ENGLISH

IN485FGL001I000 GATEWAY

Fujitsu Residential and VRF Systems to BACnet MS/TP and Modbus RTU

USER MANUAL
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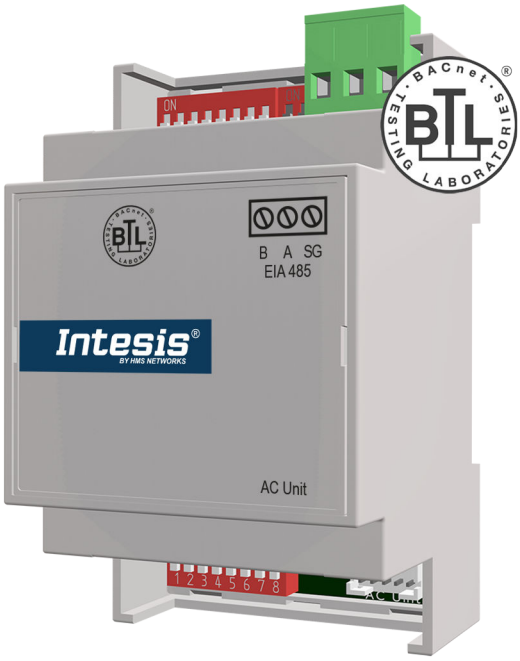

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1. Description, Compatible AC systems, and Order Codes

BACnet MS/TP and Modbus RTU gateway for Fujitsu air conditioners.

Compatible with residential and VRF air conditioning systems commercialized by Fujitsu.

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

ORDER CODE	LEGACY ORDER CODE
IN485FGL001I000	INMBSFGL001I000 INBACFGL001I100

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.

Any person who installs, configures, or operates this gateway or any associated equipment should be aware of this manual's contents.

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.

Preferably, mount this gateway on a DIN rail inside a grounded metallic cabinet, following the instructions in this manual.

If mounting on a wall, firmly fix this gateway on a non-vibrating surface, following the instructions in this manual.

Connect this gateway only to networks without routing to the outside plant.

All communication ports are considered for indoor use and must only be connected to SELV circuits.

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

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

This Intesis gateway is designed for installation in an enclosure. When the device is mounted outside an enclosure, precautions should be taken to avoid electrostatic discharges to the unit in environments with static levels above 4 kV. When working in an enclosure (e.g., making adjustments, setting switches, etc.), typical anti-static precautions should be observed before touching the unit.

Safety instructions in other languages can be found here.

2.3. Admonition Messages and Symbols

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. Quickstart Guide for the IN485FGL001I000 Gateway

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

1. Mount the gateway in the desired installation site. This gateway can be mounted over a DIN rail or a wall. See details in Mounting (page 7).

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

2. Connect the gateway to the BACnet/Modbus network via its **EIA-485** port.
3. Connect the gateway to the indoor unit using the supplied AC connection cable. See details in Connection Procedure (page 8).
4. Configure the gateway using the built-in DIP switches. See details in DIP switches (page 10).

   NOTE
   Use the SW1-5 (DIP switch 1, position 5) to set the gateway as a BACnet or Modbus server device:

   - BACnet MS/TP: Position 5 is off (down). This is the default setting.
   - Modbus RTU: Position 5 is on (up).

5. Check the communication performance between the BACnet/Modbus bus and the AC system through the gateway's LED indicators. See details in LED Indicators (page 12).
6. The Intesis gateway is ready to be used in your system.

4. Overview

NOTE
You can set the IN485FGL001I000 as a BACnet MS/TP or a Modbus RTU server gateway using the SW1-5 (DIP switch 1, position 5). See DIP switches (page 10).

Figure 1. Integration of Fujitsu AC units into a BACnet MS/TP installation using the Intesis IN485FGL001I000 gateway.

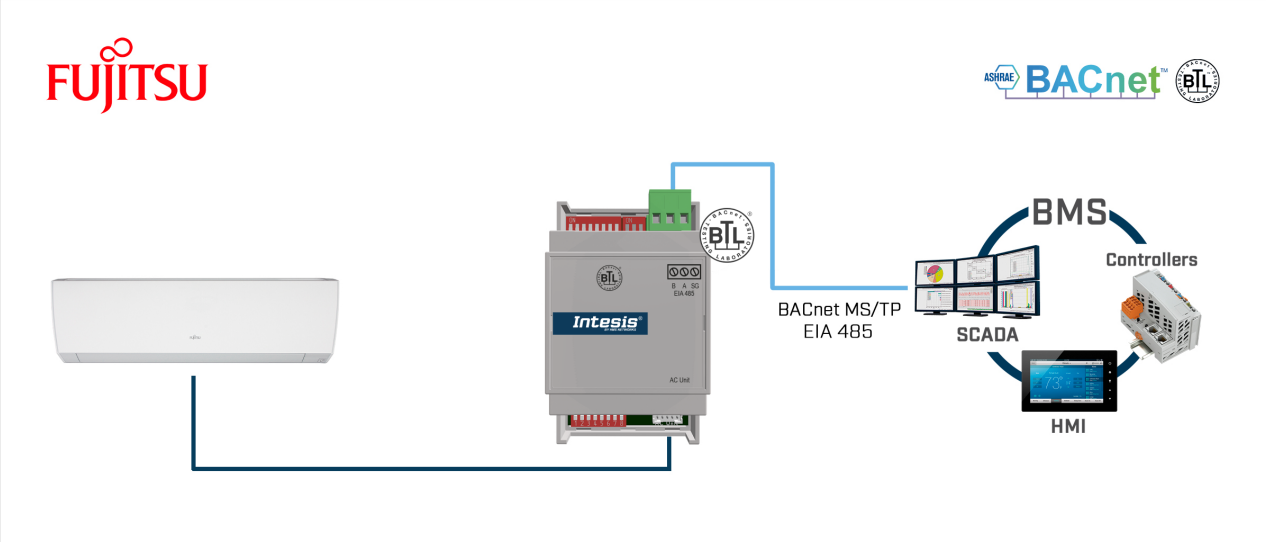
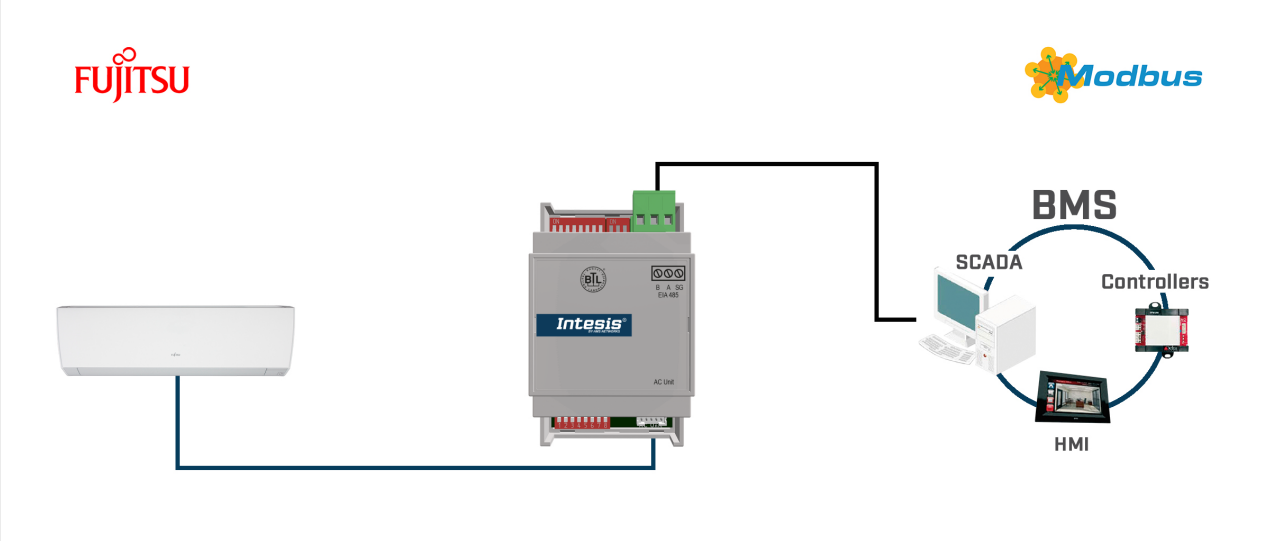


Figure 2. Integration of Fujitsu AC units into a Modbus RTU installation using the Intesis IN485FGL001I000 gateway.



NOTE
This document assumes the user is familiar with BACnet, Modbus, and Fujitsu technologies, including their associated technical terminology.

4.1. Inside the Package

Items included:

- Intesis IN485FGL001I000 gateway
- Installation Guide
- AC unit connection cable

4.2. Main Features

- BTL mark ensures full interoperability with BACnet devices.
- Supports BACnet MS/TP and Modbus RTU.
- Configuration with onboard DIP switches.
- Quick and easy installation: Set the DIP switches, plug, and play.
- External power supply not required.
- Simultaneous control of the AC unit via both the remote controller and the BMS (BACnet MS/TP or Modbus RTU).
- Reduced dimensions (HxWxD): 93 x 53 x 58 mm / 3.7 x 2.1 x 2.3”.
- Mountable on DIN rail, wall, or even inside the indoor unit in some models of AC.
- Significant reduction of the HVAC system energy consumption.
- Three-year warranty.

