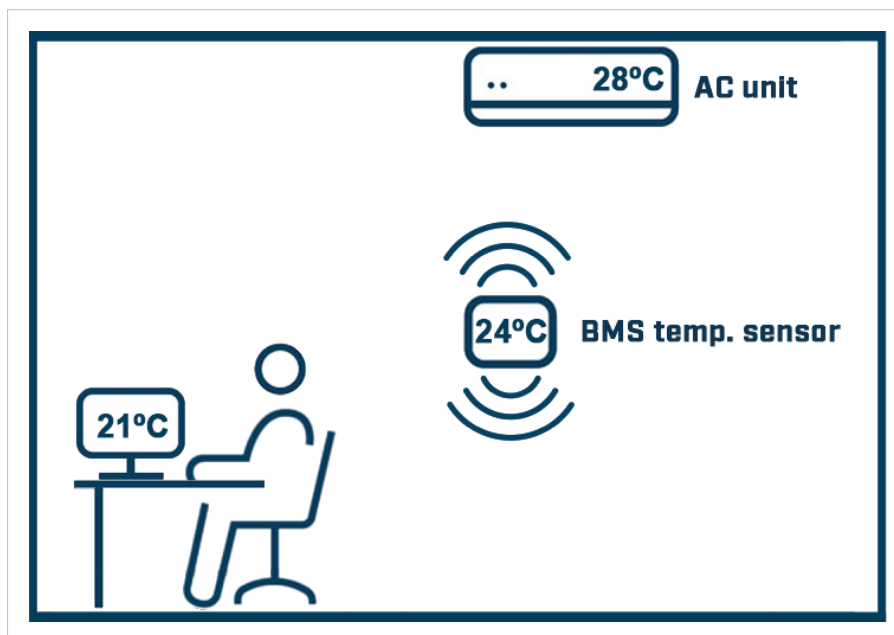
Air conditioners are usually installed higher than the control system temperature sensors (and higher than the room occupants too). This creates a difference between the real temperature at which the AC unit operates and the temperature perceived by the sensor and the people in the room.

Example

Imagine a room where:

- The AC unit operates at 28°C.
- The control system sensor perceives a temperature of 24°C.

The user decides to lower the temperature and sets it at 21°C.



Without the virtual temperature function, the AC unit lowers the temperature by 7°C to match the 21°C the user desires (28-7), but what the user actually gets is 17°C (24-7).

The virtual temperature function applies a formula to make the AC unit operate at the appropriate temperature:

User setpoint - (Control system temperature sensor - AC unit temperature) = Real setpoint

So, applying the virtual temperature formula, we have:

$21 - (24 - 28) = \text{Real setpoint}$

$21 - (-4) = \text{Real setpoint}$

$25 = \text{Real setpoint}$

Activating the virtual temperature function, the AC unit does not lower the temperature by 7°C, but only 3°C. This way, it operates at 25°C, and both the sensor and the user perceive the desired temperature of 21°C.



IMPORTANT

Once the virtual temperature is active, it's no longer possible to write the setpoint temperature from the HVAC side, neither through the remote controller, the AC unit, or any other device.



NOTICE

The virtual temperature function is very useful in some situations, but not desirable in others.

You may use it when:

- The temperature the AC unit provides differs from the temperature perceived in the room.
- There are no temperature sensors in the room.
- Although actually there are, it is not possible to configure the temperature they measure as the AC unit reference temperature.

8. Connections and Switches

8.1. 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.

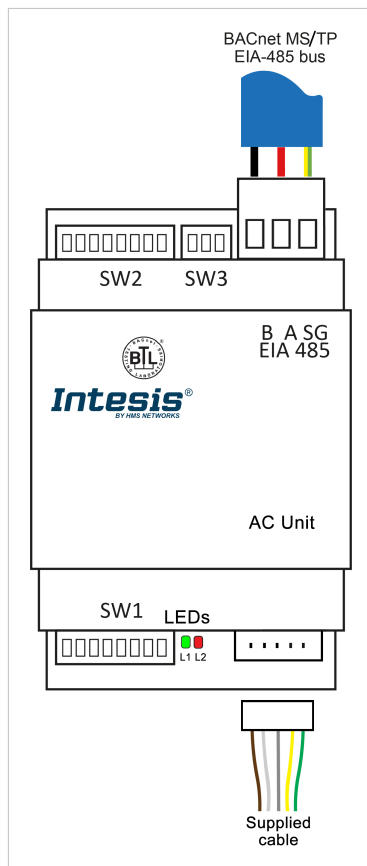


Figure 3. Wiring diagram (wire colors are indicative only. The AC unit cable may have four or five poles)

