# BACnet® Gateway for VRF System

UTY-VBGX

INSTRUCTION MANUAL

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Gateway for the integration of Fujitsu air conditioning systems in BACnet®/IP enabled monitoring and control systems.

**Order Code**:

**UTY-VBGX**
Model supporting up to 128 indoor units.

# INDEX

# 1 Description

## 1.1 *Introduction*

This document describes the integration of Fujitsu VRF air conditioning systems into BACnet® compatible devices and systems using the BACnet® Gateway for VRF System.

The aim of this integration is to monitor and control your Fujitsu VRF air conditioning system, remotely, from your Control Center using any commercial SCADA or monitoring software that includes a BACnet®/IP driver. To do it so, the BACnet® Gateway for VRF System allows BACnet®/IP communication, acting as a server, allowing polling or subscription requests (COV).

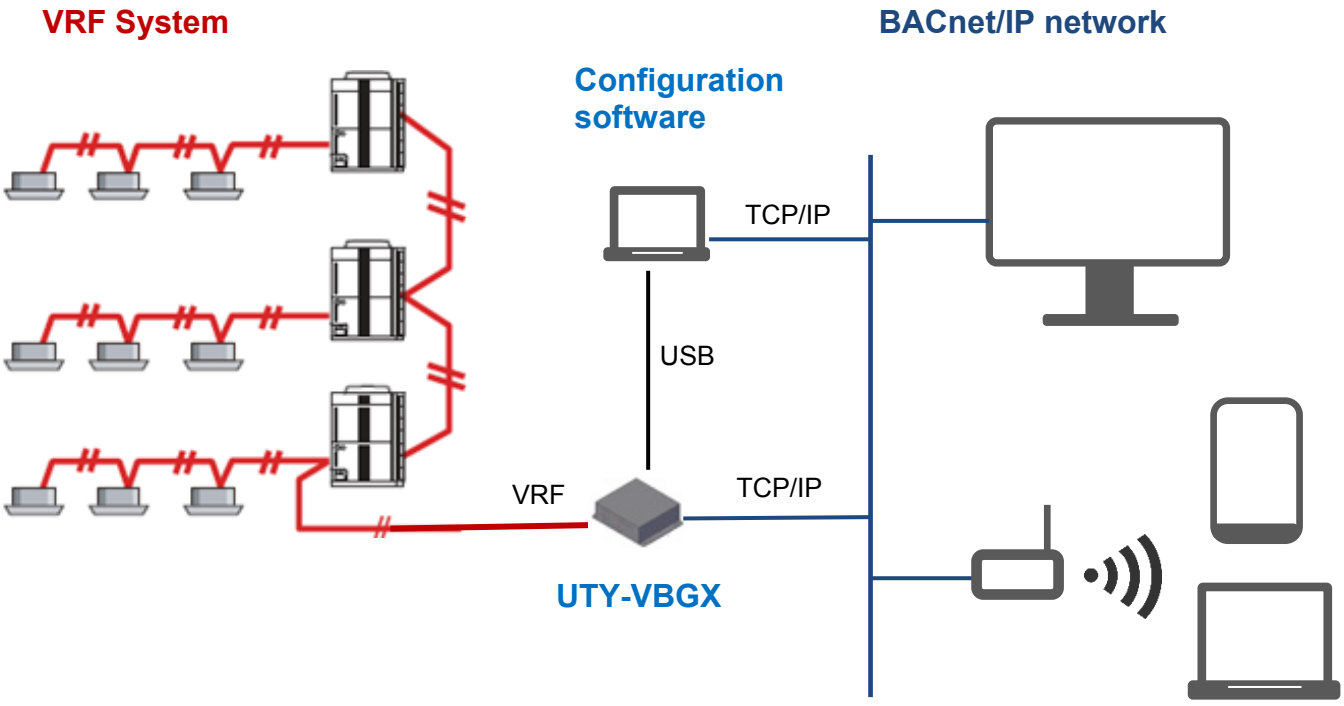
The BACnet® Gateway for VRF System makes available the Fujitsu air conditioning system indoor and outdoor units and its abstraction of Fujitsu air conditioning system properties and functionalities as fixed and independent BACnet® Objects.

Simple configuration is needed: just select the appropriate communication parameters.

Up to 128 indoor units supported.

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

Note: The 2 types of BACnet Gateway, UTY-ABGX and UTY-VBGX may not coexist within a VRF system.



## 1.2 *Functionality*

The gateway continuously polls (reads) the VRF network for all configured signals and keeps the updated status of all of them in its memory, ready to be served when requested from the BACnet® side.

The role of the gateway consists in associate the elements of the FGL indoor and outdoor units with BACnet® objects.

The control of the indoor and outdoor units through the FGL bus is permitted, so commands toward the FGL indoor and outdoor units are allowed.

Each indoor and outdoor unit is offered in a set of BACnet® objects.

| Element | Object supported |
|---|---|
| Gateway | • Status<br>• Command<br>• Error |
| Indoor Unit | • Status<br>• Command<br>• Error |
| Outdoor Unit | • Status<br>• Command<br>• Error |

## 1.3 *Capacity of UTY-VBGX*

| Element | Max. | Notes |
|---|---|---|
| Number of indoor units | 128 | Number of indoor units that can be controlled through UTY-VBGX |
| Number of outdoor units | 100 | Number of outdoor units that can be controlled through UTY-VBGX |
| Number of VRF systems | 1 | Number of independent VRF systems that can be controlled through UTY-VBGX |
| Number of Refrigerant systems | 32 | Number of refrigerant system that can be controlled through UTY-VBGX |
| Number of Objects | 5000 | Number of FGL control and status objects available into UTY-VBGX. |

The number of *Indoor Units* and *Outdoor Units* may vary on each project. These parameters can be configured through Configuration Tool (See section 8).

# 2 Protocol Implementation Conformance Statement

BACnet® Protocol Implementation Conformance Statement (PICS)

**Date:** *2016-12-20*
**Vendor Name:** *Fujitsu General Limited*
**Product Name:** *BACnet® Gateway for VRF*
**Product Model Number:** *UTY-VBGX*
**Application Software Version:** *1.0.0.0*
**Firmware Revision:** *1.0.0.0*
**BACnet Protocol Revision:** *12*

**Product Description:**

*BACnet® Gateway for VRF System*

## 2.1 *BACnet Standardized Device Profile (Annex L):*

- ☐ BACnet Operator Workstation (B-OWS)
- ☐ BACnet Building Controller (B-BC)
- ☐ BACnet Advanced Application Controller (B-AAC)
- ☒ BACnet Application Specific Controller (B-ASC)
- ☐ BACnet Smart Sensor (B-SS)
- ☐ BACnet Smart Actuator (B-SA)

Additional BACnet Interoperability Building Blocks Supported (Annex K):
*Reference of BIBBs List*

## 2.2 *Segmentation Capability:*

| | | | | |
|---|---|---|---|---|
| Segmented request supported | ☐ No | ☒ Yes | Window Size | *16* |
| Segmented responses supported | ☐ No | ☒ Yes | Window Size | *16* |

## 2.3 *Data Link Layer Options:*

- ☒ BACnet IP, (Annex J)
- ☒ BACnet IP, (Annex J), Foreign Device
- ☐ ISO 8802-3, Ethernet (Clause 7)
- ☐ ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ☐ ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) ____
- ☐ MS/TP master (Clause 9), baud rate(s):
- ☐ MS/TP slave (Clause 9), baud rate(s):
- ☐ Point-To-Point, EIA 232 (Clause 10), baud rate(s):
- ☐ Point-To-Point, modem, (Clause 10), baud rate(s):
- ☐ LonTalk, (Clause 11), medium: _____
- ☐ Other:

## 2.4 *Device Address Binding:*

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

## 2.5 *Networking Options:*

☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
☐ Annex H, BACnet Tunneling Router over IP
☒ BACnet/IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☒ Yes ☐ No

## 2.6 *Character Sets Supported*

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

| | | |
|---|---|---|
| ☒ ISO 10646 (UTF-8) | ☐ IBM™/Microsoft™ DBCS | ☐ ISO 8859-1 |
| ☐ ISO 10646 (UCS-2) | ☐ ISO 10646 (UCS-4) | ☐ JIS X 0208 |

## 2.7 *Gateway*

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

**Fujitsu VRF Air Conditioning Network.**

# 3 BACnet Interoperability Building Blocks Supported (BIBBs)

## 3.1 *Data Sharing BIBBs*

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

## 3.2 *Alarm and Event Management BIBBs*

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

## 3.3 *Scheduling BIBBs*

| BIBB Type | | Active | BACnet Service | Initiate | Execute |
|---|---|---|---|---|---|
| SCHED-A | Scheduling–A<br>*(must support DS-RP-A and DS-WP-A)* | ☐ | | | |
| SCHED-I-B | Scheduling-Internal–B<br>*(shall support DS-RP-B and DS-WP-B)*<br>*(shall also support ether DM-TS-B or DS-UTC-B)* | ☐ | | | |
| SCHED-E-B | Scheduling-External–B<br>*(shall support SCHED-I-B and DS-WP-A)* | ☐ | | | |

## 3.4 *Trending BIBBs*

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

## 3.5 *Network Management BIBBs*

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

## 3.6 *Device Management BIBBs*

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

# 4 Service Types

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

# 5 Objects

## 5.1 *Supported Object Types*

The objects supported are shown in the table below.

| Object Type | ID | Supported | Management Point |
|---|---|---|---|
| Analog-Input | 0 | ☒ | IU_rr_uu_SetTemp_Status<br>IU_rr_uu_SpaceTemp_Status<br>IU_rr_uu_AutoTempLoLim_Status<br>IU_rr_uu_AutoTempHiLim_Status<br>IU_rr_uu_CoolTempLoLim_Status<br>IU_rr_uu_CoolTempHiLim_Status<br>IU_rr_uu_HeatTempLoLim_Status<br>IU_rr_uu_HeatTempHiLim_Status |
| Analog-Output | 1 | ☒ | Batch_SetTemp_Setting<br>IU_rr_uu_SetTemp_Setting<br>IU_rr_uu_AutoTempLoLim_Setting<br>IU_rr_uu_AutoTempHiLim_Setting<br>IU_rr_uu_CoolTempLoLim_Setting<br>IU_rr_uu_CoolTempHiLim_Setting<br>IU_rr_uu_HeatTempLoLim_Setting<br>IU_rr_uu_HeatTempHiLim_Setting |
| Analog-Value | 2 | ☐ | |
| Averaging | 18 | ☐ | |
| Binary-Input | 3 | ☒ | Gateway_ES_Status<br>Gateway_Error_Status<br>IU_rr_uu_Exists_Status<br>IU_rr_uu_Operation_Status<br>IU_rr_uu_ThermostatOFF_Status<br>IU_rr_uu_FilterSign_Status<br>IU_rr_uu_Emergency_Status<br>IU_rr_uu_Error_Status<br>IU_rr_uu_TempLimValid_Status<br>OU_rr_uu_Error_Status<br>OU_rr_uu_ForcedOff_Status |
| Binary-Output | 4 | ☒ | Gateway_ES_Setting<br>Batch_Operation_Setting<br>IU_rr_uu_Operation_Setting<br>IU_rr_uu_ThermostatOFF_Setting<br>IU_rr_uu_Reset_Filter_Setting<br>IU_rr_uu_TempLimValid_Setting<br>OU_rr_uu_ForcedOff_Setting |
| Binary-Value | 5 | ☐ | |
| Calendar | 6 | ☐ | |
| Command | 7 | ☐ | |
| Device | 8 | ☒ | UTY-VBGX |
| Event-Enrollment | 9 | ☐ | |
| File | 10 | ☐ | |
| Group | 11 | ☐ | |
| Life-Safety-Point | 21 | ☐ | |
| Life-Safety-Zone | 22 | ☐ | |
| Loop | 12 | ☐ | |
| Multistate-Input | 13 | ☒ | Gateway_ErrorCode_Status<br>IU_rr_uu_OperationMode_Status<br>IU_rr_uu_FanSpeed_Status<br>IU_rr_uu_AirFlowDirVT_Status<br>IU_rr_uu_AirFlowDirHZ_Status<br>IU_rr_uu_RC_Prohibit_Status<br>IU_rr_uu_ErrorCode_Status |

| | | | |
|---|---|---|---|
| | | | OU_rr_uu_ErrorCode_Status<br>OU_rr_uu_CapacitySave_Status<br>OU_rr_uu_LowNoiseOp_Status |
| Multistate-Output | 14 | ☒ | Batch_OperationMode_Setting<br>Batch_FanSpeed_Setting<br>Batch_RC_Prohibition_Setting<br>IU_rr_uu_OperationMode_Setting<br>IU_rr_uu_FanSpeed_Setting<br>IU_rr_uu_AirFlowDirVT_Setting<br>IU_rr_uu_AirFlowDirHZ_Setting<br>IU_rr_uu_RC_Prohibit_Setting<br>OU_rr_uu_LowNoiseOp_Setting<br>OU_rr_uu_CapacitySave_Setting |
| Multistate-Value | 19 | ☐ | |
| Notification-Class | 15 | ☒ | NotificationClass_x |
| Program | 16 | ☐ | |
| Schedule | 17 | ☐ | |
| Trend-Log | 20 | ☐ | |

## 5.2 *Member objects*

### 5.2.1 Type: Gateway

| Object-name | Description | Object-type | Object-instance |
|---|---|---|---|
| UTY-VBGX | BACnet Gateway for VRF System | Device | 144 |
| Gateway_ES_Status | - | BI | 0 |
| Gateway_Error_Status | - | BI | 1 |
| Gateway_ES_Setting | - | BO | 0 |
| Gateway_ErrorCode_Status | - | MI | 0 |

### 5.2.2 Type: Batch objects

| Object-name | Object-type | Object-instance |
|---|---|---|
| Batch_SetTemp_Setting | AO | 0 |
| Batch_Operation_Setting | BO | 1 |
| Batch_OperationMode_Setting | MO | 0 |
| Batch_FanSpeed_Setting | MO | 1 |
| Batch_RC_Prohibition_Setting | MO | 2 |