4.3. Gateway Capacity

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

4.4. General Functionality

With this Intesis IN485FGL001I000 gateway, you can easily integrate Fujitsu RAC and VRF air conditioning systems into a system based on BACnet MS/TP or Modbus RTU. To do so, the gateway acts as a server device of the installation itself, accessing all signals from the AC indoor unit.

The gateway is continuously polling the AC unit, storing in its memory the current status of every signal you want to track and serving this data to the control system when requested. The gateway also sends the requested commands to the indoor unit.

5. Hardware

5.1. Mounting

Mount the gateway over a wall or over a DIN rail.

IMPORTANT
Leave enough clear space to wire the gateway easily and for the subsequent manipulation of elements such as connectors, DIP switches, etc.

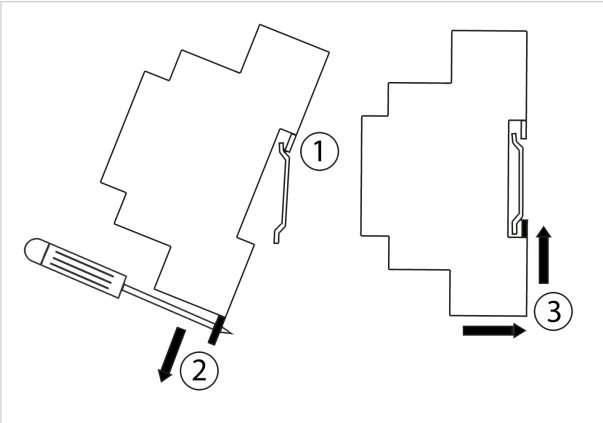
IMPORTANT
Do not mount the gateway in air-handling units or conducts.

NOTE
DIN rail mounting inside a grounded metallic cabinet is recommended.

DIN rail mounting

Keep the clips in their original position.

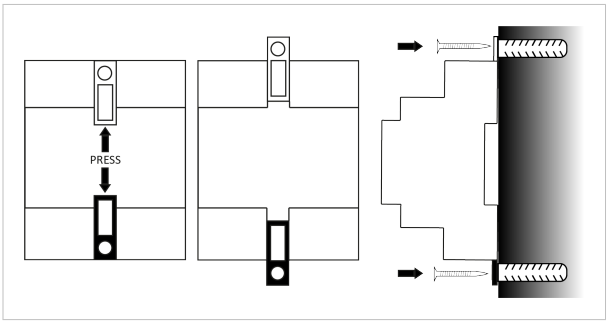
1. Fit the gateway's top-side clip in the upper edge of the DIN rail.
2. Press the low side of the gateway gently to lock it in the DIN rail.
3. Make sure the gateway is firmly fixed.



NOTE
For some DIN rails, to complete step 2, you may need a small screwdriver or similar to pull the bottom clip down.

Wall mounting

1. Press the rear panel clips outwards until you hear a *click*.
2. Use the clip holes to screw the gateway to the wall.
3. Make sure the gateway is firmly fixed.



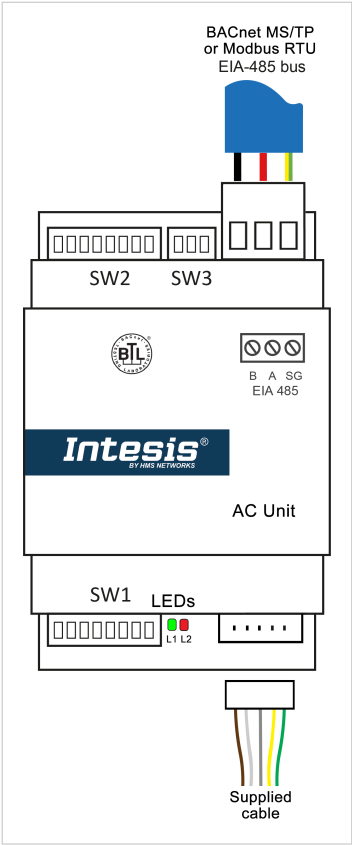
5.2. Connection Procedure

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

IMPORTANT
Keep communication cables as far away as possible from power and ground cables. Never bundle them together.

NOTE
Mount the gateway in the desired place before wiring it.

Figure 3. Wiring diagram



Connecting the gateway to the AC indoor unit

1. Use the supplied cable to connect the AC indoor unit and the gateway:

   IMPORTANT
   This cable is 1.50 m (4.9 feet) long. Its modification in length may affect the correct operation of the gateway.

   a. **AC indoor unit connection:** Plug the end connector, the one on the longest unsheathed part of the cable, into the socket CN75, CN65, CN12, or CN6 of the AC indoor unit control board.

   b. **Gateway connection:** Plug the other end connector, the one on the shortest unsheathed part of the cable, into the gateway's socket labeled as **AC Unit**.

Connecting the gateway to the BACnet MS/TP or Modbus RTU bus

2. Connect the BACnet MS/TP or Modbus RTU bus to the EIA-485 port of the gateway.

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

IMPORTANT

- EIA-485 bus doesn't allow loop or star topologies.
- Maximum length for the EIA-485 bus is 1200 meters (4000 feet).

EIA-485 BUS TERMINATION AND FAIL-SAFE BIASING
The EIA-485 bus requires a 120 Ω termination resistor at each end to avoid signal reflections.

When all transmitters are in high impedance (three-state), a fail-safe biasing mechanism is needed to maintain a valid voltage level and avoid false fail status detections.

The IN485FGL001I000 gateway includes an on-board termination resistor of 120 Ω that can be connected to the EIA-485 bus by using DIP switch SW3.

- **SW3, Position 1:**
  ON: 120 Ω termination active.
  OFF: 120 Ω termination inactive (default position).

Some BACnet MS/TP / Modbus RTU EIA-485 Master devices may also include internal termination and/or fail-safe biasing. Always check the Master device’s documentation.

If the gateway is installed at one end of the bus and termination is enabled, do not add another resistor at that end.

To know more, refer to the document Polarity Issues in RS485 Networks.

3. Reconnect all systems to power.

5.3. DIP switches

The gateway includes three built-in DIP switches: SW1 (8 positions) at the bottom side; SW2 (8 positions) and SW3 (3 positions) at the top side.

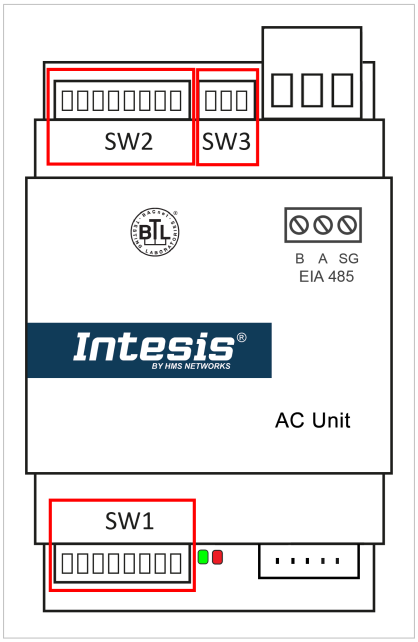


Table 1. ***DIP switch SW1:*** *(P1, P4): AC unit configuration; (P5): Gateway configuration; (P6 to P8): BACnet MS/TP or Modbus RTU baudrate*

Position								Description	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**BACnet**	**Modbus**
OFF	OFF	X	X	X	X	X	X	-	3 Fan speeds
ON	OFF	X	X	X	X	X	X	-	4 Fan speeds (default)
OFF	ON	X	X	X	X	X	X	-	5 Fan speeds
ON	ON	X	X	X	X	X	X	-	6 Fan speeds
X	X	X	X	OFF	X	X	X	Gateway set for BACnet MS/TP (default)	
X	X	X	X	ON	X	X	X	Gateway set for Modbus RTU	
X	X	X	X	X	OFF	OFF	OFF	Autobaudrate (default)	2400
X	X	X	X	X	ON	OFF	OFF	9600 bps	4800
X	X	X	X	X	OFF	ON	OFF	19200 bps	9600 bps
X	X	X	X	X	ON	ON	OFF	38400 bps	19200 bps
X	X	X	X	X	OFF	OFF	ON	57600 bps	38400 bps
X	X	X	X	X	ON	OFF	ON	76800 bps	57600 bps
X	X	X	X	X	OFF	ON	ON	115200 bps	76800 bps
X	X	X	X	X	ON	ON	ON	Autobaudrate	115200 bps

BACNET MS/TP ONLY:
When **Autobaudrate** is selected, the gateway scans the network to find other BACnet MS/TP devices and match their baud rate. Once detected, the baud rate will only be modified after a reset/reboot of the gateway.

