

For commercial use

## BN interface

Model name:

**BMS-IFBN1280U-E**

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# Precautions for safety

The following instructions must be observed.

- Carefully read these "Precautions for Safety" before installation, and perform installation work safely.
- These precautions contain important information regarding safety.
- After installation work, carry out an operation trial to confirm that there are no problems, and explain to the customer how to operate and maintain the system. Ask the customer to keep this Installation Manual.

## Expressions

 <b>Warning</b>	Text set off in this manner indicates that failure to adhere to the directions in the warning could result in serious bodily harm (*1) or loss of life if the product is handled improperly.
 <b>Caution</b>	Text set off in this manner indicates that failure to adhere to the directions in the caution could result in serious bodily injury (*2) or damage (*3) to property if the product is handled improperly.

\*1: Serious bodily harm indicates loss of eyesight, injury, burns, electric shock, bone fracture, poisoning, and other injuries which leave aftereffect and require hospitalization or long-term treatment as an outpatient.

\*2: Bodily injury indicates injury, burns, electric shock, and other injuries which do not require hospitalization or long-term treatment as an outpatient.

\*3: Damage to property indicates damage extending to buildings, household effects, domestic livestock, and pets.

## Graphic symbols

 Prohibited	"⊘" indicates prohibited items. The actual contents of the prohibition are indicated by a picture or text placed inside or next to the graphic symbol.
 Compulsory	"❗" indicates compulsory (mandatory) items. The actual contents of the obligation are indicated by a picture or text placed inside or next to the graphic symbol.

## Warning



- **Installation and reinstallation should be performed by your dealer or a qualified electrician**  
Attempting to carry out installation work on your own, and doing so incorrectly, may result in electric shock or fire.
- **Electrical work must be performed by a qualified electrician in accordance with this Installation Manual. The work must satisfy all local, national and international regulations**  
Inappropriate work may result in electric shock or fire.
- **Be sure to turn off the power before starting work**  
Failure to do so may result in electric shock.
- **Use only the power adapter supplied with this unit**  
A power adapter other than that supplied with this unit may provide a different voltage and have different polarity (+) (-), which could lead to fire, explosion or generation of heat.



- **Do not modify the unit**  
Doing so may result in excessive heat or fire.

### Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

# Introduction

## ■ Overview

The BN interface refers to equipment used for controlling Building Management Systems (Procured locally) and air conditioners “TU2C-LINK Uh Line (hereinafter, referred to as Uh Line) compatible models” through communications via a network to enable central control.