### 5.2.3 Type: Indoor Unit

| Object-name | Object-type | Object-instance |
|---|---|---|
| IU_rr_uu_SetTemp_Status | AI | 10rruu |
| IU_rr_uu_SpaceTemp_Status | AI | 11rruu |
| IU_rr_uu_AutoTempLoLim_Status | AI | 12rruu |
| IU_rr_uu_AutoTempHiLim_Status | AI | 13rruu |
| IU_rr_uu_CoolTempLoLim_Status | AI | 14rruu |
| IU_rr_uu_CoolTempHiLim_Status | AI | 15rruu |
| IU_rr_uu_HeatTempLoLim_Status | AI | 16rruu |
| IU_rr_uu_HeatTempHiLim_Status | AI | 17rruu |
| IU_rr_uu_SetTemp_Setting | AO | 10rruu |
| IU_rr_uu_AutoTempLoLim_Setting | AO | 11rruu |
| IU_rr_uu_AutoTempHiLim_Setting | AO | 12rruu |
| IU_rr_uu_CoolTempLoLim_Setting | AO | 13rruu |
| IU_rr_uu_CoolTempHiLim_Setting | AO | 14rruu |
| IU_rr_uu_HeatTempLoLim_Setting | AO | 15rruu |
| IU_rr_uu_HeatTempHiLim_Setting | AO | 16rruu |
| IU_rr_uu_Exists_Status | BI | 10rruu |
| IU_rr_uu_Operation_Status | BI | 11rruu |
| IU_rr_uu_ThermostatOFF_Status | BI | 12rruu |
| IU_rr_uu_FilterSign_Status | BI | 13rruu |
| IU_rr_uu_Emergency_Status | BI | 14rruu |
| IU_rr_uu_Error_Status | BI | 15rruu |
| IU_rr_uu_TempLimValid_Status | BI | 16rruu |
| IU_rr_uu_Operation_Setting | BO | 10rruu |
| IU_rr_uu_ThermostatOFF_Setting | BO | 11rruu |
| IU_rr_uu_Reset_Filter_Setting | BO | 12rruu |
| IU_rr_uu_TempLimValid_Setting | BO | 13rruu |
| IU_rr_uu_OperationMode_Status | MI | 10rruu |
| IU_rr_uu_FanSpeed_Status | MI | 11rruu |

| | | |
|---|---|---|
| IU_rr_uu_AirFlowDirVT_Status | MI | 12rruu |
| IU_rr_uu_AirFlowDirHZ_Status | MI | 13rruu |
| IU_rr_uu_RC_Prohibit_Status | MI | 14rruu |
| IU_rr_uu_ErrorCode_Status | MI | 15rruu |
| IU_rr_uu_OperationMode_Setting | MO | 10rruu |
| IU_rr_uu_FanSpeed_Setting | MO | 11rruu |
| IU_rr_uu_AirFlowDirVT_Setting | MO | 12rruu |
| IU_rr_uu_AirFlowDirHZ_Setting | MO | 13rruu |
| IU_rr_uu_RC_Prohibit_Setting | MO | 14rruu |

### 5.2.4 Type: Outdoor Unit

| Object-name | Object-type | Object-instance |
|---|---|---|
| OU_rr_uu_Error_Status | BI | 30rruu |
| OU_rr_uu_ForcedOff_Status | BI | 31rruu |
| OU_rr_uu_ForcedOff_Setting | BO | 30rruu |
| OU_rr_uu_ErrorCode_Status | MI | 31rruu |
| OU_rr_uu_CapacitySave_Status | MI | 32rruu |
| OU_rr_uu_LowNoiseOp_Status | MI | 33rruu |
| OU_rr_uu_LowNoiseOp_Setting | MO | 30rruu |
| OU_rr_uu_CapacitySave_Setting | MO | 32rruu |

## 5.3 *Objects and properties*

Below you can find relevant information for the objects and properties.

**Object_Identifier:** In the **Device Object**, the value of object instance is configurable through Configuration Tool. See Table 5.1 to obtain the name of each object.

| Variable | Description |
|---|---|
| "rr" | Refrigerant Address (0..99) |
| "uu" | Outdoor Unit address (0..3) |
| | Indoor Unit address (0..63) |

**Table 5.1** Objects and properties variables and descriptions

**Object_Name:** In the **Device Object**, this string is configurable through Configuration Tool. See Table 5.1 to obtain the name of each object.

**Description:** In the **Device Object**, this string is configurable through Configuration Tool. See Table 5.1 to obtain the description of each object.

**Relinquish_Default:** In **Binary Outputs**, **Multistate Outputs** and **Multistate Values**, the value of *Present_Value* property will be read.

**Priority_Array:** In **Binary Outputs**, **Multistate Outputs** and **Multistate Values**, *Priority_Array[16]* will acquire the value of *Present_Value* property and *Priority_Array[1]~[15]* will be NULL.

**State_Text:** In **Multistate Outputs**, **Multistate Outputs** and **Multistate Values**, it cannot be read the whole array at once, so “Array Index” must be specified in order to obtain the text of the corresponding state.

**IMPORTANT**

1. **Write the Present_Value of each object in accordance with the limitation of the actual unit to be controlled. If the value that are not within the permissible value of the corresponding unit is written, BACnet Gateway assumes no guarantee on the actual operation of the unit. The range of values specified for objects in this manual, does not reflect the limitation of various types of units that are supported by this product. Refer to the manual of each unit, or other technical documents provided for each product line-ups, for the permissible values of each unit.**
2. **All control signals such as Operation Mode Setting, Temperature Setting and FAN Speed Setting are accepted when indoor unit is "ON".**

### 5.3.1 Fujitsu AC Gateway (Device Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Device, 144) | R | R |
| Object_Name | CharacterString | "Device UTY-VBGX" | R | R |
| Object_Type | BACnetObjectType | DEVICE (8) (Device Object Type) | R | R |
| System_Status | BACnetDeviceStatus | OPERATIONAL (0) | R | R |
| Vendor_Name | CharacterString | "Fujitsu General Limited" | R | R |
| Vendor_Identifier | Unsigned16 | 144 | R | R |
| Model_Name | CharacterString | "UTY-VBGX" | 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 | “BACnet Gateway for VRF System" | O | - |
| Protocol_Version | Unsigned | 1 | R | R |
| Protocol_Revision | Unsigned | 12 | R | R |
| Protocol_Services_Supported | BACnetServiceSupported | Refer to section 4 [Service Types]. | R | R |
| Protocol_Object_Types_Supported | BACnetObjectTypes Supported | Refer to section 5.1 [Object Types]. | R | R |
| Object_List | BACnetArray[N] of BACnetObjectIdentifier | BACnetARRAY[N] | R | R |
| Structured_Object_List | BACnetArray[N] of BACnetObjectIdentifier | - | O | - |
| Max_APDU_Length_Accepted | Unsigned | 1476 | 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 | Current date | O | R |
| Local_Time | Time | Current time | O | R |
| UTC_Offset | INTEGER | - | O | - |
| Daylight_Savings_Status | BOOLEAN | - | O | - |
| APDU_Segment_Timeout | Unsigned | 3000 | R | R |
| APDU_Timeout | Unsigned | 3000 | R | R |
| Number_of_APDU_Retries | Unsigned | 3 | R | R |
| List_Of_Session_Keys | List of BACnetSessionKey | - | O | - |
| Time_Synchronization_Recipients | List of BACnetRecipient | - | O | - |
| Device_Address_Binding | List of BACnetAddressBinding | NULL (empty) | R | R |

| | | | | |
|---|---|---|---|---|
| Database_Revision | Unsigned | 4294967295 | 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 | - |

### 5.3.2 Gateway_ES_Status (Binary Input Object Type)

The current Energy Saving status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 0) | R | R |
| Object_Name | CharacterString | “Gateway_ES_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 | "Not used" | O | R |
| Active_Text | CharacterString | “Energy Saving” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.3 Gateway_ES_Setting (Binary Output Object Type)

The current Energy Saving status can be set.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 0) | R | R |
| Object_Name | CharacterString | “Gateway_ES_Setting” | 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 | "Not Used" | O | R |
| Active_Text | CharacterString | “Energy Saving" | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.4 Gateway_Error_Status (Binary Input Object Type)

The normal and error statuses of the Gateway can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 1) | R | R |
| Object_Name | CharacterString | “Gateway_Error_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 | "Normal" | O | R |
| Active_Text | CharacterString | “Abnormal” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.5 Gateway_ErrorCode_Status (Multistate Input Object Type)

The error code when a Gateway error occurs can be checked.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 0) | R | R |
| Object_Name | CharacterString | “Gateway_ErrorCode_Status” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | 1 ~ 3 | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 3 | R | R |
| State_Text | BACnetArray[N] of CharacterString | - | O | - |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Gateway Error Code table

Gateway Error Code can be interpreted using the values in the following correspondence table.

| Pesent_Value | Description |
|---|---|
| 1 | No Error |
| 2 | Hardware Error |
| 3 | No Configuration Present |

### 5.3.6 Batch_SetTemp_Setting (Analog Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 0) | R | R |
| Object_Name | CharacterString | “Batch_SetTemp_Setting” | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | **V-II/J-II/VR-II Series**<br>10 ~ 30(°C) // 48 ~ 88(°F) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 1 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | x | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.7 Batch_Operation_Setting (Binary Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 1) | R | R |
| Object_Name | CharacterString | “Batch_Operation_Setting” | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | "Off" | O | R |
| Active_Text | CharacterString | “On" | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.8 Batch_OperationMode_Setting (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 0) | R | R |
| Object_Name | CharacterString | “Batch_OperationMode_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 5 | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 5 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Operation Mode settings** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Operation Mode settings table

Mode commands can be set using the values in the following correspondence table.

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

### 5.3.9 Batch_FanSpeed_Setting (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 1) | R | R |
| Object_Name | CharacterString | “Batch_FanSpeed_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 7 | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 7 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Fan Speed settings** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Fan Speed settings table

Fan Speed commands can be set using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Low |
| 2 | High |
| 3 | Med |
| 4 | Auto |

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 5 | Quiet |
| 6 | Med-Low |
| 7 | Med-High |
| | |

### 5.3.10 Batch_RC_Prohibition_Setting (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 2) | R | R |
| Object_Name | CharacterString | “Batch_RC_Prohibition_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 65 | 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 | 65 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **RC Prohibition table*** (section 12.2) | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.11 IU_rr_uu_SetTemp_Status (Analog Input Object Type)

Indoor unit temperature setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, 10rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_SetTemp_Status” | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | **V-II/J-II/VR-II Series**<br>10 ~ 30(°C) // 48 ~ 88(°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),<br>UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) / Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.12 IU_rr_uu_SpaceTemp_Status (Analog Input Object Type)

Indoor unit surrounding temperature status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, 11rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_SpaceTemp_Status” | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | **V-II/J-II/VR-II Series**<br>Suction Temperature is obtained. | 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),<br>UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.13 IU_rr_uu_AutoTempLoLim_Status (Analog Input Object Type)

The indoor unit temperature lower limit values status when Auto Mode is active can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, 12rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_AutoTempLoLim_Status” | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | 18 ~ 30(°C) // 64 ~ 88(°F) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.14 IU_rr_uu_AutoTempHiLim_Status (Analog Input Object Type)

The indoor unit temperature upper limit values status when Auto Mode is active can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, 13rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_AutoTempHiLim_Status” | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | 18 ~ 30(°C) // 64 ~ 88(°F) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.15 IU_rr_uu_CoolTempLoLim_Status (Analog Input Object Type)

The indoor unit temperature lower limit values status when Cool Mode is active can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, 14rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_CoolTempLoLim_Status” | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | 18 ~ 30(°C) // 64 ~ 88(°F) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.16 IU_rr_uu_CoolTempHiLim_Status (Analog Input Object Type)

The indoor unit temperature upper limit values status when Cool Mode is active can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, 15rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_CoolTempHiLim_Status” | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | 18 ~ 30(°C) // 64 ~ 88(°F) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.17 IU_rr_uu_HeatTempLoLim_Status (Analog Input Object Type)

The indoor unit temperature lower limit values status when Heat Mode is active can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, 16rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_HeatTempLoLim_Status” | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | 10 ~ 30(°C) // 48 ~ 88(°F) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.18 IU_rr_uu_HeatTempHiLim_Status (Analog Input Object Type)

The indoor unit temperature upper limit values status when Heat Mode is active can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Input, 17rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_HeatTempHiLim_Status” | R | R |
| Object_Type | BACnetObjectType | ANALOG_INPUT (0) | R | R |
| Present_Value | REAL | 10 ~ 30(°C) // 48 ~ 88(°F) | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured.

### 5.3.19 IU_rr_uu_SetTemp_Setting (Analog Output Object Type)

Set temperature can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 10rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_SetTemp_Setting” | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | **V-II/J-II/VR-II Series**<br>10 ~ 30(°C) // 48 ~ 88(°F) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | - | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

***Notes on the set temperature value***

A set point entered from the BMS must be taken from the Celsius column in the following table. Any entered values not from the table will be ignored, rounded or translated to other values.