Table 2. ***Dip switch SW2 when the gateway is set for BACnet MS/TP:*** *(P1 to P7): BACnet MS/TP MAC address; (P8): Temperature unit (°C/°F)*

Position								BACnet address	Description
1	2	3	4	5	6	7	8		
OFF	OFF	OFF	OFF	OFF	OFF	OFF	X	0	-
ON	OFF	OFF	OFF	OFF	OFF	OFF	X	1	-
OFF	ON	OFF	OFF	OFF	OFF	OFF	X	2	-
ON	ON	OFF	OFF	OFF	OFF	OFF	X	3	-
								...	-
ON	OFF	ON	ON	ON	ON	ON	X	125	-
OFF	ON	ON	ON	ON	ON	ON	X	126	-
ON	ON	ON	ON	ON	ON	ON	X	127	-
X	X	X	X	X	X	X	OFF	-	Temperature in Celsius (default)
X	X	X	X	X	X	X	ON	-	Temperature in Fahrenheit

Table 3. ***Dip switch SW2 when the gateway is set for Modbus RTU:*** *(P1 to P6): Modbus server address; (P7): Degree decimals setting (P8): Temperature unit (°C/°F)*

Position								Modbus address	Description
1	2	3	4	5	6	7	8		
ON	OFF	OFF	OFF	OFF	OFF	X	X	1	-
OFF	ON	OFF	OFF	OFF	OFF	X	X	2	-
ON	ON	OFF	OFF	OFF	OFF	X	X	3	-
								...	-
ON	OFF	ON	ON	ON	ON	X	X	61	-
OFF	ON	ON	ON	ON	ON	X	X	62	-
ON	ON	ON	ON	ON	ON	X	X	63	-
X	X	X	X	X	X	OFF	X	-	Temperature values in Modbus register are represented in degrees x1 (default)
X	X	X	X	X	X	ON	X	-	Temperature values in Modbus register are represented in degrees x10. Example: 19.2°=192
X	X	X	X	X	X	X	OFF	-	Temperature in Celsius (default)
X	X	X	X	X	X	X	ON	-	Temperature in Fahrenheit

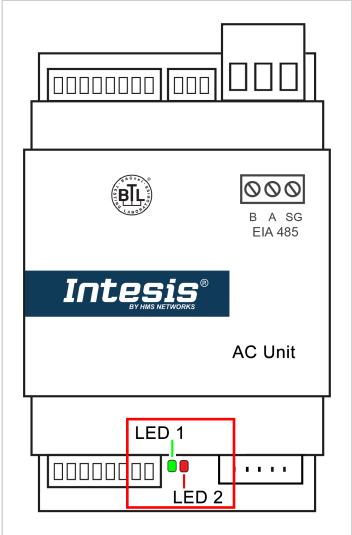
Table 4. ***DIP switch SW3****: (P1 to P3): BACnet/Modbus polarization and termination resistor*

Position			Description
1	2	3	
OFF	X	X	EIA-485 bus without termination resistor. The gateway is not at one end of the EIA-485 bus (default value)
ON	X	X	120 Ω termination resistor active. The gateway is at one end of the EIA-485 bus
X	OFF	OFF	No bus polarization (default value)
X	ON	ON	Bus polarization active

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

5.4. LED Indicators

There are two LEDs at the lower side of the gateway, between the DIP switch block SW1 and the **AC Unit** connector.



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

LED	Status	Description
When the gateway is set for BACnet MS/TP		
L1 Green	ON	EIA-485 bus link performed
	Flickering	Activity on the EIA-485 bus
	OFF	EIA-485 bus link not performed
L2 Red	ON	AC communication error
	Blinking	AC unit error
	Flashing	AC communication OK
When the gateway is set for Modbus RTU		
L1 Green	Blinking	Communication error Any error in the AC unit
	Flashing	Normal operation
L1 Green + L2 Red	Pulse	Gateway startup

LED PATTERNS

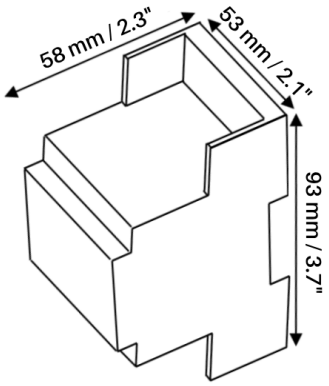
- **ON**: 100% on
- **Flickering**: irregular cycle (90% on - 10% off approx)
- **Blinking**: 50% on - 50% off
- **Flashing**: 10% on - 90% off
- **OFF**: 100% off
- **Pulse**: 5 seconds on - then off

5.5. Technical Specifications

Housing	Plastic, type PC (UL 94 V-0) Net dimensions (HxWxD): 93 x 53 x 58 mm / 3.7 x 2.1 x 2.3” Color: Light grey. RAL 7035 Protection: IP20
Net weight	85 g (3 oz)
Terminal wiring	Wire cross-section/gauge per terminal: One core: 0.2 .. 2.5 mm^2 (24 .. 11 AWG) Two cores: 0.2 .. 1.5mm^2 (24 .. 15 AWG) Three cores: Not permitted Use solid or stranded wires (twisted or with ferrule).
Mounting	Wall, DIN rail, or inside the indoor unit
EIA-485 port **BACnet MS/TP - Modbus RTU**	1 x pluggable terminal block (3 poles: B, A, and SG)
AC unit port	1 x Specific socket
LED indicators	2 x Communication status
DIP switches	SW1: Gateway, AC unit, and baud rate configuration SW2: BACnet/Modbus address and temperature unit SW3: Bus polarization and termination
Operational temperature	0 to +70°C / 32 to 158°F
Storage temperature	-20 to 85°C / -4 to 185°F
Operational and storage humidity	5% to 95% RH non-condensing
Isolation between comm. ports	1000 VDC

5.6. Dimensions

Net dimensions (HxWxD):
Millimeters: 93 x 53 x 58 mm
Inches: 3.66 x 2.08 x 2.28"



IMPORTANT
Leave enough clear space to wire the gateway easily and for the subsequent manipulation of elements such as connectors, DIP switches, etc.

6. Restore the Factory Settings

To restore the gateway to its factory settings, proceed as follows:

1. Set all switches from DIP switches SW1 and SW2 to **ON**.
2. Reboot the gateway:
   a. Power it OFF.
   b. Power it ON.

   NOTE
   To power the gateway OFF, disconnect it from the AC unit and from the power supply, if there is one. To power the gateway ON, reestablish those connections.

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 all switches from DIP switches SW1 and SW2 to **OFF** within 30 seconds.

   IMPORTANT
   If you take longer than 30 seconds, all LEDs will turn off, meaning that the procedure has failed. To retry it, go to step 1 and begin the procedure again.

After this procedure, the LED will flash red, meaning that the gateway has been restored to the factory settings.

7. BACnet Specifications

The following sections provide the gateway's specifications when it is set for BACnet MS/TP.

7.1. Objects

7.1.1. Supported Object Types

Object type	ID
Analog-Input	0
Analog-Output	1
Analog-Value	2
Binary-Input	3
Binary-Output	4
Binary-Value	5
Device	8
Multistate-Input	13
Multistate-Output	14
Multistate-Value	19

7.1.2. Member Objects

7.1.2.1. Type: Gateway

Object name	Description	Object type	Object instance
IN485FGL001I000	Fujitsu AC gateway	8: Device	246000 (default)

7.1.2.2. 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
UserSetPoint_status	AI	17
Setpoint_command	AO	0
VirtualTempActive	BI	14
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

Object name	Object type	Object instance
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
RemoteControllerProhibit_status	MI	6
RemoteControllerProhibit_command	MO	5
RoomFreezeProtection_status	BI	4
RoomFreezeProtection_command	BO	3
EcoMode_status	MI	5
EcoMode_command	MO	4
DIP_SW_S1_status	AI	9
DIP_SW_S2_status	AI	10
SerialNumber	AI	11

7.1.3. Objects and Properties

7.1.3.1. Fujitsu 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 246000 + 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 the **Object_Identifier** is overwritten from the BACnet side, the DIP switch SW2 configuration will not be considered for the Device instance calculation until the gateway is reset to the factory settings. See Restore the Factory Settings (page 14).

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	IN485FGL001I000	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

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Model_Name	CharacterString	IN485FGL001I000	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	Fujitsu 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 15)	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	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	-
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	-

7.1.3.2. 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	-

7.1.3.3. 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	-

7.1.3.4. 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 5. Mode status

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

7.1.3.5. 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 6. Mode command

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

7.1.3.6. Setpoint_status (Analog Input Object Type)

It reports the temperature setpoint requested to the indoor unit.

NOTE
To know more, see Considerations on Temperature Signals (page 66).

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	If freeze protection is off: 16 .. 30°C / 61 .. 86°F If freeze protection is on: 8 .. 10°C / 46 .. 50°F	R	R
Description	CharacterString	-	O	-
Device_Type	CharacterString	-	O	-
Status_Flags	BACnetStatusFlags	{FALSE, FALSE/TRUE, FALSE, FALSE}	R	R
Event_State	BACnetEventState	STATE_NORMAL (0)	R	R
Reliability	BACnetReliability	NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Update_Interval	Unsigned	-	O	-
Units	BACnetEngineeringUnits	Celsius degrees (62) Fahrenheit degrees (64)	R	R
Min_Pres_Value	REAL	If freeze protection is off: 16°C / 61°F If freeze protection is on: 8°C / 46°F	O	R
Max_Pres_Value	REAL	If freeze protection is off: 30°C / 86°F If freeze protection is on: 10°C / 50°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 10).

7.1.3.7. UserSetpoint_status (Analog Input Object Type)

It reports the value written in the Setpoint_command object.

NOTE
To know more, see Considerations on Temperature Signals (page 66).