Connection to the AC indoor unit

1. Mount the gateway in the desired place.
2. Use the supplied cable to connect the AC unit and the gateway:



IMPORTANT

This cable is 1.20 m (3.9 feet) long. Its modification in length may affect the correct operation of the gateway.

- a. **AC unit connection:** Plug the largest unsheathed cable part connector into the socket CN105 (CN92 in some units) of the AC unit control board.
- b. **Gateway connection:** Plug the other end connector, the one on the shortest unsheathed part of the cable, into the socket labeled as **AC Unit**.

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.

8.2. DIP switches

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

Table 12. SW1 (P6 to P8): BACnet MS/TP baudrate

Binary value b0 .. b7	Switches								Description
	1	2	3	4	5	6	7	8	
XXXXX000	X	X	X	X	X	↓	↓	↓	Autobaudrate (default value)
XXXXX100	X	X	X	X	X	↑	↓	↓	9600 bps
XXXXX010	X	X	X	X	X	↓	↑	↓	19200 bps

Binary value	Switches								Description
b0 .. b7	1	2	3	4	5	6	7	8	
XXXXX110	X	X	X	X	X	↑	↑	↓	38400 bps
XXXXX001	X	X	X	X	X	↓	↓	↑	57600 bps
XXXXX101	X	X	X	X	X	↑	↓	↑	76800 bps
XXXXX011	X	X	X	X	X	↓	↑	↑	115200 bps
XXXXX111	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 13. 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		
0000000X	↓	↓	↓	↓	↓	↓	↓	X	0	-
1000000X	↑	↓	↓	↓	↓	↓	↓	X	1	-
0100000X	↓	↑	↓	↓	↓	↓	↓	X	2	-
1100000X	↑	↑	↓	↓	↓	↓	↓	X	3	-
...	...							...	...	-
1011111X	↑	↓	↑	↑	↑	↑	↑	X	125	-
0111111X	↓	↑	↑	↑	↑	↑	↑	X	126	-
1111111X	↑	↑	↑	↑	↑	↑	↑	X	127	-
XXXXXXXX0	X	X	X	X	X	X	X	↓	-	Temperature values in BACnet are represented in Celsius degrees (default value)
XXXXXXXX1	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 14. SW3 (P1 to P3): BACnet polarization and termination resistor

Binary value	Switches			Description
b0 .. b2	1	2	3	
0XX	↓	X	X	EIA-485 bus without termination resistor. The gateway is not at one end of the EIA-485 bus (default value)
1XX	↑	X	X	120 Ω termination resistor active. The gateway is at one end of the EIA-485 bus
X00	X	↓	↓	No bus polarization (default value)
X11	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 IN485MIT001I000 gateway
 - The supplied cable to connect the gateway and the AC indoor unit
 - 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

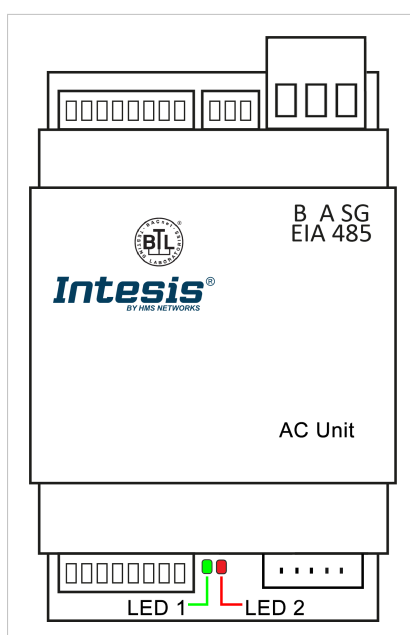


Figure 4. IN485MIT001I000 LEDs

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 15. 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:

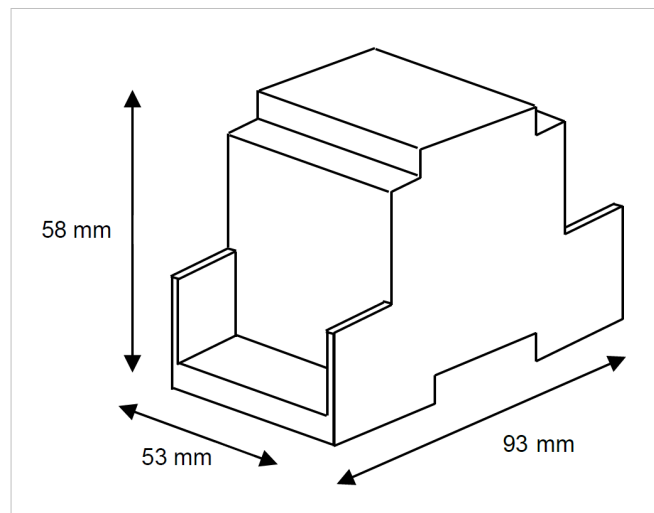
1. Set the DIP switched again depending on the desired configuration.
2. Reset the device:
 - a. Power it Off.
 - b. Power it On.

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
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 Specific socket
LED indicators	2 x Communication status
DIP switches	SW1: 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

Error Code	Error CodeM	Error in RC	Description
-1	CommError	-	AC unit is offline
0	0	-	No error
1102	1102	1102	Discharge Temperature high
1108	1108	1108	Internal thermostat detector working (49C)
1110	1110	1110	Outdoor unit fail
1300	1300	1300	Pressure low
1302	1302	1302	Pressure high (High pressure probe working 63H)
1503	1503	1503	Protection against freeze or battery high temperature
1504	1504	1504	Protection against freeze or battery high temperature
1504	1504	1504	Overheating protection
1509	1509	1509	High pressure error (ball valve closed)
1520	1520	1520	Super heating anomaly due to low temp. of discharge. (TH4)
2500	2500	2500	Erroneous operation of drain pump
2502	2502	2502	Erroneous operation of drain pump
2503	2503	2503	Drain sensor anomaly (DS)
4030	4030	4030	Serial transmission error
4100	4100	4100	Compressor pause due to excess of current (initial block)
4101	4101	4101	Compressor pause due to excess of current (overload)
4102	4102	4102	Phase detection opened
4103	4103	4103	Antiphase detection
4108	4108	4108	Phase opened in phase L2 or connector 51CM opened
4118	4118	4118	Error in the antiphase detector (electronic board)
4124	4124	4124	Connector 49L opened
4210	4210	4210	Cut due to overcurrent of compressor
4220	4220	4220	Voltage anomaly
4230	4230	4230	Radiator panel temperature anomaly (TH8)
5101	5101	5101	Ambient temperature probe anomaly (TH1), indoor unit
5102	5102	5102	Liquid probe anomaly (TH2)
5102	5102	5102	Cond/Evap probe anomaly (TH5)
5104	5104	5104	Error detection in discharge temperature
5105	5105	5105	Outdoor probe error TH3
5106	5106	5106	Outdoor probe error TH7
5107	5107	5107	Outdoor probe error TH6
5110	5110	5110	Outdoor probe error TH8
5202	5202	5202	Connector 63L opened
5300	5300	5300	Current probe error
6600	6600	6600	MNET duplicated address definition

Error Code	Error CodeM	Error in RC	Description
6602	6602	6602	MNET Line transmission hardware error
6603	6603	6603	MNET BUS busy
6606	6606	6606	MNET Line transmission error
6607	6607	6607	MNET transmission error
6607	6607	6607	MNET without ack
6608	6608	6608	MNET transmission error
6608	6608	6608	MNET without response
6831	6831	6831	AC's remote command transmission error (reception error)
6832	6832	6832	AC's remote command transmission error (transmission error)
6840	6840	6840	Transmission error with the indoor/outdoor unit (reception error)
6841	6841	6841	Transmission error with the indoor/outdoor unit (transmission error)
6844	6844	6844	Error in interconnection cable in the indoor/outdoor unit, indoor unit number deactivated (5 min or more)
6845	6845	6845	Error in interconnection cable in the indoor/outdoor unit (cabling error, disconnection)
6846	6846	6846	Initial timer deactivated

**NOTE**

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