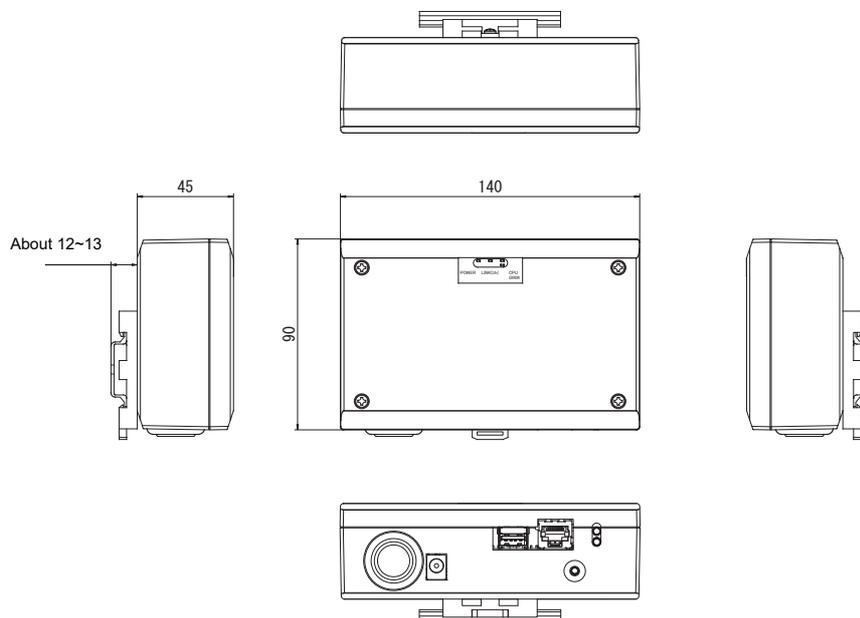
## ■ Included Items

Component	Q'ty	Remarks
BN interface equipment	1	
Power adapter	1	BN interface power supply (model name: UI318-0526) (not include Power Cable)
Pin terminal	2	Uh Line caulked connectors
Mounting bracket (DIN rail)	1	Use screws to secure the unit in locations without DIN rails (walls, etc.)
Screws (M4 x 12)	2	For securing the DIN rails
Rubber feet	4	For levelling the unit
Screws (M3 x 8)	4	For securing the rubber feet to the unit
Installation Manual	1	This manual
License Agreement	1	
License Information	1	
Tie-wrap	1	
CD-R	1	Included only for BMS-IFBN1280U-E

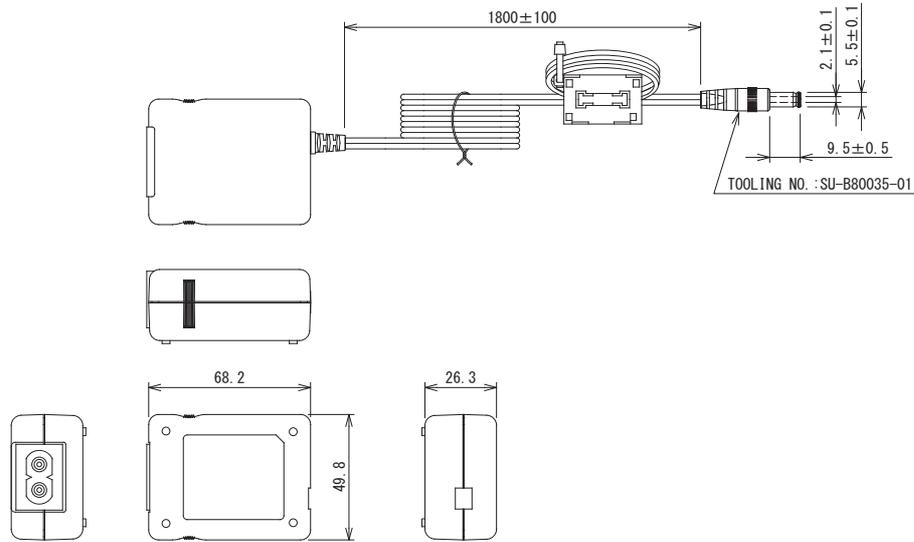
## ■ Specifications

Power supply	Rated voltage	220-240 VAC 50/60 Hz
	Power consumption	3 W
Operating temperature range		0°C to 40°C, 10% to 80% RH (no condensation)
Storage temperature range		-10°C to +60°C, 10% to 90% RH (no condensation)
Dimensions		Width 140 mm x Height 90 mm x Depth 45 mm
Mass		BN interface 260 g Power adapter 140 g

## ■ External View (BN interface equipment)



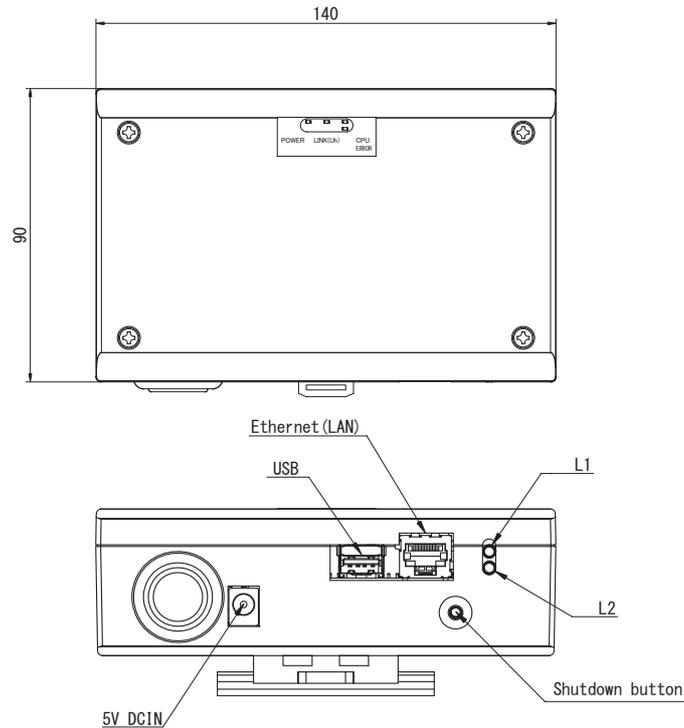
(Power adapter)