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	If freeze protection is off: 16 .. 30°C / 61 .. 86°F If freeze protection is on: 8 .. 10°C / 46 .. 50°F	R	R
Description	CharacterString	-	O	-
Device_Type	CharacterString	-	O	-
Status_Flags	BACnetStatusFlags	{FALSE, FALSE, FALSE, FALSE}	R	R
Event_State	BACnetEventState	STATE_NORMAL (0)	R	R
Reliability	BACnetReliability	NO_FAULT_DETECTED (0) UNRELIABLE_OTHER (7)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Update_Interval	Unsigned	300	O	-
Units	BACnetEngineeringUnits	Celsius degrees (62) Farenheit degrees (64)	R	R
Min_Pres_Value	REAL	If freeze protection is off: 16°C / 61°F If freeze protection is on: 8°C / 46°F	O	-
Max_Pres_Value	REAL	If freeze protection is off: 30°C / 86°F If freeze protection is on: 10°C / 50°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	-

NOTE
You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 10).

7.1.3.8. Setpoint_command (Analog Output Object Type)

It is used to request a temperature setpoint from the BACnet side.

NOTE
To know more, see Considerations on Temperature Signals (page 66).

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	If freeze protection is off: 16 .. 30°C / 61 .. 86°F If freeze protection is on: 8 .. 10°C / 46 .. 50°F	W	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	If freeze protection is off: 16°C / 61°F If freeze protection is on: 8°C / 46°F	O	R
Max_Pres_Value	REAL	If freeze protection is off: 30°C / 86°F If freeze protection is on: 10°C / 50°F	O	R
Resolution	R	-	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 via the DIP switches. More information in DIP switches (page 10).

7.1.3.9. VirtualTempActive (Binary Input Object Type)

It indicates if the Virtual Temperature function is active or inactive.

NOTE

The Virtual Temperature function allows the gateway to set the reference temperature using the value reported by a sensor connected to the BMS.

For more information, see Virtual Temperature Function (page 65).

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	-

7.1.3.10. 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 .. 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 **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 7. 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	Fan Speed 6

7.1.3.11. FanSpeed_command (Multistate Output Object Type)

It sets the indoor unit's fan speed.

NOTE

Use the DIP switch SW1, positions 1 and 2, to set the number of fan speeds (four by default). See DIP switches (page 10).

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 .. 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 **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 8. 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	Fan Speed 6

7.1.3.12. 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 .. 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 up-down 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 9. Air direction up-down status

Present_Value	State_Text
1	Position 1
2	Position 2
3	Position 3
4	Position 4
5	Swing

7.1.3.13. 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 .. 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 up-down 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 10. Air direction up-down command

Present_Value	State_Text
1	Position 1
2	Position 2
3	Position 3
4	Position 4
5	Swing

7.1.3.14. 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	(Multistate Input, 3)	R	R
Object_Name	CharacterString	AirDirectionLR_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 **Air direction left-right 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 11. Air direction left-right status

Present_Value	State_Text
1	Position 1
2	Position 2
3	Position 3
4	Position 4
5	Position 5
6	Swing

7.1.3.15. AirDirectionLR_command (Multi-state 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 left-right 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 12. Air direction left-right command

Present_Value	State_Text
1	Position 1
2	Position 2
3	Position 3
4	Position 4
5	Position 5
6	Swing

7.1.3.16. RoomTemperature_status (Analog Input Object Type)

It reports the ambient temperature measured by the sensor from the AC system side.

NOTE
To know more, see Considerations on Temperature Signals (page 66).

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	-

NOTE
You can set the temperature scale in Celsius or Fahrenheit scale via DIP switches. More information in DIP switches (page 10).

7.1.3.17. RoomTemperature_command (Analog Output Object Type)

It is used to write the ambient temperature measured by a sensor from the BACnet side.

IMPORTANT
This object has no effect when using a communication accessory to connect the gateway and the Fujitsu AC unit.

NOTE
To know more, see Considerations on Temperature Signals (page 66).

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	16 .. 31°C / 61 .. 88°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	16°C / 61°F	O	-
Max_Pres_Value	REAL	31°C / 88°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 10).

7.1.3.18. 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 (page 69).

7.1.3.19. 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 .. 313	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	313	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 13. Error codes

Present_Value	State_Text	Present_Value	State_Text	Present_Value	State_Text	Present_Value	State_Text
-1	Comm.Error	44	2C	169	45	249	95
0	-	45	2d	170	46	250	96
1	1	46	2E	171	47	251	97
2	2	47	H0	172	48	252	98
3	3	47	2F	173	49	253	99
4	4	48	30	181	51	254	9A
5	5	49	31	182	52	259	9U
6	6	50	32	183	53	261	A1
7	7	51	33	184	54	262	A2
8	8	52	34	185	55	263	A3
9	9	53	35	186	56	264	A4
10	0A	54	36	187	57	265	A5
11	0b	55	37	188	58	266	A6
12	0C	56	38	189	59	267	A7
13	0d	117	11	195	5U	268	A8
14	0E	118	12	197	61	269	A9
15	0F	119	13	198	62	270	AA
17	11	120	14	199	63	271	AC
18	12	121	15	200	64	272	AF
19	13	122	16	201	65	273	AJ
20	14	123	17	202	66	277	C1
21	15	133	21	203	67	278	C2

Present_Value	State_Text	Present_Value	State_Text	Present_Value	State_Text	Present_Value	State_Text
22	16	134	22	204	68	279	C3
23	17	135	23	205	69	280	C4
24	18	136	24	206	6A	281	C5
25	19	137	25	213	71	282	C6
26	CA	138	26	214	72	283	C7
26	1A	139	27	215	73	284	C8
27	1b	140	28	216	74	285	C9
28	1C	141	29	217	75	286	CA
29	1d	149	31	218	76	287	CC
30	1E	150	32	219	77	288	CF
31	1F	151	33	220	78	289	CJ
32	20	152	34	229	81	293	F1
33	21	153	35	230	82	294	F2
34	22	154	36	231	83	295	F3
36	24	155	37	232	84	296	F4
37	25	156	38	233	85	309	J1
38	26	157	39	234	86	310	J2
39	27	158	3A	235	87	311	J3
40	28	165	41	245	91	312	J4
41	29	166	42	246	92	313	J5
42	2A	167	43	247	93		
43	2b	168	44	248	94		

7.1.3.20. 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	-

7.1.3.21. 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	-

7.1.3.22. FilterSign (Binary Input Object Type)

It indicates the status of the filter.

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	-

7.1.3.23. 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	-

7.1.3.24. Occupancy (Multistate Value Object Type)

It indicates the current occupancy status.

NOTE
To know more, see Occupancy Function (page 57).

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Value, 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 14. Occupancy values

Present_Value	State_Text
1	Occupied
2	Unoccupied
3	Disabled

7.1.3.25. OccupiedCoolSetPoint (Analog Value Object Type)

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

NOTE
To know more, see Occupancy Function (page 57).

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 10).

7.1.3.26. OccupiedHeatSetPoint (Analog Value Object Type)

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

NOTE
To know more, see Occupancy Function (page 57).

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 10).

7.1.3.27. UnoccupiedCoolSetPoint (Analog Value Object Type)

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

NOTE
To know more, see Occupancy Function (page 57).

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 10).

7.1.3.28. UnoccupiedHeatSetPoint (Analog Value Object Type)

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

NOTE
To know more, see Occupancy Function (page 57).

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 10).

7.1.3.29. OccupancyContinuousCheck (Binary Value Object Type)

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

NOTE
To know more, see Occupancy Function (page 57).

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
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	-

7.1.3.30. UnoccupiedDeadbandAction (Binary Value Object Type)

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

NOTE
To know more, see Occupancy Function (page 57).

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
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	-

7.1.3.31. RemoteControllerProhibit_status (Multistate Input Object Type)

It indicates the remote controller prohibit status.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Input, 6)	R	R
Object_Name	CharacterString	RemoteControllerProhibit_status	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT (13)	R	R
Present_Value	Unsigned	1 .. 2	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	2	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **Remote Controller Prohibit 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 15. RemoteControllerProhibit_ Status

Present_Value	State_Text
1	Unlocked
2	Locked

7.1.3.32. RemoteControllerProhibit_command (Multistate Output Object Type)

It allows control over the indoor unit's Remote Controller.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Multistate Output,5)	R	R
Object_Name	CharacterString	RemoteControllerProhibit__command	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 .. 2	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) UNRELIABLE_OTHER (7)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Number_Of_States	Unsigned	2	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **Remote Controller Prohibit 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 16. RemoteControllerProhibit_Command

Present_Value	State_Text
1	Unlocked
2	Locked

7.1.3.33. RoomFreezeProtection_status (Binary Input Object Type)

It indicates if the Room freeze protection function is On or Off.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Binary Input, 4)	R	R
Object_Name	CharacterString	RoomFreezeProtection_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, 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	-
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	-

7.1.3.34. RoomFreezeProtection_command (Binary Output Object Type)

It sets the Room freeze protection function to On or Off.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Binary Output, 3)	R	R
Object_Name	CharacterString	RoomFreezeProtection_command	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, 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	-

7.1.3.35. EcoMode_status (Multistate Input Object Type)

It indicates the status of the EcoMode function.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multistate Input, 5)	R	R
Object_Name	CharacterString	EcoMode_status	R	R
Object_Type	BACnetObjectType	MULTISTATE_INPUT (13)	R	R
Present_Value	Unsigned	1 .. 2	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	2	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **EcoMode 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	-

EcoMode interpretation is possible using the value in the following correspondence table:

Table 17. EcoMode Status Table

Present_Value	State_Text
1	Off
2	On

7.1.3.36. EcoMode_command (Multistate Output Object Type)

It allows control over the EcoMode function.