A. Halcyon System through the single network convertor

Cool/Dry/Auto : 18-30degC (64-88 degF)
Heat : 16-30 degC (60-88 degF)
Setting the value exceeding the upper lor lower limit of the unit will be rounded to the nearest limit.

| If Fahrenheit units are used, the remote controller will display the following: | Centigrade | If Fahrenheit units are used, the remote controller will display the following: | Centigrade |
|---|---|---|---|
| 60 | 16 | 64 | 18 |
| 62 | 17 | 66 | 19 |
| | | 68 | 20 |
| | | 70 | 21 |
| | | 72 | 22 |
| | | 74 | 23 |
| | | 76 | 24 |
| | | 78 | 25 |
| | | 80 | 26 |
| | | 82 | 27 |
| | | 84 | 28 |
| | | 86 | 29 |
| | | 88 | 30 |

B. Airstage VRF System

Setting the value exceeding the upper or lower value limit of the unit will be rounded to the nearest limit.
V-II/J-II/VR-II/J-IIS Series: Value obtained by scanning

| If Fahrenheit units are used, the remote controller will display the following: | Centigrade | If Fahrenheit units are used, the remote controller will display the following: | Centigrade |
|---|---|---|---|
| 48 | 10 | 64 | 18 |
| 49 | 10.5 | 65 | 18.5 |
| 50 | 11 | 66 | 19 |
| 51 | 11.5 | 67 | 19.5 |
| 52 | 12 | 68 | 20 |
| 53 | 12.5 | 69 | 20.5 |
| 54 | 13 | 70 | 21 |
| 55 | 13.5 | 71 | 21.5 |
| 56 | 14 | 72 | 22 |
| 57 | 14.5 | 73 | 22.5 |
| 58 | 15 | 74 | 23 |
| 59 | 15.5 | 75 | 23.5 |
| 60 | 16 | 76 | 24 |
| 61 | 16.5 | 77 | 24.5 |
| 62 | 17 | 78 | 25 |
| 63 | 17.5 | 79 | 25.5 |
| | | 80 | 26 |
| | | 81 | 26.5 |
| | | 82 | 27 |
| | | 83 | 27.5 |
| | | 84 | 28 |
| | | 85 | 28.5 |
| | | 86 | 29 |
| | | 87 | 29.5 |
| | | 88 | 30 |

### 5.3.20 IU_rr_uu_AutoTempLoLim_Setting (Analog Output Object Type)

Set temperature lower limit values when Auto Mode is active can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 11rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_AutoTempLoLim_Setting” | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | 18 ~ 30(°C) // 64 ~ 88(°F) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | x | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.21 IU_rr_uu_AutoTempHiLim_Setting (Analog Output Object Type)

Set temperature upper limit values when Auto Mode is active can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 12rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_AutoTempHiLim_Setting” | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | 18 ~ 30(°C) // 64 ~ 88(°F) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | x | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.22 IU_rr_uu_CoolTempLoLim_Setting (Analog Output Object Type)

Set temperature lower limit values when Cool Mode is active can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 13rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_CoolTempLoLim_Setting” | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | 18 ~ 30(°C) // 64 ~ 88(°F) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | x | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured.

### 5.3.23 IU_rr_uu_CoolTempHiLim_Setting (Analog Output Object Type)

Set temperature upper limit values when Cool Mode is active can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 14rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_CoolTempHiLim_Setting” | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | 18~ 30(°C) // 64 ~ 88(°F) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | x | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.24 IU_rr_uu_HeatTempLoLim_Setting (Analog Output Object Type)

Set temperature lower limit values when Heat Mode is active can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 15rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_HeatTempLoLim_Setting” | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | 10 ~ 30(°C) // 48 ~ 88(°F) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | x | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.25 IU_rr_uu_HeatTempHiLim_Setting (Analog Output Object Type)

Set temperature upper limit values when Heat Mode is active can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Analog Output, 16rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_HeatTempHiLim_Setting” | R | R |
| Object_Type | BACnetObjectType | ANALOG_OUTPUT (1) | R | R |
| Present_Value | REAL | 10 ~ 30(°C) // 48 ~ 88(°F) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Update_Interval | Unsigned | - | O | - |
| Units | BACnetEngineeringUnits | Degrees Celsius (62) // Fahrenheit (64) | R | R |
| Min_Pres_Value | REAL | - | O | - |
| Max_Pres_Value | REAL | - | O | - |
| Resolution | REAL | - | O | - |
| COV_Increment | REAL | 0 | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | x | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| High_Limit | REAL | - | O | R* |
| Low_Limit | REAL | - | O | R* |
| Deadband | REAL | - | O | R* |
| Limit_Enable | BACnetLimitEnable | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.26 IU_rr_uu_Exists_Status (Binary Input Object Type)

Check the presence of the specified indoor units in the AC system.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 10rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_Exists_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 | "Not Exists" | O | R |
| Active_Text | CharacterString | “Exists” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.27 IU_rr_uu_Operation_Status (Binary Input Object Type)

Indoor unit operation ON/OFF setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 11rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_Operation_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 | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.28 IU_rr_uu_ThermostatOFF_Status (Binary Input Object Type)

Indoor unit forced thermostat OFF setting status can be monitored

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 12rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_ThermostatOFF_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 | "Reset" | O | R |
| Active_Text | CharacterString | “Set” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.29 IU_rr_uu_FilterSign_Status (Binary Input Object Type)

Indoor unit filter sign status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 13rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_FilterSign_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 | "Unsigned" | O | R |
| Active_Text | CharacterString | “Signed” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.30 IU_rr_uu_Emergency_Status (Binary Input Object Type)

Indoor unit emergency stop operation status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 14rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_Emergency_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 | "Normal" | O | R |
| Active_Text | CharacterString | “Stop” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.31 IU_rr_uu_Error_Status (Binary Input Object Type)

The normal and error statuses of indoor unit can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 15rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_Error_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 | "Normal" | O | R |
| Active_Text | CharacterString | “Fault” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.32 IU_rr_uu_TempLimValid_Status (Binary Input Object Type)

Indoor unit set temperature upper and lower limit values valid/invalid setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 16rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_TempLimValid_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 | "Invalid" | O | R |
| Active_Text | CharacterString | “Valid” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.33 IU_rr_uu_Operation_Setting (Binary Output Object Type)

Operation ON/OFF can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 10rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_Operation_Setting” | R | R |
| Object_Type | BACnetObjectType | BINARY_OUTPUT (4) | R | R |
| Present_Value | BACnetBinaryPV | INACTIVE (0) / ACTIVE (1) | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Polarity | BACnetPolarity | NORMAL (0) | R | R |
| Inactive_Text | CharacterString | "Off" | O | R |
| Active_Text | CharacterString | “On" | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.34 IU_rr_uu_ThermostatOFF_Setting (Binary Output Object Type)

Forced thermostat OFF operation setting can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 11rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_ThermostatOFF_Setting” | 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 | "Reset" | O | R |
| Active_Text | CharacterString | “Set" | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.35 IU_rr_uu_Reset_Filter_Setting (Binary Output Object Type)

Filter sign reset can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 12rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_Reset_Filter_Setting” | 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 | "Reset" | O | R |
| Active_Text | CharacterString | “Not Reset" | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.36 IU_rr_uu_TempLimValid_Setting (Binary Output Object Type)

Temperature upper and lower limit setting valid/invalid setting can be commanded for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 13rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_TempLimValid_Setting” | 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 | "Invalid" | O | R |
| Active_Text | CharacterString | “Valid" | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.37 IU_rr_uu_OperationMode_Status (Multistate Input Object Type)

Indoor unit operation mode setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 10rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_OperationMode_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 **Operation Mode status** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Operation Mode status table

Mode status can be read using the values in the following correspondence table.

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

### 5.3.38 IU_rr_uu_FanSpeed_Status (Multistate Input Object Type)

Indoor unit air flow setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 11rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_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 | R | R |
| Number_Of_States | Unsigned | 7 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Fan Speed status** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Fan Speed status table

Fan speed status can be read using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Low |
| 2 | High |
| 3 | Med |
| 4 | Auto |

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 5 | Quiet |
| 6 | Med-Low |
| 7 | Med-High |
| | |

### 5.3.39 IU_rr_uu_AirFlowDirVT_Status (Multistate Input Object Type)

Indoor unit vertical air flow position setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 12rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_AirFlowDirVT_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 **Air Flow Dir VT status** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Air Flow Dir VT status table

Vertial Air Flow direction status can be red using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | Swing |

### 5.3.40 IU_rr_uu_AirFlowDirHZ_Status (Multistate Input Object Type)

Indoor unit horizontal air flow position setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 13rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_AirFlowDirHZ_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 | R | R |
| Number_Of_States | Unsigned | 6 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Air Flow Dir HZ status** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Air Flow Dir HZ status table

Horizontal Air Flow Direction status can be read using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | Swing |

### 5.3.41 IU_rr_uu_RC_Prohibit_Status (Multistate Input Object Type)

Indoor unit remote controller prohibition setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 14rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_RC_Prohibit_Status” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | 1 ~ 65 | 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 | 65 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **RC Prohibition table*** (section 12.2) | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.42 IU_rr_uu_ErrorCode_Status (Multistate Input Object Type)

The error code when an indoor unit error occurs can be checked.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 15rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_ErrorCode_Status” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | 1 ~ 255 | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0),<br>UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | **Indoor Unit**<br>V-II/J-II/VR-II Series:118<br>**Outdoor Unit**<br>V-II/J-II/VR-II Series:118 | R | R |
| State_Text | BACnetArray[N] of CharacterString | - | O | - |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

**NOTE:** For the error content, refer to the “Error content table” using the Present_Value of the appropriate series. Error contents may be added without prior notice.

### 5.3.43 IU_rr_uu_OperationMode_Setting (Multistate Output Object Type)

Operation mode can be set for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 10rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_OperationMode_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 5 | W | W |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 5 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Operation Mode settings** below* | O | R |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | Unsigned | 1 | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | Unsigned | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Operation Mode settings table

Mode commands can be set using the values in the following correspondence table.

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

### 5.3.44 IU_rr_uu_FanSpeed_Setting (Multistate Output Object Type)

Air flow can be set for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 11rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_FanSpeed_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 7 | W | W |
| Description | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 7 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Fan Speed settings** below* | O | R |
| Priority_Array | BACnetPriorityArray | - | R | R |
| Relinquish_Default | Unsigned | - | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | Unsigned | - | O | R* |
| Fault_Values | Unsigned | | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Fan Speed settings table

Fan speed commands can be set using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Low |
| 2 | High |
| 3 | Med |
| 4 | Auto |

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 5 | Quiet |
| 6 | Med-Low |
| 7 | Med-High |
| | |

### 5.3.45 IU_rr_uu_AitFlowDirVT_Setting (Multistate Output Object Type)

Vertical air flow direction position can be set for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 12rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_AirFlowDirVT_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 5 | W | W |
| Description | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 5 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Air Flow Dir VT setttings** below* | O | R |
| Priority_Array | BACnetPriorityArray | - | R | R |
| Relinquish_Default | Unsigned | - | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | Unsigned | - | O | R* |
| Fault_Values | Unsigned | | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Air Flow Dir VT settings table

Vertial Air Flow Direction commands can be set using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | Swing |

### 5.3.46 IU_rr_uu_AirFlowDirHZ_Setting (Multistate Output Object Type)

Horizontal air flow direction position can be set for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 13rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_AirFlowDirHZ_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 6 | W | W |
| Description | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 6 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Air Flow Dir HZ settings** below* | O | R |
| Priority_Array | BACnetPriorityArray | - | R | R |
| Relinquish_Default | Unsigned | - | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | Unsigned | - | O | R* |
| Fault_Values | Unsigned | | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Air Flow Dir HZ settings table

Horizontal Air Flow Direction commands can be set using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | Swing |

### 5.3.47 IU_rr_uu_RC_Prohibit_Setting (Multistate Output Object Type)

Remote controller prohibition can be set for indoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 14rruu) | R | R |
| Object_Name | CharacterString | “IU_rr_uu_RC_Prohibit_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 65 | W | W |
| Description | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 65 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **RC Prohibition table*** (section 12.2) | O | R |
| Priority_Array | BACnetPriorityArray | - | R | R |
| Relinquish_Default | Unsigned | - | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | Unsigned | - | O | R* |
| Fault_Values | Unsigned | | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.48 OU_rr_uu_Error_Status (Binary Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 30rruu) | R | R |
| Object_Name | CharacterString | “OU_rr_uu_Error_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 | "Normal" | O | R |
| Active_Text | CharacterString | “Fault” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.49 OU_rr_uu_ErrorCode_Status (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 31rruu) | R | R |
| Object_Name | CharacterString | “OU_rr_uu_ErrorCode_Status” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | 1 ~ 255 | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 255 | R | R |
| State_Text | BACnetArray[N] of CharacterString | - | O | - |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

You can check the error codes for each AC system on section ***Error codes*** (section 12.1)

### 5.3.50 OU_rr_uu_ForcedOff_Status (Binary Input Object Type)

Outdoor unit forced stop setting status can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Input, 31rruu) | R | R |
| Object_Name | CharacterString | “OU_rr_uu_ForcedOff_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 | "Reset" | O | R |
| Active_Text | CharacterString | “Set” | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Value | BACnetBinaryPV | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

### 5.3.51 OU_rr_uu_CapacitySave_Status (Multistate Input Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 32rruu) | R | R |
| Object_Name | CharacterString | “OU_rr_uu_CapacitySave_Status” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | 1 ~ 8 | R | R |
| Description | CharacterString | - | O | - |
| Device_Type | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE/TRUE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0), UNRELIABLE_OTHER (7) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 8 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Capacity Save status** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Capacity Save status table

Capacity Save status can be read using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Not set |
| 2 | 100% |
| 3 | 90% |
| 4 | 80% |

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 5 | 70% |
| 6 | 60% |
| 7 | 50% |
| 8 | 40% |

### 5.3.52 OU_rr_uu_CapacitySave_Setting (Multistate Output Object Type)

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 32rruu) | R | R |
| Object_Name | CharacterString | “OU_rr_uu_CapacitySave_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 8 | W | W |
| Description | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 8 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Capacity Save setting** below* | O | R |
| Priority_Array | BACnetPriorityArray | - | R | R |
| Relinquish_Default | Unsigned | - | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | Unsigned | - | O | R* |
| Fault_Values | Unsigned | | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Capacity Save setting table

Capacity Save can be set using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Not set |
| 2 | 100% |
| 3 | 90% |
| 4 | 80% |

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 5 | 70% |
| 6 | 60% |
| 7 | 50% |
| 8 | 40% |

### 5.3.53 OU_rr_uu_ForcedOff_Setting (Binary Output Object Type)

Forced stop setting can be commanded for outdoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Binary Output, 30rruu) | R | R |
| Object_Name | CharacterString | “OU_rr_uu_ForcedOff_Setting” | 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 | "Reset" | O | R |
| Active_Text | CharacterString | “Set" | O | R |
| Change_Of_State_Time | BACnetDatetime | - | O | R |
| Change_Of_State_Count | Unsigned | - | O | R |
| Time_Of_State_Count_Reset | BACnetDatetime | - | O | R |
| Elapsed_Active_Time | Unsigned | - | O | R |
| Time_Of_Active_Time_Reset | BACnetDatetime | - | O | R |
| Minimum_Off_Time | Unsigned32 | - | O | - |
| Minimum_On_Time | Unsigned32 | - | O | - |
| Priority_Array | BACnetPriorityArray | BACnetPriorityArray | R | R |
| Relinquish_Default | BACnetBinaryPV | INACTIVE (0) | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Feedback_Value | BACnetBinaryPV | - | O | W |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured.