**REQUIREMENT**

Power cable is not supplied for the BN Interface. Insert a two core power cord applicable to the standard of the country you use.

**■ Component Names**



Name	Function
5V DCIN	Connect the power adapter
USB	(For service)
Ethernet (LAN)	Connect to the Building Management System
Shutdown button	Shutdown or switch to air-conditioning search mode
L1	BACnet communication status indicator
L2	BACnet communication status indicator, setting error indicator

# 1 Installation

## REQUIREMENT

Do not install the unit in any of the following places.

- Humid or wet place
- Dusty place
- Place exposed to direct sunlight
- Place where there is a TV set or radio within one meter
- Place exposed to rain (outdoors, under eaves, etc.)

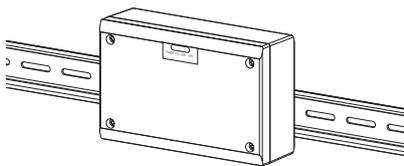
## ■ BN Interface Installation and Orientation

Install and orient the interface using the DIN rail to mount the unit or wall mount or surface mount it as shown below. Use the supplied mounting bracket to wall mount or surface mount the interface.

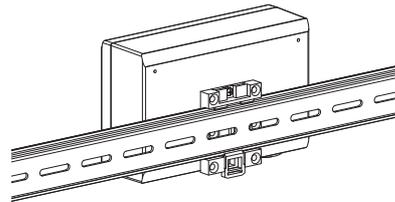
### (1) DIN rail mount

Install the interface on DIN rails mounted on a switchboard or elsewhere.

Front view

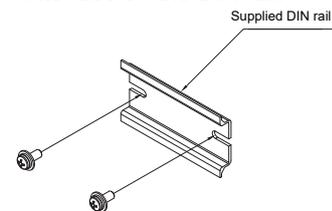


Back view

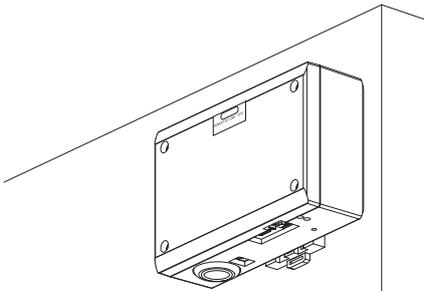


### (2) Wall mount

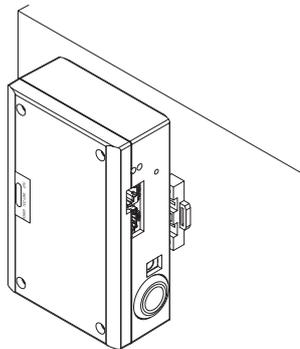
Use screws to attach the supplied DIN rails to a wall and install the interface on the DIN rail.