Property Identifier	Property Datatype	Value	ASHRAE	IBOX
Object_Identifier	BACnetObjectIdentifier	(Multistate Output,0)	R	R
Object_Name	CharacterString	EcoMode_command	R	R
Object_Type	BACnetObjectType	MULTISTATE_OUTPUT (14)	R	R
Present_Value	Unsigned	1 .. 2	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	2	R	R
State_Text	BACnetArray[N] of CharacterString	Check the **EcoMode 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	-

EcoMode interpretation is possible using the value in the following correspondence table:

Table 18. EcoMode Command Table.

Present_Value	State_Text
1	Off
2	On

7.1.3.37. 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 to 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

7.1.3.38. 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 to binary. The gateway reads this value only when booting up.

Property Identifier	Property Datatype	Value	ASHRAE	Gateway
Object_Identifier	BACnetObjectIdentifier	(Analog Input, 10)	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

7.1.3.39. 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)	O	R
Out_Of_Service	BOOLEAN	FALSE	R	R
Polarity	BACnetPolarity	NORMAL (0)	R	R
Inactive_Text	CharacterString	-	O	R
Active_Text	CharacterString	-	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] ofBACnetTimeStamp	-	O	-
Profile_Name	CharacterString	-	O	-
Units	BACnetEngineeringUnits	No units (95)	R	R
COV_Increment	REAL	0	O	W

7.2. Occupancy Function

IMPORTANT
The Occupancy function is only available for BACnet.

The Occupancy function determines the AC unit's behavior depending on the presence or absence of people in the room. This signal is processed directly in the Intesis gateway and has the capacity to modify three parameters of the AC system: Setpoint, Mode, and On/Off.

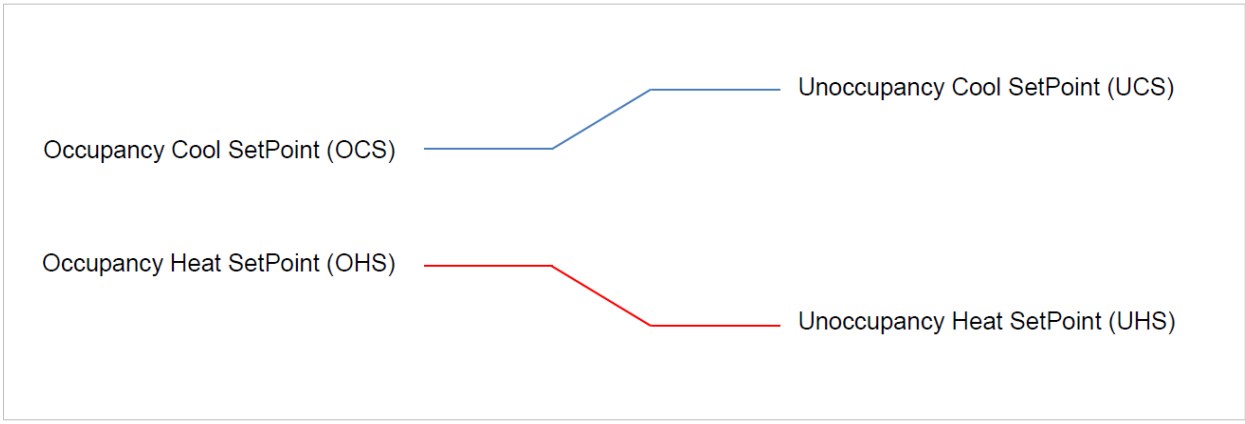
IMPORTANT
This function requires a presence sensor on the control system (BMS) side, which determines the state of the **Occupancy** object:

- **Occupied**: Someone is in the room.
- **Unoccupied**: No one is in the room.
- **Disabled**: The function is disabled

Besides the Occupancy object, and to adjust the settings of the Occupancy function, the gateway offers these BACnet objects:

- **Occupancy Cool Setpoint (OCS):** Setpoint temperature when the AC unit is in cool mode and someone is present in the room.
- **Unoccupancy Cool SetPoint (UCS):** Setpoint temperature when the AC unit is in cool mode and no one is in the room.
- **Occupancy Heat Setpoint (OHS):** Setpoint temperature when the AC unit is in heat mode and someone is present in the room.
- **Unoccupancy Heat SetPoint (UHS):** Setpoint temperature when the AC unit is in heat mode and no one is in the room.

Figure 4. Temperature setpoint objects related to the room's occupancy status and the AC unit's mode



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

- **Occupancy Continuous check:** It determines when the gateway checks the room occupancy:
  - If this object's value is 1 (active), the gateway checks the occupancy when the occupancy status and the room temperature change.

  - If this object's value is 0 (inactive), the gateway only checks the occupancy when the occupancy status changes.

- **Unoccupied Deadband Action:** It determines the AC unit's behavior when the room is unoccupied and the ambient temperature is within the deadband.
  - If this object's value is 1 (active), the indoor unit will remain on.
  - If this object's value is 0 (inactive), the indoor unit will turn off.

When there is presence in the room, and according to the current room temperature, the AC unit's **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 there is no presence in the room, and according to the current room temperature, the AC unit's **mode, setpoint** and **on/of**f will be set to:

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

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

8. Modbus Specifications

The following sections provide the gateway's specifications when it is set for Modbus RTU.

8.1. Implemented Modbus Functions

The IN485FGL001I000 gateway implements the following standard Modbus functions:

- 03: Read Holding Registers
- 04: Read Input Registers
- 06: Write Single Register
- 16: Write Multiple Registers

IMPORTANT
Even though function 16 is available, the gateway does not allow writing operations on more than one register with the same request, so the length field when using this function should always be one.

8.2. Modbus Physical Layer

The IN485FGL001I000 gateway implements a Modbus RTU (server) interface to be connected to an EIA-485 bus. It features an 8-N-2 communication (eight data bits, no parity, and two stop bits) with several available baud rates: 2400, 4800, **9600 -default-**, 19200, 38400, 57600, 76800, and 115200 bps. It also supports 8-N-1 communication (eight data bits, no parity, and one stop bit).

8.3. Modbus Registers

Register Name	Possible values	Modbus address (base 0)	PLC address (base 1)	R/W
ON/OFF	0: Off 1: On	0	1	R/W
OPERATION MODE	0: Auto 1: Heat 2: Dry 3: Fan 4: Cool **NOTE** The available modes may vary depending on the AC model.	1	2	R/W
FAN SPEED	0: Auto 1 .. 5: Speed 1 .. Speed 5 10: Fan stop **NOTE** The available fan speeds may vary depending on the AC model. **NOTE** Set the available fan speeds via the DIP switch SW1.	2	3	R/W

Register Name	Possible values	Modbus address (base 0)	PLC address (base 1)	R/W
VANE U/D POSITION	0: Auto 1 .. 9: Pos 1 .. Pos 9 10: Swing **NOTE** The available vane positions may vary depending on the AC model.	3	4	R/W
TEMPERATURE (USER) SETPOINT **NOTE** Temperature requested from the Modbus side. To know more, see Considerations on Temperature Signals (page 66).	-32768 (Initialization value) Value in °C; °F; x1; x10 **NOTE** Set the temperature units via the DIP switch SW2. **NOTE** The value range depends on the AC model.	4	5	R/W
INDOOR UNIT REFERENCE TEMPERATURE **NOTE** Ambient temperature that the indoor unit is using as a reference. To know more, see Considerations on Temperature Signals (page 66).	Value in °C; °F; x1; x10 **NOTE** Set the temperature units via the DIP switch SW2. **NOTE** The value range depends on the AC model.	5	6	R
WINDOW CONTACT PROTOCOL INPUT	0: Closed (default) 1: Open	6	7	R/W
CONTROL OBJECTS DISABLEMENT **NOTE** It disables the control of the AC unit through the registers of the gateway. This value is stored in non-volatile memory	0: Control objects enabled (default) 1: Control objects disabled **TIP** Send a 0 to this register if, for an unknown reason, the gateway doesn't work.	7	8	R/W
REMOTE CONTROL DISABLEMENT **NOTE** It disables the control of the AC unit through any RC. This value is stored in non-volatile memory	0: RC enabled (default) 1: RC disabled	8	9	R/W
OPERATION TIME **NOTE** This value is stored in non-volatile memory	0 .. 65535 hours	9	10	R/W
ALARM STATUS	0: No Error present 1: Error present	10	11	R
ERROR CODE	0: No error present 65535 (-1 if read as a signed value): Communication error between the gateway or the remote controller and the AC unit. For any other value, see Error Codes (page 69).	11	12	R