### 5.3.54 OU_rr_uu_LowNoiseOp_Status (Multistate Input Object Type)

Low noise operation status for an outdoor unit can be monitored.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Input, 32rruu) | R | R |
| Object_Name | CharacterString | “OU_rr_uu_LowNoiseOp_Status” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_INPUT (13) | R | R |
| Present_Value | Unsigned | 1 ~ 16 | 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 | 16 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Low Noise Opeation status** below* | O | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | List of Unsigned | - | O | R* |
| Fault_Values | List of Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Low Noise Operating status table

Low Noise Operation Status can be checked using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Not Set |
| 2 | -/-/E |
| 3 | -/A/- |
| 4 | -/A/E |
| 5 | 1/-/- |
| 6 | 1/-/E |
| 7 | 1/A/- |
| 8 | 1/A/E |

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 9 | 2/-/- |
| 10 | 2/-/E |
| 11 | 2/A/- |
| 12 | 2/A/E |
| 13 | 3/-/- |
| 14 | 3/-/E |
| 15 | 3/A/- |
| 16 | 3/A/E |

A single low noise operation value of outdoor unit, represents 3 different operation values:

Lv/A/E

Lv: Low noise level (bigger value for lower noise)

A: Ability to support both low noise and air conditioning performance when performance priority is specifiedagainst low noise operation. Low noise operation will not be activated if performance priority is specified andthis value is set.

E:Simultaneously controlled through external input of outdoor unit.
If this value is set, the actual low noise operation will also depend on the external input signal connected to the outdoor unit.

### 5.3.55 OU_rr_uu_LowNoiseOp_Setting (Multistate Output Object Type)

Low noise operation can be commanded for an outdoor unit.

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Multistate Output, 30rruu) | R | R |
| Object_Name | CharacterString | “OU_rr_uu_LowNoiseOp_Setting” | R | R |
| Object_Type | BACnetObjectType | MULTISTATE_OUTPUT (14) | R | R |
| Present_Value | Unsigned | 1 ~ 7 | W | W |
| Description | CharacterString | - | O | - |
| Status_Flags | BACnetStatusFlags | {FALSE, FALSE, FALSE, FALSE} | R | R |
| Event_State | BACnetEventState | STATE_NORMAL (0) | R | R |
| Reliability | BACnetReliability | NO_FAULT_DETECTED (0) | O | R |
| Out_Of_Service | BOOLEAN | FALSE | R | R |
| Number_Of_States | Unsigned | 7 | R | R |
| State_Text | BACnetArray[N] of CharacterString | *Check **Low Noise Opeation setting** below* | O | R |
| Priority_Array | BACnetPriorityArray | - | R | R |
| Relinquish_Default | Unsigned | - | R | R |
| Time_Delay | Unsigned | - | O | R* |
| Notification_Class | Unsigned | - | O | R* |
| Alarm_Values | Unsigned | - | O | R* |
| Fault_Values | Unsigned | - | O | R* |
| Event_Enable | BACnetEventTransitionBits | - | O | R* |
| Acked_Transitions | BACnetEventTransitionBits | - | O | R* |
| Notify_Type | BACnetNotifyType | - | O | R* |
| Event_Time_Stamps | BACnetArray[N] of BACnetTimeStamp | - | O | R* |
| Profile_Name | CharacterString | - | O | - |

* Only available when specific object has a Notification Class configured

## Low Noise Operating setting table

Low Noise Operating commands can be set using the values in the following correspondence table.

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | Stop |
| 2 | Level1-Quiet |
| 3 | Level1-Ability |
| 4 | Level2-Quiet |

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 5 | Level2-Ability |
| 6 | Level3-Quiet |
| 7 | Level3-Ability |
| | |

### 5.3.56 Notification Class Object Type

| Property Identifier | Property Datatype | Value | ASHRAE | UTY-VBGX |
|---|---|---|---|---|
| Object_Identifier | BACnetObjectIdentifier | (Notification_Class, 15) | R | R |
| Object_Name | CharacterString | "NotificationClass_0" ~ "NotificationClass_9" | R | R |
| Object_Type | BACnetObjectType | NOTIFICATION_CLASS (15) | R | R |
| Description | CharacterString | - | O | - |
| Notification_Class | Unsigned | - | R | R |
| Priority | BACnetARRAY[3] of Unsigned | - | R | R |
| Ack_Required | BACnetEventTransitionBits | - | R | R |
| Recipient_List | BACnetLIST of BACnetDestination | - | R | R |
| Profile_Name | CharacterString | - | O | - |

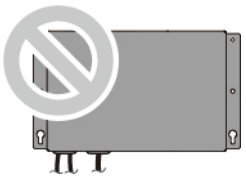
# 6 Installation

Observe the warning and caution described below, when installing the BACnet Gateway.

| ⚠ WARNING | This mark indicates procedures which, if improp- erly performed, might lead to the death or serious injury of the user. |
|---|---|
| Always use the accessories and specified installation work parts. Check the state of the installation parts. Not using the specified parts will cause units to fall off, electric shock, fire, etc. | |
| Install at a place that can withstand the weight of the unit and install positively so that the unit will not topple or fall. | |
| When installing this unit, make sure that there are no children nearby. Otherwise, injury or electric shock could result. | |
| Install a circuit breaker.<br>Otherwise, electric shock or fire could result. | |
| Avoid installing in a place where substances like sulfuric gas, chloric gas, acid or alkaline that may contaminate the devices, are generated. | |

| ⚠ CAUTION | This mark indicates procedures which, if improp- erly performed, might possibly result in personal harm to the user or damage to property. |
|---|---|
| Do not push any SW, set the DIP switch or rotary switch of this unit except as specified in this installation manual or the instruction manual supplied with the air conditioner. Setting the switches other than specified will cause an accident or trouble. | |
| Use an insulated screwdriver to set the DIP switches. | |
| Before opening the cover of this unit, completely discharge static electricity charged on your body. Otherwise, failure or malfunction could result. | |
| Do not touch the circuit board and circuit board parts directly with your hands.<br>Otherwise, injury or electric shock could result. | |
| Tightening the mounting screws too tight will damage the body of this unit. | |
| Be careful so that the cover does not fall after the cover screws are removed.<br>Otherwise, injury could result. | |

Do not install the main unit with the cables downward.



## 6.1 *Safety Precautions*

- The “SAFETY PRECAUTIONS” indicated in this manual contain importantinformation pertaining to your safety. Be sure to observe them.
- Request the user to keep this manual on hand for future use, such as forrelocating or repairing the unit.

| ⚠ WARNING |
|---|
| Each terminal marked with ⏚ shall be securely connected to grounding, not allowed to be blank |
| Perform electrical work by an authorized service personnel in accor- dance with this manual and the electrical wiring regulations or imple- mentation regulations of the country. Also do not install this unit by yourself. Improper electric work will cause electric shock or a fire. |
| Perform installation work in accordance with this manual. Request an authorized service personnel to perform installation work. Do not install this unit by yourself. Improper installation will cause injury, electric shock, fire, etc. |
| In the event of a malfunction (burning smell, etc.), immediately stop operation, turn off the electrical breaker, and consult authorized service personnel. |
| Install a leakage circuit breaker to power supply cable in accordance with the related laws and regulations and electric company standards. |
| Use a power source exclusively for this unit. Never share the power source with other electrical equipment. Doing so will cause fire and electric shock. |

| ⚠ WARNING |
|---|
| Do not install the unit in the following areas:<br>• Do not install the unit near a source of heat, steam, or flammable gas.<br>• Area filled with mineral oil or containing a large amount of splashed oil or steam, such as a kitchen. It will deteriorate plastic parts, causing the parts to fail or the unit to leak water.<br>• Area that generates substances that adversely affect the equipment, such as sulfuric gas, chlorine gas, acid, or alkali. It will cause the cop- per pipes and brazed joints to corrode, which can cause refrigerant leakage.<br>• Area containing equipment that generates electromagnetic interfer- ence. It will cause the control system to malfunction, preventing the unit from operating normally.<br>• Area that can cause combustible gas to leak, contains suspended carbon fibers or flammable dust, or volatile inflammables such as paint thinner or gasoline. If gas leaks and settles around the unit, it can cause a fire.<br>• Do not use the unit for special purposes, such as storing food, raising animals, growing plants, or preserving precision devices or art objects. It can degrade the quality of the preserved or stored objects.<br>• Install the unit in a well-ventilated place avoiding rains and direct sun- light. |
| Do not operate this unit when your hands are wet. Touching the unit with wet hands will cause an electric shock. |
| If children may approach the unit, take preventive measures so that they cannot reach the unit. |

| ⚠ CAUTION |
|---|
| Pay abundant care when transporting this unit because it is a precision device. Improper transportation will cause trouble. |
| Do not touch the switches with sharp objects. Doing so will cause injury, trouble, or electric shock. |
| Do not expose this unit directly to water. Doing so will cause trouble, electric shock, or heating. |
| Do not set vessels containing a liquid on this unit. Doing so will cause heating, fire, or electric shock. |
| Dispose of the packing materials safely. Tear and dispose of the plastic packing bags so that children cannot play with them. There is the danger of suffocation if children play with the original plastic bags. |
| Do not insert articles into the slit parts of this unit. Doing so will cause trouble, heating, or electric shock. |

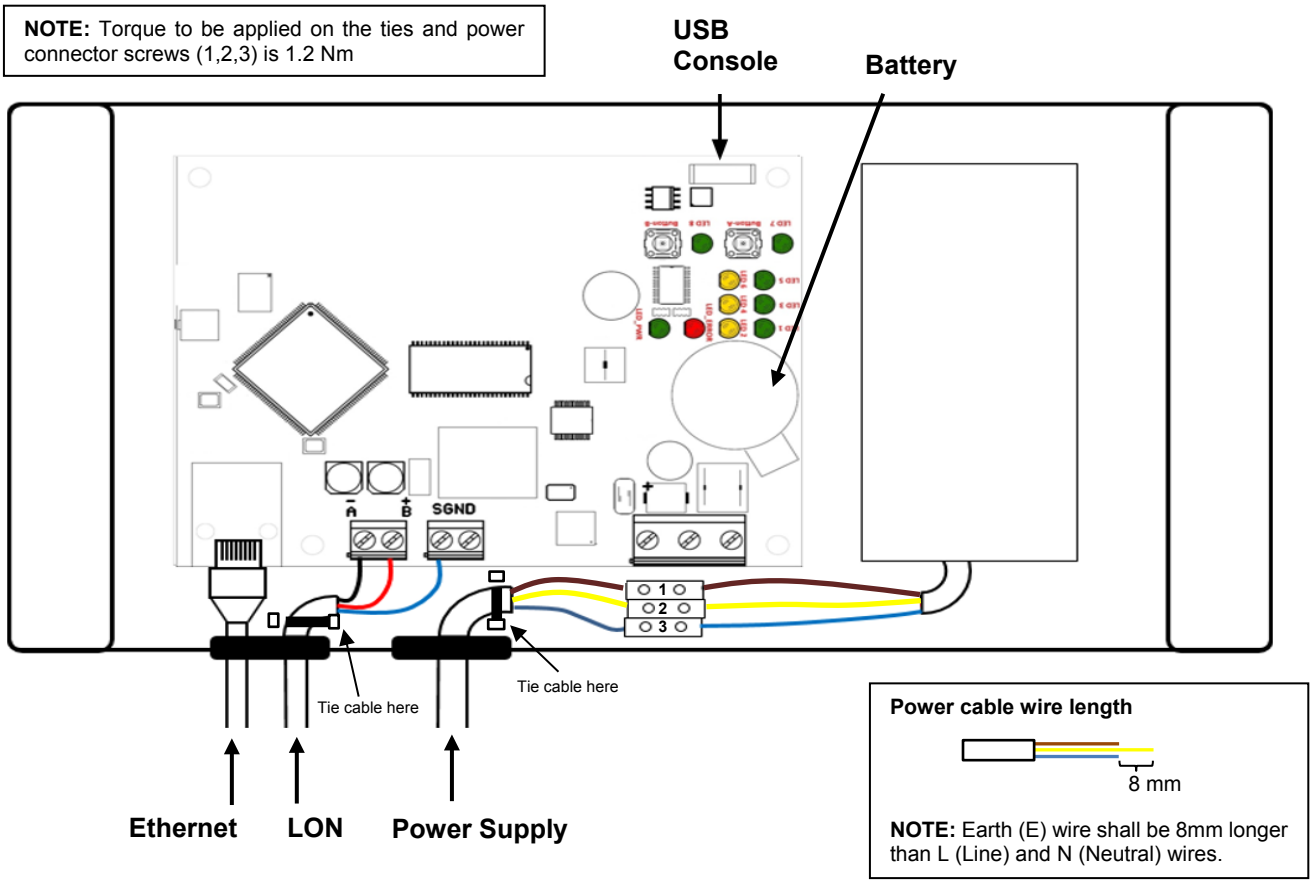



**Figure 6.1** Gateway connections

**NOTE:** Mount the device in a vertical position and ensure proper space for all connectors when mounted. Product is to be connected only to Ethernet and LON networks without routing to the outside plant and connect to outdoor devices through SELV ports.

| ⚠CAUTION |
|---|
| Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions. |

**IMPORTANT:** Tie the power supply and the LON cable to the corresponding tie fixture as shown in Figure 6.1. When doing so, cable must be tied thru only one of the 2 holes of the tie fixture. If cable is tied thru both of the 2 holes of the tie fixture, the cable may become loose and can be dangerous.

***Power Supply***
*Connect mains to the power supply connector as:*

*1.- Brown: Line (L)*
*2.- Yellow: Earth / Ground (E)*
*3.- Blue: Neutral (N)*

A readily accessible disconnect device shall be incorporated in the building installation wiring.