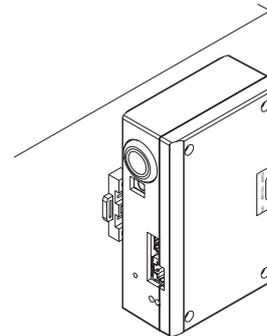
Wall mount A



Wall mount B

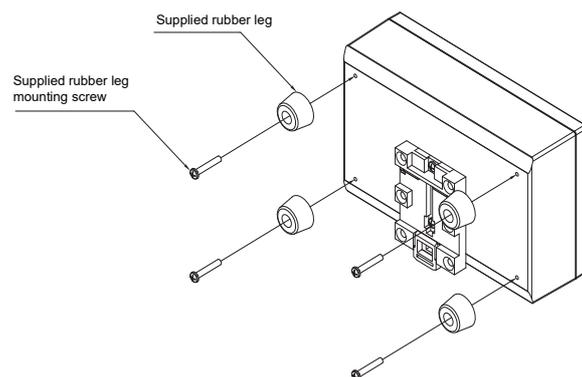
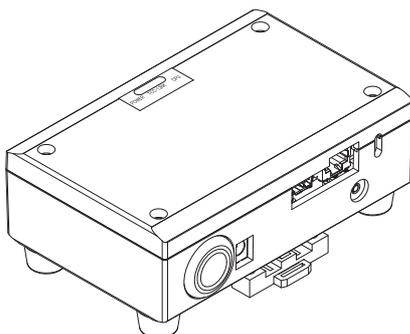


Wall mount C



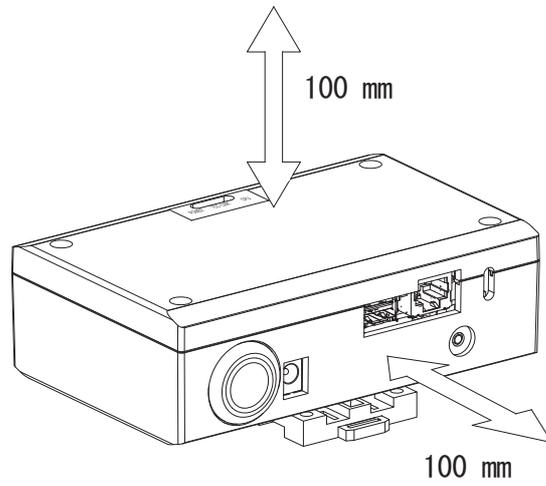
### (3) Surface mount

Use screws to secure the supplied rubber legs to the interface before surface mounting it.



## ■ Installation Space and Maintenance Space

A side space for connecting through cable inlets and an upper space for maintenance must be reserved before installation. The other sides can be adjacent to surrounding objects.



# 2 Power and signal line connections

## ■ Cables

Use the following cable for signal line connections. (Procured locally)

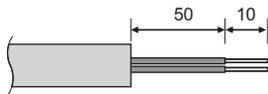
No.	Line	Description	
1	For Uh Line	Type	2-core shielded wires
		Wire size	1.25 mm <sup>2</sup> , 1000 m max.
		Length	2.00 mm <sup>2</sup> , 2000 m max. <span style="float: right;">(total length including air conditioner wiring length)</span>
2	For Ethernet <sup>®</sup>	Type	LAN cable (higher than Category 5, UTP) The appropriate use of straight cable/cross cable should be done depending on your system used
		Length	100 m max.

Ethernet<sup>®</sup> is a registered trademark of Xerox Co., Ltd.