Register Name	Possible values	Modbus address (base 0)	PLC address (base 1)	R/W
OPEN WINDOW TIMEOUT (MIN) **NOTE** Once window contact is "open", this is the time in minutes before turning the AC unit off.	0 .. 30 minutes Default value: 30	13	14	R/W
BAUDRATE	Baudrate currently selected via DIP switch SW2.	14	15	R
MODBUS SLAVE ADDRESS	1 .. 63	15	16	R
MAX NUM OF FANSPEEDS	Configured number of fan speeds.	21	22	R
INPUT SENSOR TEMPERATURE **NOTE** Ambient temperature provided by a sensor from the Modbus side. See Virtual Temperature Function (page 65). **IMPORTANT** This register has no effect when using a communication accessory to connect the gateway and the Fujitsu AC unit.	0x8000 (-32768): Initialization value. No temperature is provided by an external sensor. Any other value: Ambient temperature reported by the Modbus sensor.	22	23	R/W
AC REAL SETPOINT **NOTE** Temperature setpoint sent to the indoor unit. To know more, see Considerations on Temperature Signals (page 66).	Value in °C; °F; x1; x10 **NOTE** Set the temperature units via the DIP switch SW2. **NOTE** The value range depends on the AC model.	23	24	R
ACTUAL AC MAX SETPOINT	-32768 (Initialization value) Value in °C; °F; x1; x10 **NOTE** Set the temperature units via the DIP switch SW2. **NOTE** The value range depends on the AC model.	24	25	R
ACTUAL AC MIN SETPOINT	-32768 (Initialization value) Value in °C; °F; x1; x10 **NOTE** Set the temperature units via the DIP switch SW2. **NOTE** The value range depends on the AC model.	25	26	R

Register Name	Possible values	Modbus address (base 0)	PLC address (base 1)	R/W
VANE L/R POSITION	0: Auto 1 .. 5: Pos 1 .. Pos 5 10: Swing **NOTE** The available vane L/R positions depend on the AC model.	26	27	R/W
WINDOW CONTACT FUNCTIONAL STATUS (FEEDBACK)	0: Not active (default) 1: Active (the window is open)	31	32	R
EXTERNAL ON/OFF DISABLEMENT	0: Not active (default) 1: Active	36	37	R/W
WIN CONTACT ON/OFF DISABLEMENT	0: Window contact is not disabling On/Off 1: Window contact is disabling On/Off	40	41	R
FILTER RESET	1: Reset	43	44	W
FILTER STATUS	0: Off - Filter status clean 1: Filter status alarm	44	45	R
SWITCH VALUE	Current value of DIP switches	48	49	R
ANTIFREEZE OPERATION	0: Off 1: On	56	57	R/W
ECO MODE	0: Off 1: Econavi 2: Auto comfort	57	58	R/W
ECONOMY OPERATION	0: Disabled 1: Enabled	64	65	R/W
INPUT REFERENCE TEMPERATURE (FEEDBACK)	Value in °C; °F; x1; x10 **NOTE** Set the temperature units via the DIP switch SW2.	65	66	R
RETURN PATH TEMPERATURE	Value in °C; °F; x1; x10 **NOTE** Set the temperature units via the DIP switch SW2.	66	67	R
FW version MSB	It shows the first two numbers of the firmware version. Example: For version 1.2.3.4, it will show 1.2 (in hexadecimal).	94	95	R
FW version LSB	It shows the last two numbers of the firmware version. Example: For version 1.2.3.4, it will show 3.4 (in hexadecimal).	95	96	R
RESET	1: Reset	99	100	W
VIRTUAL TEMP ACTIVE	0: Not active 1: Active	129	130	R
WINDOW CONTACT STEP	0: Idle (window is closed) 1: Timeout1 (window is opened, timeout starts) 2: Timeout2 (it doesn't apply to window contact) 3: Window contact applies (window is opened, time is finished, window contact action is applied)	130	131	R
WINDOW CONTACT RELOAD LAST VALUE	0: No (default) 1: Yes	1000	1001	R/W
WINDOW CONTACT LOCK WHEN OPEN	0: No 1:Yes	1001	1002	R/W
WINDOW TIMEOUT (IN MINUTES)	0 .. 30	1002	1003	R/W

Register Name	Possible values	Modbus address (base 0)	PLC address (base 1)	R/W
MACHINE MODE	0: Normal 2: Limited setpoint	1150	1151	R/W
MACHINE MIN SETPOINT COOL	Value in °C; °F; x1; x10 Default value: 24°C / 75°F **NOTE** Set the temperature units via the DIP switch SW2.	1153	1154	R/W
MACHINE MAX SETPOINT COOL	Value in °C; °F; x1; x10 Default value: 28°C / 82°F **NOTE** Set the temperature units via the DIP switch SW2.	1154	1155	R/W
MACHINE MIN SETPOINT HEAT	Value in °C; °F; x1; x10 Default value: 19°C / 66°F **NOTE** Set the temperature units via the DIP switch SW2.	1155	1156	R/W
MACHINE MAX SETPOINT HEAT	Value in °C; °F; x1; x10 Default value: 23°C / 73°F **NOTE** Set the temperature units via the DIP switch SW2.	1156	1167	R/W
POLL TIMEOUT (ms)	Time between polls (in milliseconds) Default value: 5000 ms	1160	1161	R/W
DEVICE IDENTIFIER	12034	2000	2001	R
MODE_MAP	Indicates the available states of the signal. Each bit in the register has its own meaning. Refer to the following tables for additional information.	2001	2002	R
FAN_MAP		2002	2003	R
VANES_MAP		2003	2004	R
U_D_VANES_MAP		2004	2005	R
L_R_VANES_MAP		2005	2006	R
RUNTIME_MODE_RESTRICTIONS_MAP		2012	2013	R

NOTICE
Custom limits defined in the **MACHINE MIN SETPOINT COOL**, **MACHINE MAX SETPOINT COOL**, **MACHINE MIN SETPOINT HEAT**, and **MACHINE MAX SETPOINT HEAT** registers only apply when the **MACHINE MODE** value is set to 2 (Limited setpoint).

Table 19. MODE_MAP bit characterization

Bit 15	Bit 04	Bit 03	Bit 02	Bit 01	Bit 00
1: Invalid 0: Valid	COOL	FAN	DRY	HEAT	AUTO
	1: Enabled 0: Disabled				

Table 20. FAN_MAP bit characterization

Bit 15	Bit 10	Bit 05	Bit 04	Bit 03	Bit 02	Bit 01	Bit 00
1: Invalid 0: Valid	STOP	SPEED 5	SPEED 4	SPEED 3	SPEED 2	SPEED 1	AUTO
	1: Enabled 0: Disabled						

Table 21. VANES_MAP bit characterization

Bit 15	Bit 03	Bit 02	Bit 01	Bit 00
1: Invalid 0: Valid	PULSE L/R	PULSE U/D	SPECIFIC L/R	SPECIFIC U/D
	1: Enabled 0: Disabled			

Table 22. U_D_VANES_MAP bit characterization

Bit 15	Bit 10	Bit 09	Bit 08	Bit 07	Bit 06	Bit 05	Bit 04	Bit 03	Bit 02	Bit 01	Bit 00
1: Invalid 0: Valid	SWING	POS_9	POS_8	POS_7	POS_6	POS_5	POS_4	POS_3	POS_2	POS_1	AUTO/ OFF
	1: Enabled 0: Disabled										

Table 23. L_R_VANES_MAP bit characterization

Bit 15	Bit 10	Bit 05	Bit 04	Bit 03	Bit 02	Bit 01	Bit 00
1: Invalid 0: Valid	SWING	POS_5	POS_4	POS_3	POS_2	POS_1	AUTO/OFF
	1: Enabled 0: Disabled						

Table 24. RUNTIME_MODE_RESTRICTIONS_MAP bit characterization

Bit 15	Bit 04	Bit 03	Bit 02	Bit 01	Bit 00
1: Invalid 0: Valid	COOL	FAN	DRY	HEAT	AUTO
	1: Not writable 0: Writable				

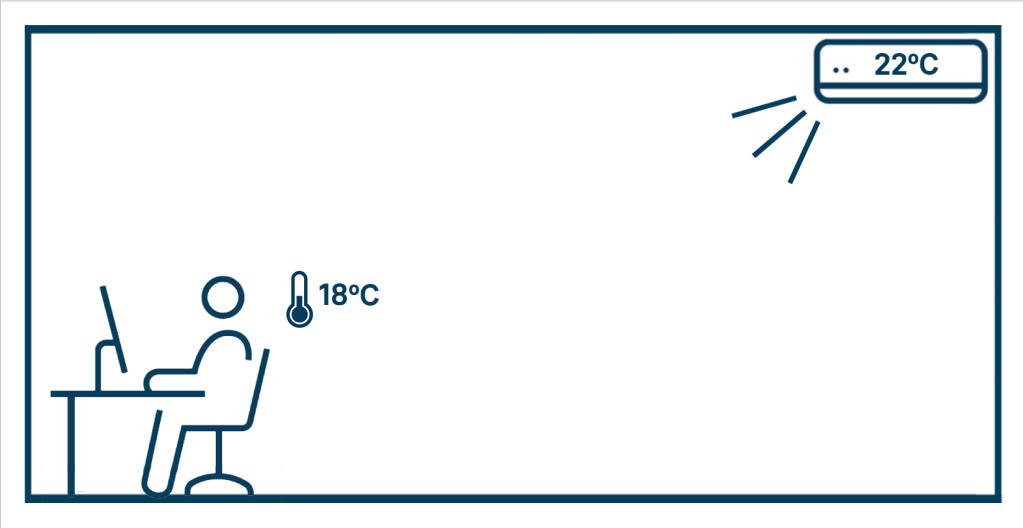
9. Virtual Temperature Function

IMPORTANT
This function is only available when a communication accessory is not used to connect the gateway to the Fujitsu AC unit.