***Ethernet / BACnet IP (UDP) / Console (UDP & TCP)***
*Connect the cable coming from the IP network to the connector ETH of the gateway. Use an Ethernet CAT5 cable.*

***VRF Network***
*Connect the LON bus to connectors A3 (+), A4 (-) and A1/A2 (SNGD) of gateway's PCB. There are no polarities for the A3 (+), A4 (-) signals.*

***Console Port***
*Connect a mini-type B USB cable from your computer to the gateway to allow communication between the Configuration Software and the gateway. Remember that Ethernet connection is also allowed for configuration.*

## 6.2 *Wiring Requirements & Notes*

### 6.2.1 Electrical Requirement

| Use | Size | | Wire type | Remarks |
|---|---|---|---|---|
| Power supply cable | Maximum | 1.25 $mm^2$ (16AWG) | Type 60245 IEC 57 or equivalent | 1Ø AC208–240 V 50/60Hz, 2 Cable + earth (ground) [Always earth (ground) the unit] |
| | Minimum | 0.5 $mm^2$ (20AWG) | | |
| Transmission cable | 0.33 $mm^2$ (22AWG) | | 22AWG LEVEL4 (NEMA) nonpolar 2 core, twisted pair solid core Shielded | LONWORKS® compatible cable |
| Ethernet cable | | | Category 5 or Higher STP cable with RJ45 connector | Ethernet cable |
| Fuse capacity | 1.25 A | | | |

| ⚠WARNING |
|---|
| Before starting installation work, turn off the power of this unit and the connection destination. Do not turn on the power again until installation is completed. Otherwise, it will cause electric shock or fire. |
| Use specified cables or accessory cables to connect to this unit.<br>Do not modify the cables to connect this unit other than those specified, do not use extension cables, and do not use independent branch wiring. It may cause electric shock or fire. |
| Install the transmission cables securely to the terminal block. Confirm that external force is not applied to the cable. Use transmission cables made of the specified cable. If intermediate connection or insertion fix- ing are imperfect, it will cause electric shock, fire, etc. |

| ⚠ WARNING |
|---|
| When connecting the cables to this unit, route the cables so that the cover of this unit is securely fixed. If the cover is imperfectly fixed, it may cause fire or overheating of the terminals. |
| Perform earth (ground) work positively. Do not connect the earth (ground) cable to a telephone cable, water pipe, or conductor rod. |
| Always fasten the outside covering of the cables with the cable clamp. (If the insulator is chafed, electric leakage may occur.) |
| Perform all wiring works so that the user does not touch the wiring. Otherwise, injury or electric shock could result. |
| If any cable is damaged, do not repair or modify it yourself. Improper work will cause electric shock or fire. |

| ⚠ CAUTION |
|---|
| Do not bind the remote controller cable and the transmission cable together with or parallel to the power supply cable of the indoor and outdoor units. It may cause erroneous operation. |
| When performing wiring work, be careful not to damage the cable or injure yourself. Also, connect the connectors securely. Loose connec- tors will cause trouble, heating, fire, or electric shock. |
| Install the indoor and outdoor units, power supply cable, transmission cable and remote control cable 1 m (40 in.) away from television and ra- dio to avoid distorted images and noise. Otherwise, a malfunction could result. |
| Perform wiring so that water does not enter this unit along the external wiring. Always install a trap to the wiring or take other countermeasures. Otherwise it will cause trouble or electric shock or fire. |
| Confirm the name of each unit and name of each terminal block of the unit and connect the wiring in accordance with the directions given in the manual so that there is no incorrect wiring. Incorrect wiring will dam- age the electric parts and cause smoke and fire. |
| When installing the connection cables near a source of electromagnetic waves, use shielded cable.<br>Otherwise, a breakdown or malfunction could result. |
| The terminal screws and earth (ground) screws have different shapes. Be sure to install the screws in the correct locations. If the screws are installed in the wrong locations, the circuit board could be damaged. |

Note:
- Do not bind the power supply cable and transmission cable to avoid an erroneous operation.
- Use shield cable for transmission cable. The shield metal should be earthed (grounded).
- Install the disconnect switch to the easily accessible location.
- Check that an appropriate fuse (1.25A) is set.
- Before connecting cables, turn off the power of the VRF units connected to the gateway.

## 6.3 *Power device*

The first step to perform is to power up the device. To do so, a power supply working with any of the voltage range allowed is needed (check section 10). Once connected the ON led will turn on.

Notes:
(1) Connect the cables to the correct terminals. Take care that the cables do not get shortened. The stripped end of the cables are preferably be tinned.
(2) Secure the cable to the terminals using an appropriate tool so that the cables do not come loose.
(3) Use the specified cables, connect them securely, and fasten them so that there is not stress placed on the terminals.
(4) Use an appropriate screwdriver to tighten the terninal screws.
Do not use a screw dirver that is too small or big. Otherwise, the screw heads may be damaged and prevent the screw from being properly tightened.
(5) Do not tighten the terminal screw too much. Otherwise, the screw may break.
(6) Apply an appropriate tightening torques for the terminal screw. Otherwise, abnormal overheating may occur and possibly cause heavy damage inside the unit,.
(7) Do not fix 2 or more power supply cables with 1 screw/terminal.

| ⚠ WARNING |
|---|
| Apply an appropriate tightening torques for the terminal screw. Otherwise, abnormal overheating may occur and possibly cause heavy damage inside the unit,. |

| ⚠ CAUTION |
|---|
| Check that the power supply voltage is within the specified range. If the power supply voltage outside the specification is input, it will causetrouble. |
| Recheck the wiring. Incorrect wiring will cause trouble. |

## 6.4 *Connect to BACnet*

Connect the communication cable coming from the network hub or switch to the Ethernet port (Figure above) of the gateway. The cable to be used depends on where the gateway is connected:

- Connecting directly to a BACnet/IP device: a straight Ethernet UTP/STP CAT5 cable
- Connecting to a hub or switch of the LAN of the building: a straight Ethernet UTP/STP CAT5 cable

In case there is no response from the BACnet devices to the frames sent by gateway, check that they are operative and reachable from the network connection used by the gateway. Check the gateway Ethernet interface sending Pings to its IP address using a PC connected to the same Ethernet IP network. If the problem persists communicating through the LAN of the building, contact the network administrator and make sure traffic on the port used is allowed through all the LAN path.

The BACnet® Gateway for VRF System comes with DHCP functionality enabled by default.

## 6.5 *Connect to Fujitsu interface*

Use the LON connector in the left bottom corner of the gateway in order to connect the VRF network to the UTY-VBGX. Remember to follow all safety precautions indicated by Fujitsu.

Modifying some other parameters can affect proper communication.

| UTY-VBGX (LON terminal block) | C2 | VRF network connection through LON | | VRF network |
|---|---|---|---|---|
| Cable (Three wires) | | | | Cable (Three wires) |
| A | - | ← | - | A |
| B | + | → | + | B |
| SGND | | ↔ | | SGND |

**NOTE:** Torque to be applied on the LON connector screws (A,B,SGND) is 0.5 Nm

| ⚠ WARNING |
|---|
| Tighbten the terminal screws to the specified torques, otherwise, abnormal overheating may occur and possibly cause heavy damage inside the unit. |

| ⚠ CAUTION |
|---|
| • To peel the sheath form the lead cable, use a dedicatied tool that will not damage the conductor cable.<br>• When installing a screw on the terminal block, do not cut the cable by overtightening the screw. On the other hand, under tightened screw can cause faulty contact, which will lead to a communication failure. |

## 6.6 *Connect to PC (Configuration tool)*

This action allows the user to have access to configuration and monitoring of the device. Two methods to connect to the PC can be used:

- Ethernet: Using the ETH port of the gateway. How to check connectivity is explained in section 6.3.
- USB cable: To connect the device to the PC the USB cable supplied should be plugged to the USB Console port.

# 7 Set-up process and troubleshooting

## 7.1 *Pre-requisites*

It is necessary to have the BACnet/IP client device (BMS side device) operative and properly connected to the BACnet/IP port of the gateway. It is also required to have the VRF network connected to the gateway through LON wiring as defined by the standard.

Connectors, connection cables, PC for the Configuration Tool usage and other auxiliary material, if needed, are not supplied by FGL for this standard integration.

Items supplied with this product for this integration are:

- BACnet® Gatewya for VRF device with firmware loaded.
- Configuration Tool to configure the BACnet® Gateway for VRF.
- USB Console cable to communicate with the BACnet® Gateway for VRF.
- Product documentation.

## 7.2 *Set-up procedure*

1. Install the Configuration Tool in your laptop, use the setup program supplied in the USB memory stick supplied with this product and follow the instructions given by the installation wizard.

2. Install the gateway in the desired installation site. The mounting can be on a stable not vibrating surface. The direction of the mounting of the case must be such that there are no cable opening towards the bottom side.

3. Connect the communication cable coming from the BACnet/IP network to the port marked as ***Ethernet*** of the gateway (More details in section 6.1).

4. Connect the communication cable coming from the FGL bus to the port marked as ***AB SGND*** of the gateway (More details in section 6.3).

5. Power up the gateway. Take care of the polarity of the supply voltage applied (More details in section 6.3).

6. Connect your laptop or desktop to the gateway (More details in section 6.4).

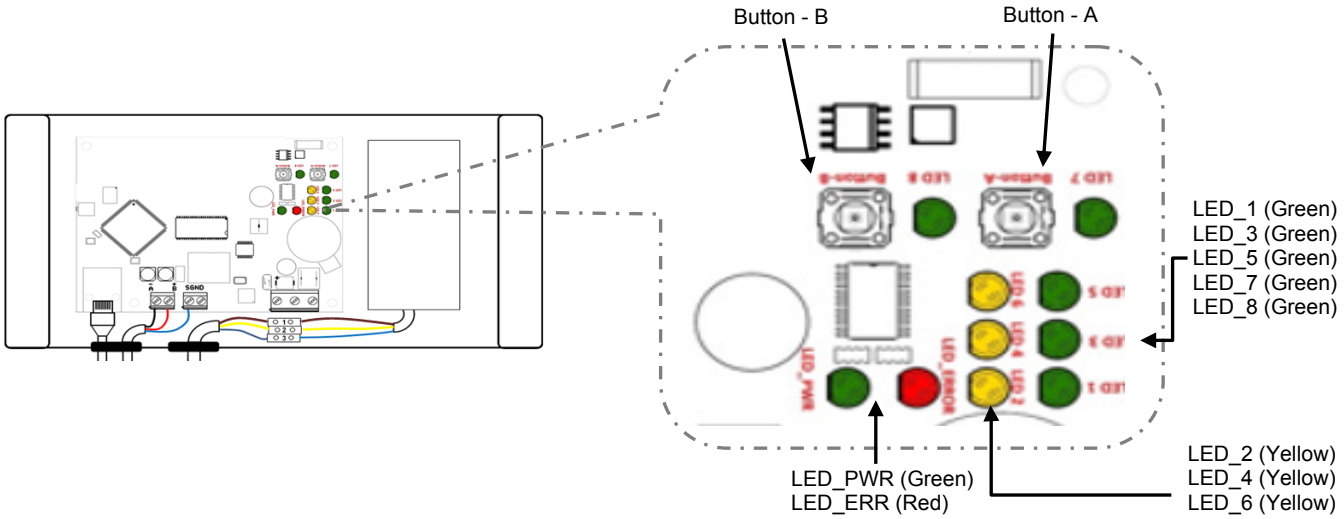
7. Open the Configuration Tool, create a new project. Select the connection mode to be used to connect to the gateway and click on the ***Connect*** button.

8. Modify the configuration as desired, save it and download the configuration file to the gateway (More details in section 8).

9. Open the *BACnet Communication Viewer* window and check that there is communication activity, some TX frames and some other RX frames. This means that the communication with the BACnet master device is OK. In case there is no communication activity between the gateway and the BACnet device check that it is operative and the communication cable used to connect both devices.

10. Open the *Fujitsu Communication Viewer* window and check that there is communication activity, some RX frames. This means that the communication with the VRF network is OK. In case of no communication activity, check that the VRF network is operative and well configured and check also the communication cable used to connect both systems.

## 7.3 *LEDs status and push buttons*




| LED | Description |
|---|---|
| ***LED_ERR (red)*** | Gateway error state indication. If active, contact your supplier. |
| ***LED_PWR (green)*** | Power-on. HW-controlled / non-FW. |
| ***LED_1 (green)*** | Ethernet LNK led. Same as Ethernet green led. |
| ***LED_2 (yellow)*** | Ethernet ACT led. Same as Ethernet yellow led. |
| ***LED_3 (green)*** | Fujitsu bus TX activity. |
| ***LED_4 (yellow)*** | Fujitsu bus RX activity. |
| ***LED_5 (green)*** | BACnet TX LED. |
| ***LED_6 (yellow)*** | BACnet RX LED. |
| ***LED_7 (green)*** | Service led of LON port. |
| ***LED_8 (green)*** | Device has IP address (after DHCP or manually assigned). |

| Button | Description |
|---|---|
| ***PUSH_A*** | Sends I-Am msg on bacnet-ip side. |
| ***PUSH_B*** | Service pin of LON port. |

# 8 Configuration Tool for BACnet® Gateway (UTY-VBGX)

## 8.1 *Introduction*

The Configuration Tool for BACnet® Gateway is a Windows® 7/ 8.1/ 10 compatible software developed specifically to monitor and configure the UTY-VBGX gateway.

In order to install the software, simply execute the installer within the USB memory stick supplied with this product and follow instructions on the wizard.

## 8.2 *Welcome screen*

From the welcome screen, access is granted to: the Fujitsu General Limited Website, start a new project, load a previous project from our computer or get the current project running on the gateway.