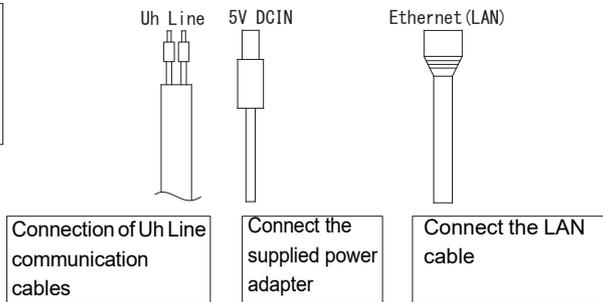
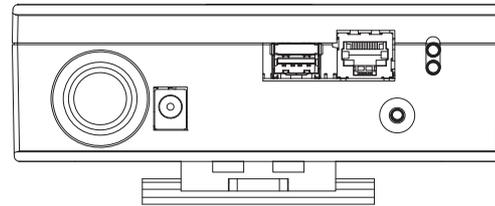
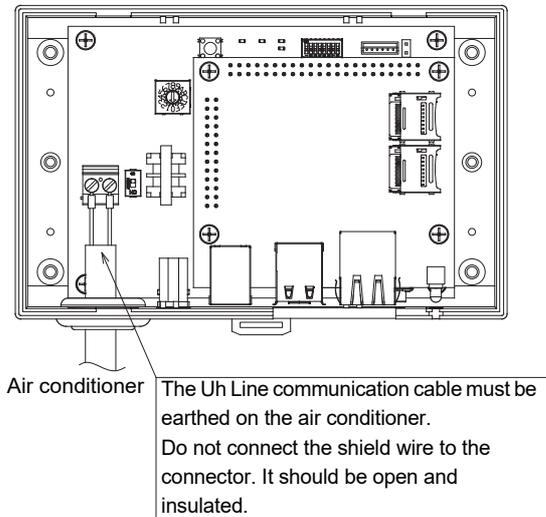
## ■ Cable Connections

Connect the cables to the specified connectors.

Length of stripped Uh Line communication cable



Connect the supplied pin terminal to the Uh Line communication cable as necessary.



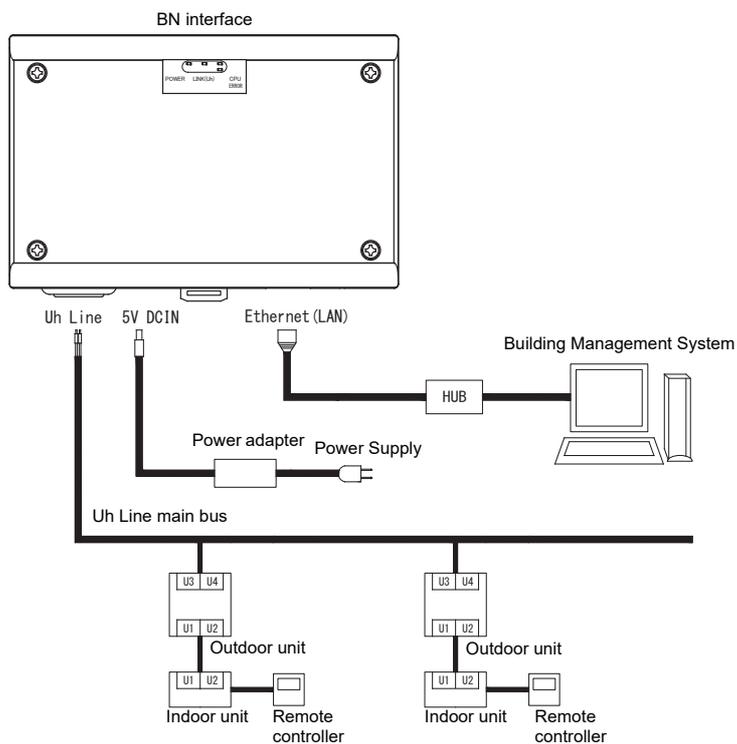
### CAUTION

The Uh Line communication cable have no polarity.



\* Secure the Uh Line communication cable and power cable to the switchboard etc. using the supplied cable tie to ensure that no excess load is placed on the power cable connection and Uh Line communication cable connection.