Typically, the temperature sensor used by Fujitsu indoor units[1] to establish the temperature setpoint is placed inside the indoor unit itself. This may provoke a substantial difference between the temperature perceived by this sensor and the temperature perceived by the room occupants, especially if the indoor unit is mounted away, such as on a high ceiling or a distant wall.

NOTE
[1] Referring to the indoor units compatible with this IN485FGL001I000 gateway.

Figure 5. In this case, the room temperature is four degrees Celsius less than the temperature perceived by the indoor unit's sensor.



Also, Fujitsu AC systems don't allow the IN485FGL001I000 gateway to provide the reference temperature, i.e., to overwrite the value reported by the indoor unit's sensor, which is the value the AC system uses as the reference temperature.

To overcome these issues, this IN485FGL001I000 gateway implements the Virtual Temperature function.

With the Virtual Temperature function, the gateway uses the value reported by a temperature sensor from the BMS side, i.e., a sensor connected to the BACnet or Modbus installation, to apply a formula that establishes the setpoint temperature for the indoor unit. This recalculated setpoint can effectively be sent to the AC system by the gateway to overwrite the AC system's reference temperature and, at the same time, it offsets the difference between the real temperature in the room and the temperature perceived by the indoor unit.

NOTICE
To use the value reported by the BMS side's sensor, the gateway implements the BACnet object **RoomTemperature_command (Analog Output)** and the Modbus register **Input sensor temperature (protocol address 22 / PLC address 23)**[2].

To know more about all the objects dedicated to temperature settings, see Considerations on Temperature Signals (page 66).

NOTE
[2] The names of the Modbus registers provided in this section are for reference purposes only; pay attention chiefly to their numerical addresses.

HOW THE VIRTUAL TEMPERATURE FUNCTION WORKS

When the Virtual Temperature function is active, the gateway is constantly applying the following formula:

$S_{AC} = T_{AC} – (T_{BMS} – S_{BMS})$

Where:

- S_{AC}: Recalculated temperature setpoint sent to the indoor unit after the gateway applies the formula.
- T_{AC}: Indoor unit's reference temperature.
- T_{BMS}: Ambient temperature reported by the sensor connected to the BMS side.
- S_{BMS}: Temperature setpoint requested from the BMS side.

Once activated, the Virtual Temperature function recalculates the setpoint when any of these values change.

HOW TO ACTIVATE THE VIRTUAL TEMPERATURE FUNCTION

Follow this procedure:

1. Write the desired setpoint temperature in the **Setpoint_command** BACnet object/**Temperature setpoint** Modbus register (protocol address 4, PLC address 5).
2. Read the temperature value reported by a temperature sensor from the BMS side.
3. Write this value in the **RoomTemperature_command** BACnet object/**Input sensor temperature** Modbus register (protocol address 22, PLC address 23).

Once the gateway receives valid values for these objects/registers, the Virtual Temperature function is automatically activated.

NOTE
When starting up the gateway, the dedicated object/register to write the ambient temperature perceived from the BMS side reports a value of -32768 (0x8000). For BACnet, this object is **RoomTemperature_command** (Analog Output). For Modbus, this register is **Input sensor temperature** (R/W) (protocol address 22 / PLC address 23).

FOR BACNET
When starting up the gateway, the Present_Value property for the RoomTemperature_command object is 0, and the Reliability property displays **UNRELIABLE_OTHER (7)**. This means that no external temperature reference has been provided to the object, so the system is not applying the Virtual Temperature function. However, after receiving the first value, the Reliability property changes to **NO_FAULT_DETECTED (0)**. After that, any value can be used in the temperature range, including 0.

9.1. Considerations on Temperature Signals

NOTE
You can set the temperature signals in degrees Celsius or Fahrenheit via the DIP switch SW2. More information in DIP switches (page 10).

NOTE
The names of the Modbus registers provided in this section are for reference purposes only; pay attention chiefly to their numerical addresses.

Table 25. Objects and registers dedicated to temperature signals and to the Virtual Temperature function

BACnet object	Modbus register	Function when the Virtual Temperature function is inactive	Function when the Virtual Temperature function is active
Setpoint_status (Analog Input)	AC real setpoint (R) (protocol address 23 / PLC address 24)	It indicates the temperature setpoint sent to the indoor unit. It will report the same value as the value introduced in the Setpoint_command/AC unit temperature setpoint.	It indicates the recalculated temperature setpoint sent to the indoor unit after the gateway applies the $S_{AC} = T_{AC} – (T_{BMS} – S_{BMS})$ formula. It may report a value different from the value introduced in the Setpoint_command/AC unit temperature setpoint.
Setpoint_command (Analog Output)	Temperature (user) setpoint (R/W) (protocol address 4 / PLC address 5)	It is used to request the temperature setpoint from the BMS side. It will report the same value as a wired remote controller connected to the indoor unit (if available).	It is used to request the temperature setpoint from the BMS side. It may report a value different from the one reported by a wired remote controller connected to the indoor unit (if available).
RoomTemperature_status (Analog Input)	Indoor unit reference temperature (R) (protocol address 5 / PLC address 6)	It indicates the ambient temperature perceived by the sensor from the AC system side (the sensor inside the indoor unit or inside the wired remote controller, if available).	It indicates the ambient temperature perceived by the sensor from the AC system side (the sensor inside the indoor unit or inside the wired remote controller, if available).
RoomTemperature_command (Analog Output)	Input sensor temperature (R/W) (protocol address 22 / PLC address 23)*	It is used to activate the Virtual Temperature function by writing the value reported from a BMS side sensor.	It indicates the temperature reported from a BMS side sensor.
VirtualTemperatureActive (Binary Input)	Virtual Temp Active (R) (protocol address 129 / PLC address 130)**	It reports a value of 0	It reports a value of 1
UserSetpoint_status (Analog Input)	Temperature (user) setpoint (R/W) (protocol address 4 / PLC address 5)	It indicates the temperature setpoint requested from the BMS side.	It indicates the original temperature setpoint requested from the BMS side.

NOTE
* This register has been available since firmware version 0.8.

The BACnet object **RoomTemperature_command (Analog Output)** / Modbus register **Input sensor temperature (protocol address 22 / PLC address 23)** has no effect when using a communication accessory to connect the gateway and the Fujitsu AC unit.

NOTE
** This Modbus register may be missing in your gateway since it is only implemented in the 485 series. However, the Virtual Temperature function is not dependent on this register, and it is available in your gateway if its order code is listed in the note at the beginning of this section.

NOTE
As explained in this topic, and due to the Virtual Temperature function, Fujitsu cannot guarantee that the value reported by the **RoomTemperature_command** object/**Input sensor temperature** register is consistently equal to the actual room temperature.

VIRTUAL TEMPERATURE FUNCTION EXAMPLE CASE

Imagine a very cold room with a temperature of 10°C. There's an AC indoor unit mounted in the ceiling, which is very high.

The technician responsible for the BMS wants to raise the room temperature to 20°C. To achieve this, she accesses the console and sets this value in the BACnet object **Setpoint_command (Analog Output)**/Modbus register **Temperature (user) setpoint (protocol address 4 / PLC address 5)**. The same value of “20” is also reflected in the BACnet object **Setpoint_status (Analog Input)**/Modbus register **AC real setpoint (protocol address 23 / PLC address 24)**.

A few minutes later, the technician checks the BACnet object **RoomTemperature_status (Analog Input)**/Modbus register **Indoor unit reference temperature (protocol address 5 / PLC address 6)** to determine the temperature reported by the indoor unit’s sensor, which reads 17°C. However, the BMS sensor in the room reports a temperature of 13°C. The technician knows that the BMS sensor is better positioned than the indoor unit’s sensor. Unfortunately, the indoor unit does not allow the gateway a direct overwriting of the value reported by its sensor temperature. To address this, the technician activates the Virtual Temperature function.

To activate it, she writes the temperature currently perceived by the BMS sensor (13°C) into the BACnet object **RoomTemperature_command (Analog Output)**/Modbus register **Input sensor temperature (protocol address 22 / PLC address 23)**. As soon as she inputs “13” into that object/register, the BACnet object **VirtualTemperatureActive (Binary Input)**/Modbus register **Virtual Temp Active (protocol address 129 / PLC address 130)** transitions from “0” to “1.” This indicates that the Virtual Temperature function is now active and will continuously apply the formula to recalculate the setpoint temperature sent to the indoor unit.

At this moment, the formula values are: 17-(13-20)=24. Therefore, the Virtual Temperature function is currently sending a setpoint of 24°C to the indoor unit, and this value is reflected in the BACnet object **Setpoint_status (Analog Input)**/Modbus register **AC real setpoint (protocol address 23 / PLC address 24)**.