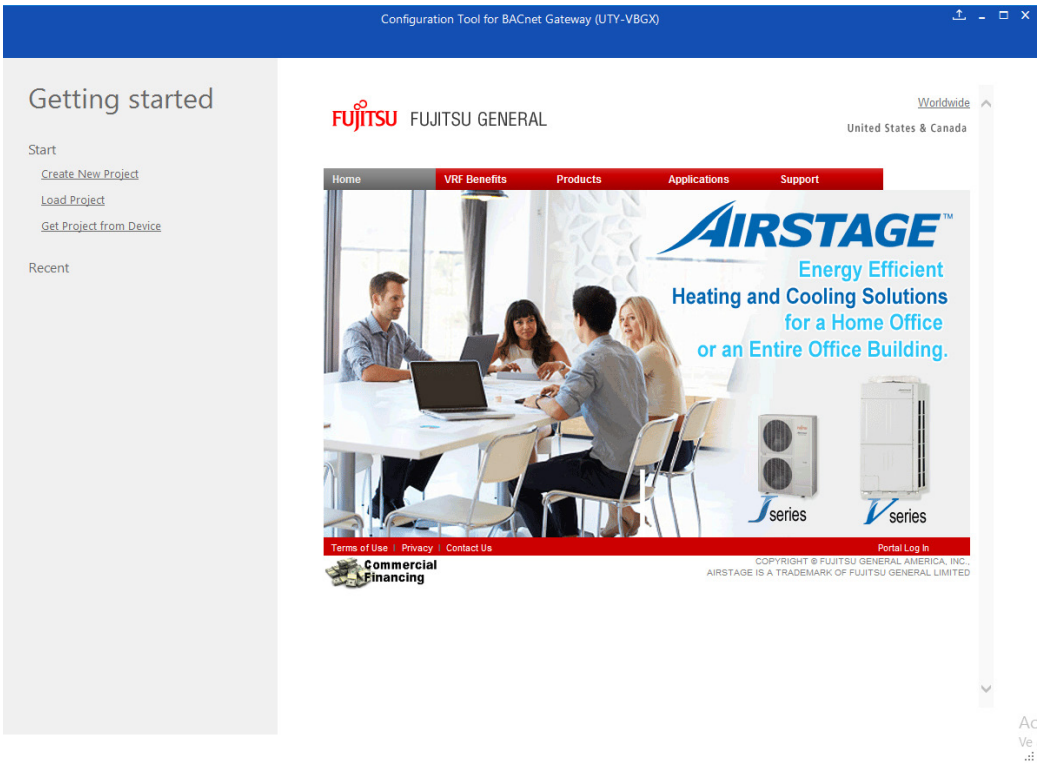



**Figure 8.1** Welcome screen

**1. Create New Project**

When pressing this button, you will be directed to the connection view. More information can be found in 8.3

**2. Load Project**

Use this option to select a previous project you have been working with and it is already stored in your PC or an accessible storage device.

**3. Get Project from Device**

Use this option to get the current configuration running on the gateway. Notice that to do that, you need to be connected to the gateway.

- **IP connection:** This requires Ethernet connection to the gateway and also knowing the connection password. More information about the password can be found in section 8.4.1.
- **USB connection:** This requires USB connection to the gateway.

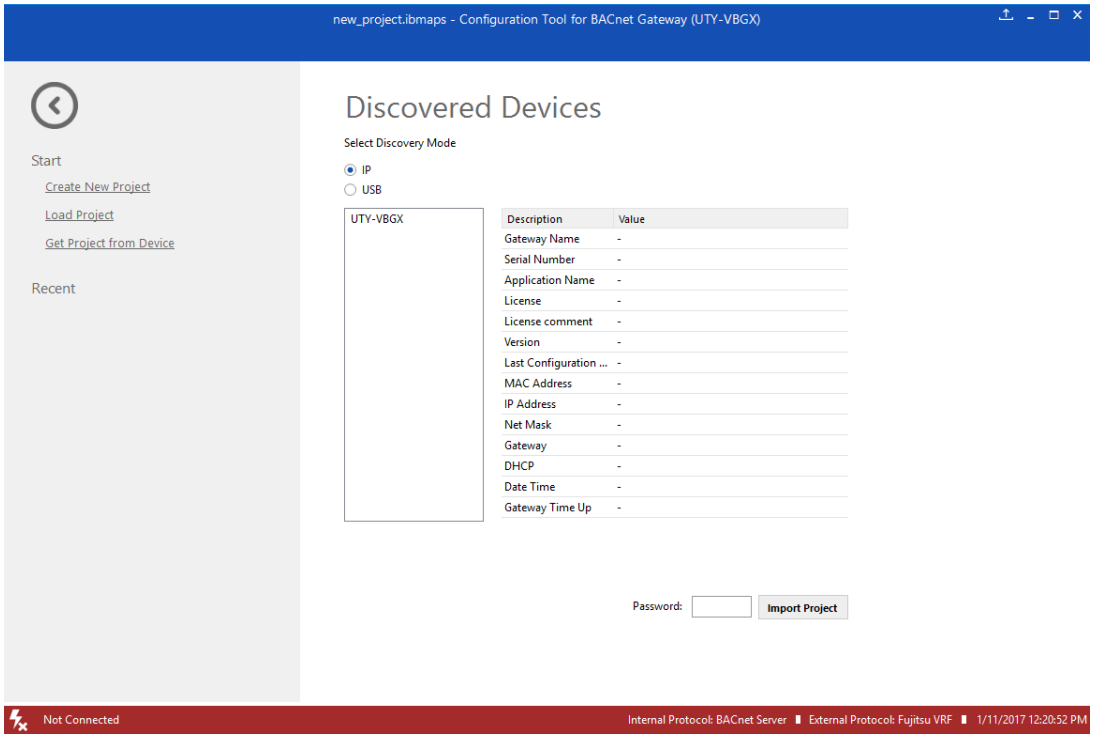



**Figure 8.2** Get Project from Device view

## 8.3 *Connection*

Use this section to configure the connection between the laptop or desktop to the gateway.

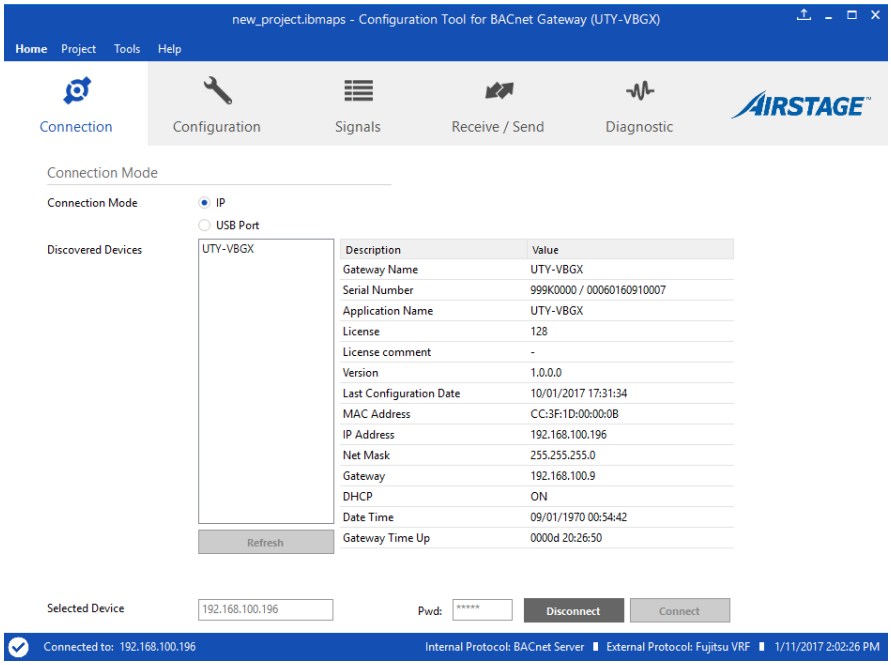



**Figure 8.3** Connection configuration

**NOTE:** If using IP connection, the Configuration Tool will automatically scan the IP network for the gateway and will show it in the list. Notice that in that case, a password is required. Default values for IP connection are: **IP: 192.168.100.144 / Password: admin**
If installing more than one BACnet® Gatewy for VRF System, connect them one by one and assign an IP to each of them in case DHCP is not available.

## 8.4 *Configuration*

In this section is where main configuration for the signals is carried out.

### 8.4.1 General

Set the general gateway parameters.

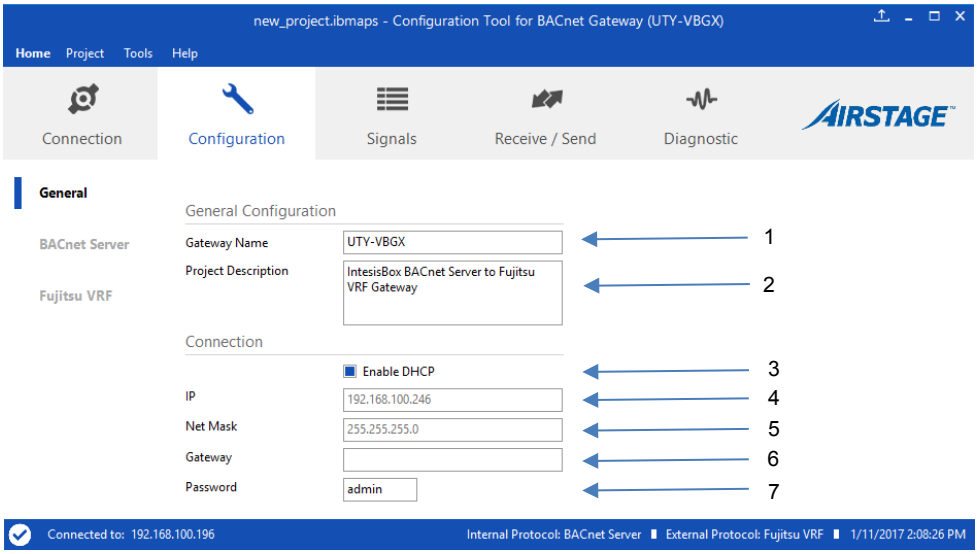



**Figure 8.4** General configuration

1. **Gateway Name:** Descriptive name for the gateway in its use on the Configuration Tool.
2. **Project Description:** Short description of the project.
3. **Enable DHCP:** Enables and disables DHCP usage by the gateway.
4. **IP:** Enter the IP address for the gateway (***192.168.100.144*** by default).
5. **NetMask:** Enter the gateway net mask address (***255.255.255.0*** by default).
6. **Gateway:** Enter the router or default gateway address if needed. In case you don't want to use it, leave it blank.
7. **Password:** Enter the access password to allow IP connection to the box (***admin*** by default).

### 8.4.2 BACnet Server

Set the BACnet parameters

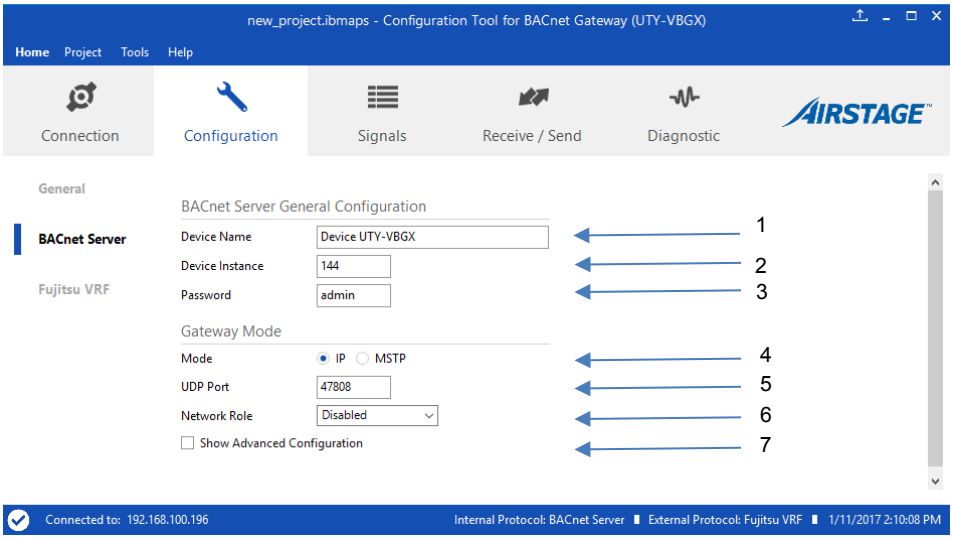



**Figure 8.5** BACnet/IP interface configuration

1. **Device Name:** Device BACnet name and description (***Device UTY-VBGX*** by default).
2. **Device Instance:** Device BACnet number (***144*** by default, if more than one UTY-VBGX is present, this have to be a unique number for each BACnet® Gateway for VRF System).
3. **Password:** Password to allow IP connection (***admin*** by default).
4. **Mode:** BACnet IP mode is the only one available.
5. **UDP Port:** Used port for BACnet IP communications (***47808*** by default)
6. **Network Role:** Select the gateway role from a BACnet network device point of view:
   a. **Disabled**
   b. **Foreign device**
   c. **BBMD**
7. **Show advanced configuration:** Enables Notification Classes configuration.

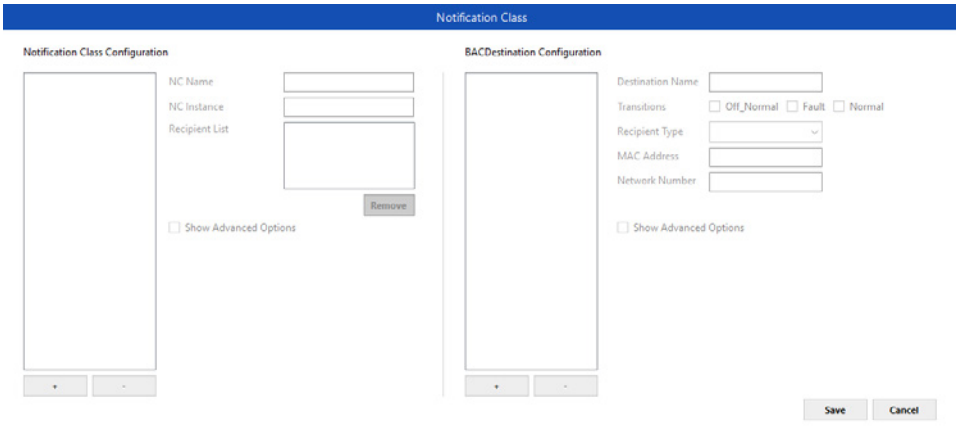



**Figure 8.6** Notification Class configuration

### 8.4.3 Fujitsu VRF

Set the Fujitsu VRF parameters

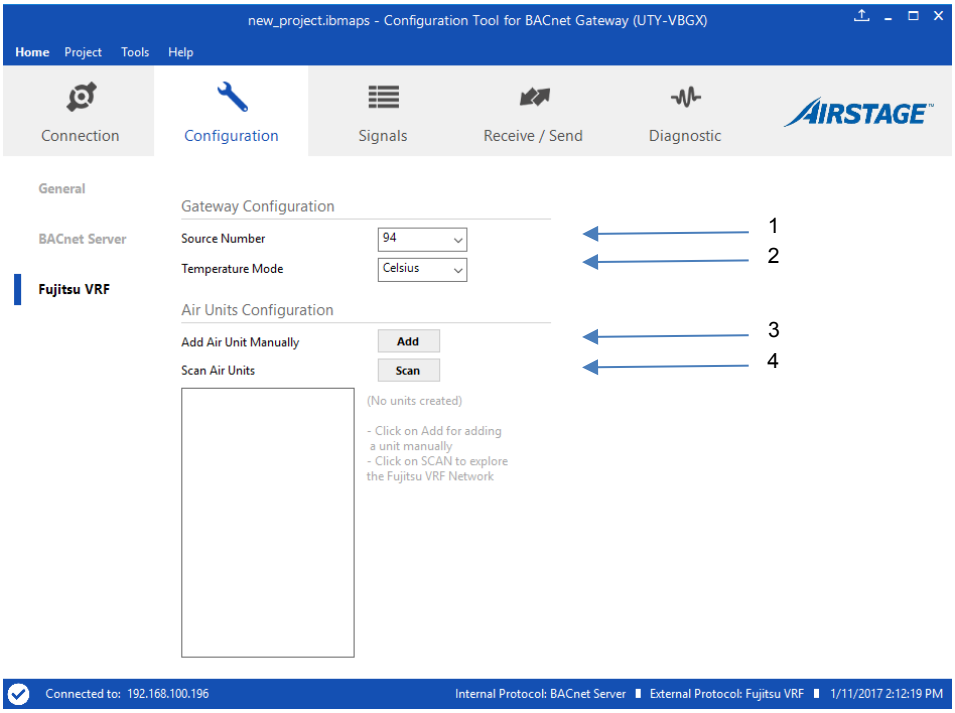



**Figure 8.7** Fujitsu VRF interface configuration

1. **Unit Address:** Enter the BACnet® gateway unit address of LON (values from 92 to 95 with no duplication within the same VRF network).

2. **Temperature Mode:** Enter the desired temperature units to be used (Celsius or Faherenheit).

3. **Add Air Unit Manually:** Use this option to introduce units manually in the configuration.

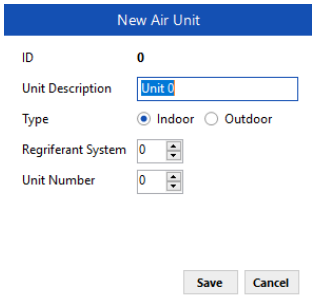



**Figure 8.8** Add units manually

4. **Scan Air Units:**

Use this function to scan the VRF network automatically to look for the current units connected to the system.

**Note**: Scan may take from 5 to 6 minutes depending on each installation specs.

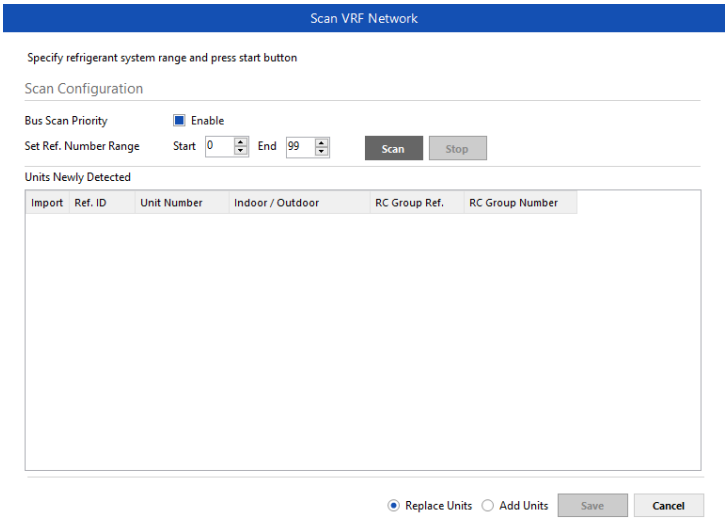



**Figure 8.9** Units scan on the FGL bus

## 8.5 *Signals*

Check the current available signals according to the units configured on the configuration tab (see section 8.4.3).

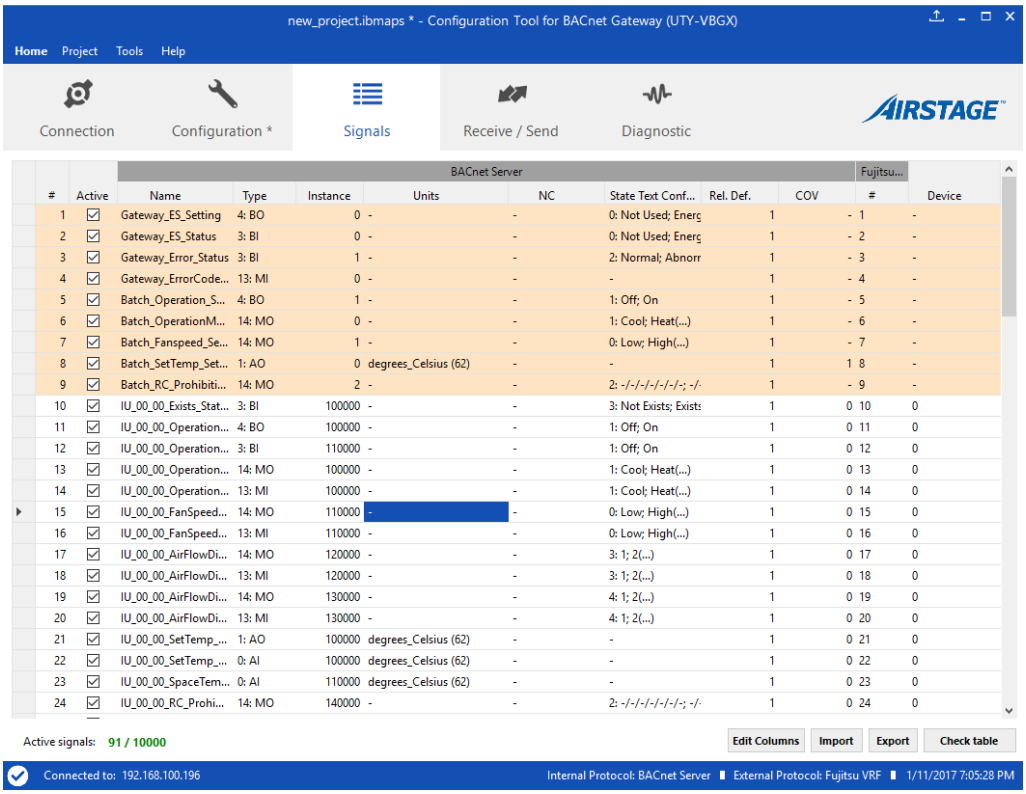



**Figure 8.10** Signals' Viewer

1. **Signal number:** Configuration Tool internal reference.
2. **Active:** Indicates if the signal is currently active for this configuration. If not, it will not be considered by the tool when downloading it to the gateway.
3. **Object BACnet name:** Signal's descriptive name that identifies the signal.
4. **BACnet type:** Type of BACnet object.

5. **Object Instance:** BACnet object instance. This can be a fixed number or a formula for the identification of each element.
6. **Units:** Units applied to each object.
7. **NC:** Notification Class.
8. **State text configuration:** Enums the State text to be shown.
9. **Relinquish default value:** Indicates the current relinquish default value for this object.
10. **COV:** Sets the COV increment value for this object.
11. **#:** Internal gateway address for each register.
12. **Device:** FGL device number associated to this register.

a) **Edit Columns:** Enables or disables visible columns.

b) **Import:** Imports a previous existing configuration. Only Excel format is supported.

c) **Export:** Exports the current configuration. Only Excel format is supported.

d) **Check table:** Checks the current configuration to make sure

## 8.6 *Receive/Send*

Send or receive the current configuration of the gateway.

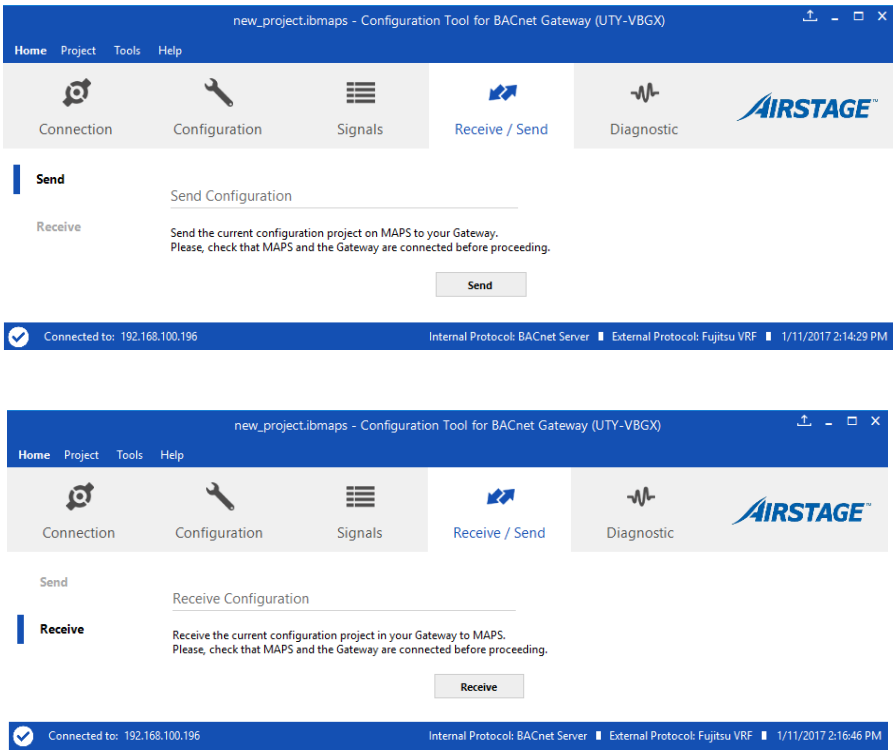



**Figure 8.11** Send and receive options

## 8.7 *Diagnostic*

Use this setting to check the current communication status of the gateway on both: BACnet and FGL.

Communication with the box, the BACnet side and the Fujitsu system can be check using the viewer available.

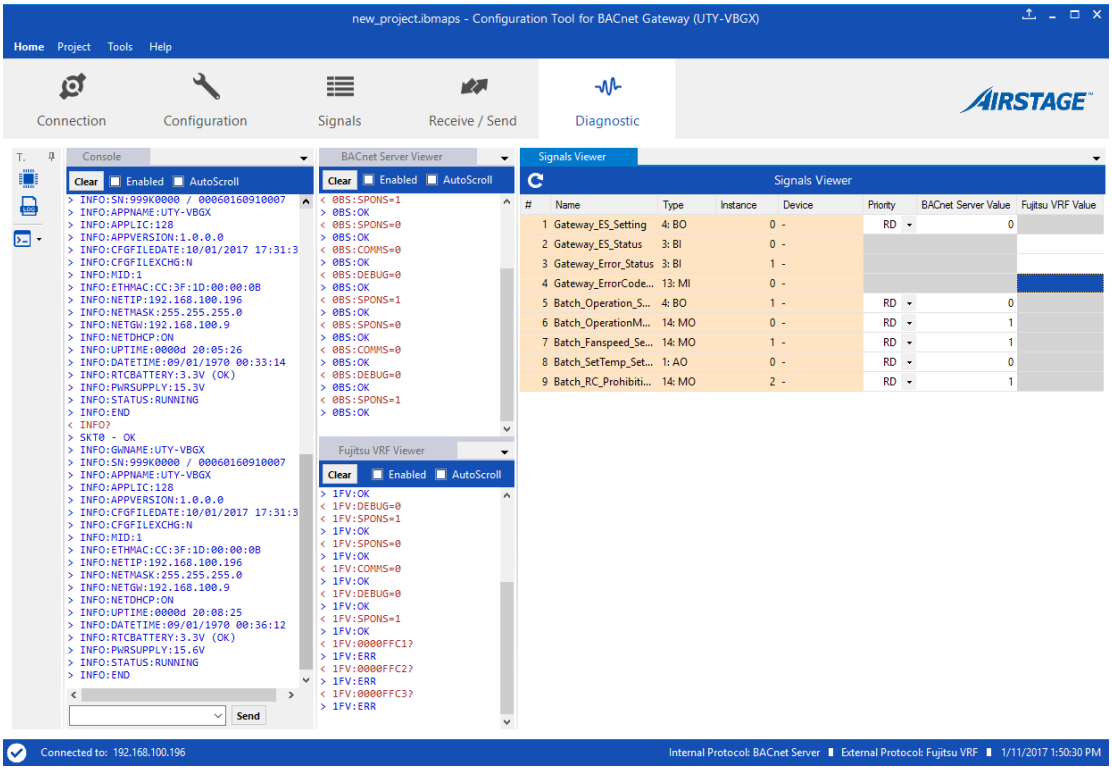



**Figure 8.12** Diagnostic tool

1. **Hardware Test:** Checks the current hardware status of the gateway to ensure that is not faulty.
2. **Log:** Enables the LOG Record Mode which starts loggin communications from all viewers and stores it in a zip file. This file can be sent directly to the support team to check any unexpected behavior of the box.
3. **Commands:** It sends specific commands to the gateway to perform general actions.
    - **INFO?** Asks the gateway to identify itself and show basic information.
    - **RESET!** Resets the gateway. This is not a back to factory settings action.
    - **Enable COMMS** Enables communication between the gateway and the Configuration Tool
    - **Disable COMMS** Disanables communication between the gateway and the Configuration Tool

### 8.7.1 Console

Shows basic information about the gateway and communication between BACnet and VRF systems.

### 8.7.2 BACnet Server Viewer

Shows specific information about the BACnet communication.

### 8.7.3 Fujitsu VRF Viewer

Shows specific information about the VRF network communication.

### 8.7.4 Signals Viewer

Check the current signal values on both: BACnet and VRF network side (connection to the VRF network and/or BACnet client is required).

The Signals Viewer can be used even though only one system is connected to the gateway, BACnet or Fujitsu AC. Therefore, it becomes convenient for supervision and testing the system.

In order to force a specific value to a signal, double-click the corresponding ***BACnet Server Value*** or ***Fujitsu VRF Value*** cell in the table. Notice that grey cells can't be read or written. Changing its value in this way, will make:

- The content of the corresponding object will be changed to this value.
- If the signal is write-enabled, it will trigger a suitable command to Fujitsu AC system.