After a few minutes, the technician checks the BACnet object **RoomTemperature_command (Analog Output)**/ Modbus register **Input sensor temperature (protocol address 22 / PLC address 23)** to find the temperature perceived by the BMS sensor: 19°C. Then, she looks at the BACnet object **RoomTemperature_status (Analog Input)**/Modbus register **Indoor unit reference temperature (protocol address 5 / PLC address 6)**, which reports the temperature sensed by the indoor unit: 24°C.

At this point, the formula applied by the Virtual Temperature function is based on these numbers: 24-(19-20)=25. The technician observes the BACnet object **Setpoint_status (Analog Input)**/Modbus register **AC real setpoint (protocol address 23 / PLC address 24)** and realizes that the Virtual Temperature function has established the setpoint at 25°C.

10. Error Codes

NOTE

- These error codes are the same for BACnet and Modbus.
- Since the error codes for the ErrorCodeM BACnet object are the same as those for the RC, they are not listed.

10.1. Gateway Error Codes

Error code	Error code in the RC	Error description
0	N/A	No active error
65535 (-1)	N/A	Communication error between the gateway or the remote controller and the AC unit

10.2. RAC and VRF J-II/V-II/VR-II Series Error Codes

Error code	Error in the RC	System	Error description
0	0	**RAC** Inverter and Non-inverter	Wired remote controller error
1	1		Indoor signal error
2	2		Indoor room temperature sensor error
3	3		Indoor room temperature sensor error
4	4		Indoor heat exchanger temperature sensor (middle) error
5	5		Indoor heat exchanger temperature sensor (middle) error
6	6		Outdoor heat exchanger temperature sensor (outlet) error
7	7		Outdoor heat exchanger temperature sensor (outlet) error
8	8		Power voltage error
9	9		Float switch operated
10	0A		Outdoor temperature sensor error
11	0b		Outdoor temperature sensor error
12	0C		Outdoor discharge pipe temperature sensor error
13	0d		Outdoor discharge pipe temperature sensor error
14	0E		Heat sink thermistor (Inverter) error
15	0F		Discharge temperature error
17	11		Indoor unit EEPROM error
18	12		Indoor fan error
19	13		Indoor signal error
20	14		Outdoor EEPROM error
21	15		Compressor temperature sensor error
22	16		Pressure switch abnormal, Pressure sensor error
23	17		IPM protection
24	18		CT error
25	19		Active filter error
			INV voltage protection
26	1A		Compressor location error
27	1b		Outdoor fan error
28	1C		Outdoor unit computer communication error
29	1d		2-way valve temperature sensor error

30	1E		3-way valve temperature sensor error
31	1F		Connected indoor unit error
32	20		Indoor MANUAL AUTO switch error
33	21		reverse VDD permanent stop protection
34	22		VDD permanent stop protection
36	24		Excessive high pressure protection on cooling
37	25		P.F.C. circuit error
38	26		Indoor signal error
39	27		Indoor signal error
40	28		Indoor heat exchanger temperature sensor (inlet) error
41	29		Outdoor heat exchanger temperature sensor (middle) error
42	2A		Power supply frequency detection error
43	2b		Compressor temperature error
44	2C		4-way valve error
45	2d		Heat sink thermistor P.F.C. error
46	2E		Indoor unit damper error
			Inverter error
47	2F		Low pressure error
48	30		Refrigerant circuit address set-up error
49	31		Master unit, Slave unit set-up error
50	32		Connected the indoor number set-up error
51	33		P.F.C. printed circuit board error
52	34		Indoor fan 2 error
53	35		Control box thermistor error
54	36		Indoor unit CT error
55	37		Indoor fan motor 1 driving circuit error
56	38		Indoor fan motor 2 driving circuit error
117	11	**RAC** Inverter Models G series **VRF** J-II/V-II/VR-II Series	Serial communication error between indoor/outdoor units
118	12		Remote controller communication error
119	13		Communication error between outdoor units
120	14		Network communication error
121	15		Scan error
122	16		Peripheral unit communication error
123	17		Electricity charge apportionment error
133	21		Indoor unit initial setting error
134	22		Indoor unit capacity abnormal
135	23		Incompatible series connection error
136	24		Connection unit number error
137	25		Connection pipe length error
138	26		Indoor unit address setting error
139	27		Master/slave unit setting error
140	28		Other setting error
141	29		Connection unit number error in wired remote controller system
149	31		Indoor unit power supply abnormal
150	32		Indoor unit main PCB error
151	33		Indoor unit display PCB error
152	34		Power relay error
153	35		Indoor unit manual auto switch error
154	36		Heater relay error

155	37		Indoor unit transmission PCB error
156	38		Network convertor PCB error
157	39		Indoor unit power supply circuit error
158	3A		Indoor unit communication circuit (wired remote controller) error
165	41		Indoor unit room temp. thermistor error
166	42		Indoor unit heat ex. temp. thermistor error
167	43		Humidity sensor error
168	44		Light sensor error
169	45		Gas sensor error
170	46		Float sensor error
171	47		Water temperature sensor error
172	48		Warm water flow rate sensor error
173	49		Heater sensor error
181	51		Indoor unit fan motor 1 error
182	52		Indoor unit coil (expansion valve) error
183	53		Indoor unit water drain abnormal
184	54		Air cleaning function error
185	55		Filter cleaning function error
186	56		Water circulation pump error
187	57		Indoor unit damper error
188	58		Indoor unit intake grille position error
189	59		Indoor unit fan motor 2 error
195	5U		Indoor unit miscellaneous error
197	61		Outdoor unit power supply abnormal
198	62		Outdoor unit main PCB error
199	63		Outdoor unit inverter PCB error
200	64		Outdoor unit active filter/PFC circuit error
201	65		Outdoor unit IPM error
202	66		Convertor distinction error
203	67		Outdoor unit power short interruption error (protective operation)
204	68		Outdoor unit magnetic relay error
205	69		Outdoor unit transmission PCB error
206	6A		Outdoor unit display PCB error
213	71		Outdoor unit discharge temp. thermistor error
214	72		Outdoor unit compressor temp. thermistor error
215	73		Outdoor unit heat ex. temp. thermistor error
216	74		Outside air temp. thermistor error
217	75		Outdoor unit suction gas temp. thermistor error
218	76		Outdoor unit operating valve thermistor error
219	77		Outdoor unit heat sink temp. thermistor error
220	78		Expansion valve temperature sensor error
229	81		Receiver liquid level detection sensor error
230	82		Outdoor unit sub-cool heat ex. gas temp. thermistor error
231	83		Outdoor unit liquid pipe temp. thermistor error
232	84		Outdoor unit current sensor error
233	85		Fan motor current sensor error
234	86		Outdoor unit pressure sensor error
235	87		Oil sensor error
245	91		Outdoor unit compressor 1 error

246	92		Outdoor unit compressor 2 error
247	93		Outdoor unit compressor start up error
248	94		Outdoor unit trip detection
249	95		Outdoor unit compressor motor control error
250	96		Open loop error (Field-weakening relevant)
251	97		Outdoor unit fan motor 1 error
252	98		Outdoor unit fan motor 2 error
253	99		Outdoor unit 4-way valve error
254	9A		Outdoor unit coil (expansion valve) error
259	9U		Outdoor unit miscellaneous error
261	A1		Outdoor unit discharge temperature 1 error
262	A2		Outdoor unit discharge temperature 2 error
263	A3		Outdoor unit compressor temperature error
264	A4		Outdoor unit pressure error 1
265	A5		Outdoor unit pressure error 2
266	A6		Outdoor unit heat exchanger temperature error
267	A7		Suction temperature abnormal
268	A8		Poor refrigerant circulation
269	A9		Current overload error
270	AA		Outdoor unit special operation error
271	AC		Ambient temperature error
272	AF		Out of the possible operation range
273	AJ		Freeze protection operated
277	C1		Peripheral unit main PCB error
278	C2		Peripheral unit transmission PCB error
279	C3		Peripheral unit PCB 1 error
280	C4		PCB 2 error
281	C5		PCB 3 error
282	C6		PCB 4 error
283	C7		PCB 5 error
284	C8		Peripheral unit input device error
285	C9		Display device error
286	CA		EEPROM error
287	CC		Peripheral unit sensor error
288	CF		Peripheral unit external connector error (USB memory)
289	CJ		Other parts error
293	F1		System tool software error
294	F2		System tool adaptor error
295	F3		System tool interface error
296	F4		System tool environment error
309	J1		RB unit error
310	J2		Branch boxes error
311	J3		Total heat exchanging, ventilation unit error
312	J4		Domestic hot water unit error
313	J5		Zone control interface error

10.3. VRF V/S/J Series Error Codes

Error code	Error in the RC	System	Error description
0	0	**VRF** V / S / J Series	No Error
2	2		Model information Error
4	4		Power frequency Error
6	6		EEPROM access Error
7	7		EEPROM deletion Error
9	9		Room sensor Error
10	0A		Heat Ex. Middle Sensor Error
11	0b		Heat Ex. Inlet sensor Error
12	0C		Heat Ex. Outlet sensor Error
13	0d		Blower temperature thermistor Error
17	11		Drain Error
18	12		Room temperature Error
19	13		Indoor fan motor Error
20	18		Standard wired remote Error
			Standard wired token Error
31	1F		Network communication Error
32	20		Node setting error
33	21		Communication Error between Main PCB & Transmission PCB
34	32		Outdoor unit Error

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