# 9 AC Unit Types compatibility

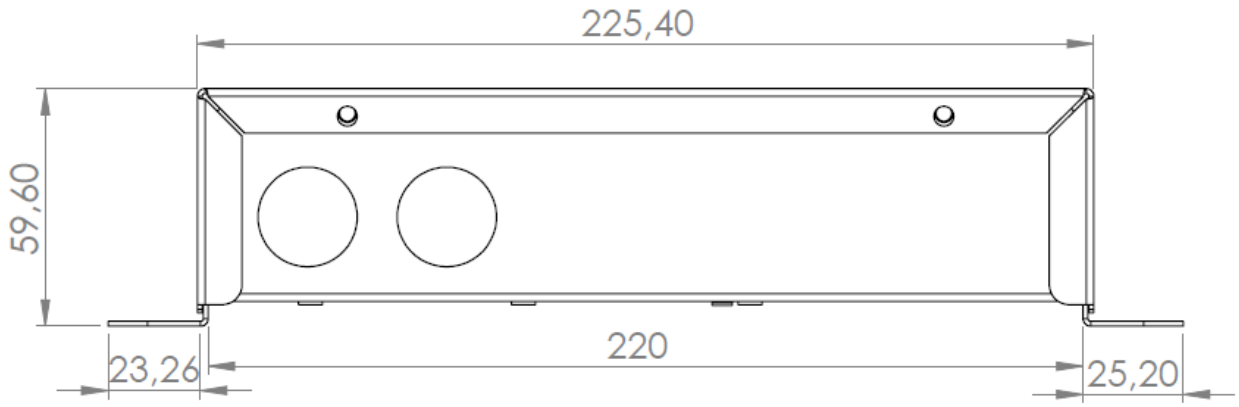
VRF Gateway for VRF System is compatible with units that are later than VRF-II series.

# 10 Mechanical & electrical characteristics

| | |
|---|---|
| **Enclosure** | Material: Plastic, type PC (UL 94 V-0)<br>Dimensions: 270mm x 176mm x 60mm<br>Weight: 1.2 Kg<br>Color: Light Grey RAL 7035 |
| **Mounting** | Wall recommended |
| **Power** | Screw terminal block for power connection (3 poles)<br>208 to 240VAC<br>50 to 60Hz<br>4.6W max. |
| **Terminal wiring**<br>**Power supply and low-voltage signals** | Per terminal: solid wires or stranded wires (twisted or with ferrule)<br>1 core: 0.5 … 2.5mm$^2$<br>2 cores: 0.5 … 1.5mm$^2$<br>3 cores: not permitted |
| **Ethernet port** | Connector:<br>RJ45 for shielded cat5 or higher class cable<br><br>Communication speed:<br>10/100 Mbps<br><br>Communicates with:<br>BACnet IP network<br>PC for gateway configuration |
| **Port A LON** | A1 A2 (2 poles screw terminal)<br>Signal Ground<br><br>A3 A4 (2 poles screw terminal)<br>Fujitsu VRF network connection |
| **USB port** | Mini Type-B receptacle connector and USB 2.0 compliant<br>Only for gateway configuration and diagnostic<br>1500VDC isolation from others ports |
| **Battery** | Size: Coin 20mm x 3.2mm<br>Capacity: 3V / 225mAh<br>Type: Manganese Dioxide Lithium |
| **LED indicators** | 1 x Power<br>1 x Error |
| **Operational temperature** | 0°C to +46°C |
| **Operational humidity** | 5% to 95%, non-condensing |
| **Preservation Temperature** | -10°C to +60°C |
| **Protection** | IP20 (IEC60529). |
| **RoHS conformity** | Compliant with RoHS directive (2002/95/CE). |

# 11 Dimensions

[mm]

# 12 Annex

## 12.1 *Error codes*

Below you can find a list of error codes from Fujitsu air conditioning system.

**V-II/J-II/VR-II Series**

| Present_Value | Error Code | Error Description |
|---|---|---|
| 17 | 11 | Serial communication error between indoor/outdoor units |
| 18 | 12 | Remote controller communication error |
| 19 | 13 | Communication error between Outdoor unit |
| 20 | 14 | Network communication error |
| 21 | 15 | Scan error |
| 22 | 16 | Peripheral device communication error |
| 23 | 17 | Electricity charge apportionment error |
| 33 | 21 | Initial setting error |
| 34 | 22 | Indoor unit capacity abnormal |
| 35 | 23 | Incompatible series connection error |
| 36 | 24 | Connection unit number error |
| 37 | 25 | Connection pipe length error |
| 38 | 26 | Address setting error |
| 39 | 27 | Master unit, slave unit set-up error |
| 40 | 28 | Other setting error |
| 41 | 29 | Connection unit number error in wired remote controller system |
| 49 | 31 | Indoor unit power supply abnormal |
| 50 | 32 | Indoor unit main PCB error |
| 51 | 33 | Indoor unit display PCB error |
| 52 | 34 | Power relay error |
| 53 | 35 | Indoor unit manual auto switch error |
| 54 | 36 | Heater relay error |
| 55 | 37 | Indoor unit transmission PCB error |
| 56 | 38 | Network convertor PCB error |
| 57 | 39 | Indoor unit power supply circuit error |
| 58 | 3A | Indoor unit communication circuit (wired remote controller) error |
| 65 | 41 | Indoor unit room temp. thermistor error |
| 66 | 42 | Indoor unit heat ex. temp. thermistor error |
| 67 | 43 | Humidity sensor error |
| 68 | 44 | Light sensor error |
| 69 | 45 | Gas sensor error |
| 70 | 46 | Float sensor error |
| 71 | 47 | Water temperature sensor error |
| 72 | 48 | Warm water flow rate sensor error |
| 73 | 49 | Heater sensor error |
| 74 | 4A | Indoor unit air temp. thermistor error |
| 81 | 51 | Indoor unit fan motor 1 error |
| 82 | 52 | Indoor unit coil (expansion valve) error |
| 83 | 53 | Indoor unit water drain abnormal |
| 84 | 54 | Air cleaning function error |
| 85 | 55 | Filter cleaning function error |
| 86 | 56 | Water circulation pump error |
| 87 | 57 | Indoor unit damper error |

| | | |
|---|---|---|
| 88 | 58 | Indoor unit intake grille position error |
| 89 | 59 | Indoor unit fan motor 2 error |
| 95 | 5U | Indoor unit miscellaneous error |
| 97 | 61 | Outdoor unit power supply abnormal |
| 98 | 62 | Outdoor unit main PCB error |
| 99 | 63 | Outdoor unit inverter PCB error |
| 100 | 64 | Outdoor unit active filter/PFC circuit error |
| 101 | 65 | Outdoor unit IPM error |
| 102 | 66 | Convertor distinction error |
| 103 | 67 | Outdoor unit power short interruption error (protective operation) |
| 104 | 68 | Outdoor unit magnetic relay error |
| 105 | 69 | Outdoor unit transmission PCB error |
| 106 | 6A | Outdoor unit display PCB error |
| 113 | 71 | Outdoor unit discharge temp. thermistor error |
| 114 | 72 | Outdoor unit compressor temp. thermistor error |
| 115 | 73 | Outdoor unit heat ex. temp. thermistor error |
| 116 | 74 | Outside air temp. thermistor error |
| 117 | 75 | Outdoor unit suction gas temp. thermistor error |
| 118 | 76 | Outdoor unit operating valve thermistor error |
| 119 | 77 | Outdoor unit heat sink temp. thermistor error |
| 120 | 78 | Expansion valve temperature sensor error |
| 129 | 81 | Receiver liquid level detection sensor error |
| 130 | 82 | Outdoor unit sub-cool heat ex. gas temp. thermistor error |
| 131 | 83 | Outdoor unit liquid pipe temp. thermistor error |
| 132 | 84 | Outdoor unit current sensor error |
| 133 | 85 | Fan motor current sensor error |
| 134 | 86 | Outdoor unit pressure sensor error |
| 135 | 87 | Oil sensor error |
| 145 | 91 | Outdoor unit compressor 1 error |
| 146 | 92 | Outdoor unit compressor 2 error |
| 147 | 93 | Outdoor unit compressor start up error |
| 148 | 94 | Outdoor unit trip detection |
| 149 | 95 | Outdoor unit compressor motor control error |
| 150 | 96 | Open loop error(Field-weakening relevant) |
| 151 | 97 | Outdoor unit fan motor 1 error |
| 152 | 98 | Outdoor unit fan motor 2 error |
| 153 | 99 | Outdoor unit 4-way valve error |
| 154 | 9A | Outdoor unit coil (expansion valve) error |
| 159 | 9U | Outdoor unit miscellaneous error |
| 161 | A1 | Outdoor unit discharge temperature 1 error |
| 162 | A2 | Outdoor unit discharge temperature 2 error |
| 163 | A3 | Outdoor unit compressor temperature error |
| 164 | A4 | Outdoor unit pressure error 1 |
| 165 | A5 | Outdoor unit pressure error 2 |
| 166 | A6 | Outdoor unit heat exchanger temperature error |
| 167 | A7 | Suction temperature abnormal |
| 168 | A8 | Poor refrigerant circulation |
| 169 | A9 | Current overload error |
| 170 | AA | Outdoor unit special operation error |
| 171 | AC | Ambient temperature error |
| 172 | AF | Out of the possible operation range |

| | | |
|---|---|---|
| 173 | AJ | Freeze protection operated |
| 177 | C1 | Peripheral unit main PCB error |
| 178 | C2 | Peripheral unit transmission PCB error |
| 179 | C3 | Peripheral unit PCB 1 error |
| 180 | C4 | PCB 2 error |
| 181 | C5 | PCB 3 error |
| 182 | C6 | PCB 4 error |
| 183 | C7 | PCB 5 error |
| 184 | C8 | Peripheral unit input device error |
| 185 | C9 | Display device error |
| 186 | CA | EEPROM error |
| 187 | CC | Peripheral unit sensor error |
| 188 | CF | Peripheral unit external connector error (USB memory) |
| 189 | CJ | Other parts error |
| 193 | F1 | System tool software error |
| 194 | F2 | System tool adaptor error |
| 195 | F3 | System tool interface error |
| 196 | F4 | System tool environment error |
| 209 | J1 | RB unit error |
| 210 | J2 | Branch boxes error |
| 211 | J3 | Total heat exchanging, ventilation unit error |
| 212 | J4 | Domestic hot water unit error |
| 213 | J5 | Zone control interface error |
| 214 | J6 | DX-Kit error |

## 12.2 *RC Prohibition*

Remote Control Prohibit commands can be set/read using the values in the following correspondence table.

| State Text | Description |
|---|---|
| FL | Filter display reset operation prohibited |
| ON | Start operation prohibited (S/V Series do not have this function) |
| OP | Start/stop operation prohibited |
| MD | Operation mode operation prohibited |
| TP | Set temperature operation prohibited |
| TR | Timer setting prohibited |
| ALL | All prohibited |

| Pesent_Value | Contents displayed in State_Text |
|---|---|
| 1 | -/-/-/-/-/- |
| 2 | -/-/-/-/-/FL |
| 3 | -/-/-/-/ON/- |
| 4 | -/-/-/-/ON/FL |
| 5 | -/-/-/OP/-/- |
| 6 | -/-/-/OP/-/FL |
| 7 | -/-/-/OP/ON/- |
| 8 | -/-/-/OP/ON/FL |
| 9 | -/-/MD/-/-/- |
| 10 | -/-/MD/-/-/FL |
| 11 | -/-/MD/-/ON/- |
| 12 | -/-/MD/-/ON/FL |
| 13 | -/-/MD/OP/-/- |
| 14 | -/-/MD/OP/-/FL |
| 15 | -/-/MD/OP/ON/- |
| 16 | -/-/MD/OP/ON/FL |
| 17 | -/-/TP/-/-/- |
| 18 | -/-/TP/-/-/FL |
| 19 | -/-/TP/-/ON/- |
| 20 | -/-/TP/-/ON/FL |
| 21 | -/-/TP/-/OP/-/- |
| 22 | -/-/TP/-/OP/-/FL |
| 23 | -/-/TP/-/OP/ON/- |
| 24 | -/-/TP/-/OP/ON/FL |
| 25 | -/-/TP/MD/-/-/- |
| 26 | -/-/TP/MD/-/-/FL |
| 27 | -/-/TP/MD/-/ON/- |
| 28 | -/-/TP/MD/-/ON/FL |
| 29 | -/-/TP/MD/OP/-/- |
| 30 | -/-/TP/MD/OP/-/FL |
| 31 | -/-/TP/MD/OP/ON/- |
| 32 | -/-/TP/MD/OP/ON/FL |
| 33 | -/TR/-/-/-/- |
| 34 | -/TR/-/-/-/FL |
| 35 | -/TR/-/-/-/ON/- |
| 36 | -/TR/-/-/-/ON/FL |
| 37 | -/TR/-/-/OP/-/- |
| 38 | -/TR/-/-/OP/-/FL |
| 39 | -/TR/-/-/OP/ON/- |
| 40 | -/TR/-/-/OP/ON/FL |
| 41 | -/TR/-/MD/-/-/- |
| 42 | -/TR/-/MD/-/-/FL |
| 43 | -/TR/-/MD/-/ON/- |
| 44 | -/TR/-/MD/-/ON/FL |
| 45 | -/TR/-/MD/OP/-/- |
| 46 | -/TR/-/MD/OP/-/FL |
| 47 | -/TR/-/MD/OP/ON/- |
| 48 | -/TR/-/MD/OP/ON/FL |
| 49 | -/TR/TP/-/-/-/- |
| 50 | -/TR/TP/-/-/-/FL |
| 51 | -/TR/TP/-/-/ON/- |
| 52 | -/TR/TP/-/-/ON/FL |
| 53 | -/TR/TP/-/OP/-/- |
| 54 | -/TR/TP/-/OP/-/FL |
| 55 | -/TR/TP/-/OP/ON/- |
| 56 | -/TR/TP/-/OP/ON/FL |
| 57 | -/TR/TP/MD/-/-/- |
| 58 | -/TR/TP/MD/-/-/FL |
| 59 | -/TR/TP/MD/-/ON/- |
| 60 | -/TR/TP/MD/-/ON/FL |
| 61 | -/TR/TP/MD/OP/-/- |
| 62 | -/TR/TP/MD/OP/-/FL |
| 63 | -/TR/TP/MD/OP/ON/- |
| 64 | -/TR/TP/MD/OP/ON/FL |
| 65 | ALL/-/-/-/-/- |

Note: “ON” and “OP” may not be set at the same time.