### ■ Example of System Wiring Connections

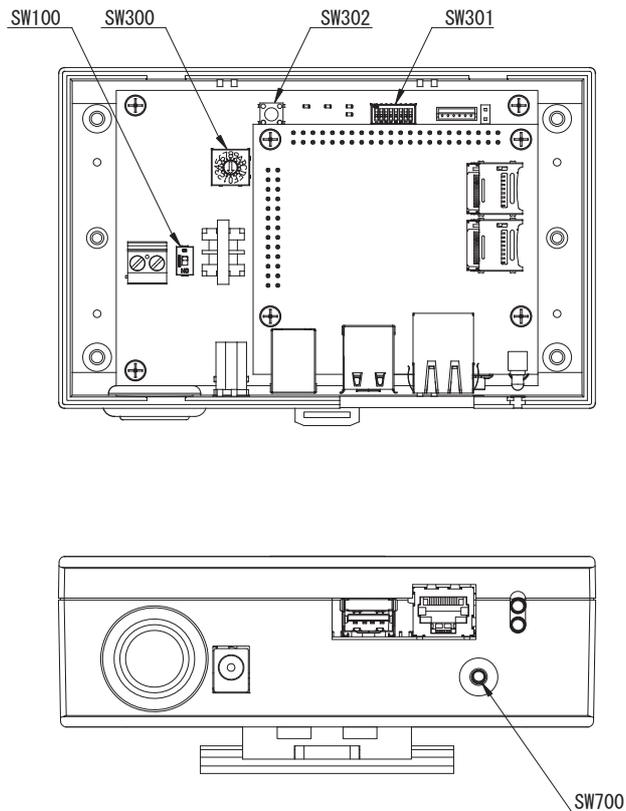


# 3 Settings

## 3-1. Switch setting

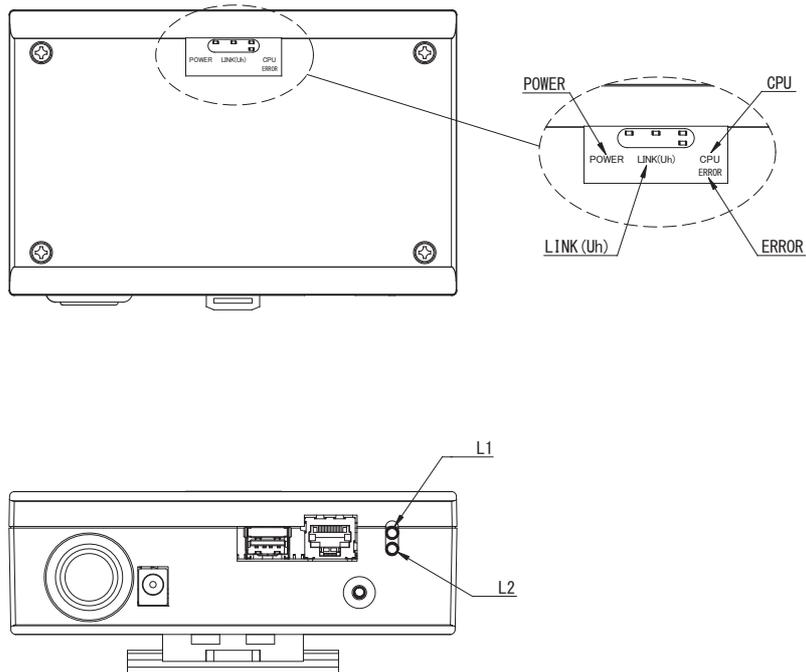
- SW300 Not used
- SW301 Test switch  
Set all bits to "OFF".
- SW302 Test button  
Not used during normal operation.
- SW100 Uh Line terminator resistor setting switch  
Set the Uh Line terminator resistor on the air conditioner side. Set SW100 to "OFF".
- SW700 Shutdown function / air-conditioning search mode function button  
Use this button to stop BACnet process and network process of the BN interface or to start up in the air-conditioning search mode. Note that button operation changes depending on how long it is depressed.

Time duration button is depressed	Operation
Less than 4 seconds	Stop BACnet process and network process of the BN interface.
4 seconds or more	Starts air-conditioning in the air-conditioning search mode. Use the air-conditioning search mode to set up equipment data in the indoor unit.



### 3-2. LED

LED	LED color	Use
POWER	Red	Power indicator
LINK(Uh)	Orange	Uh Line communication status indicator
ERROR	Red	Uh Line communication error indicator
CPU	Green	Communication status indicator in the BN interface
L1	Green	BACnet communication status indicator
L2	Red	BACnet communication status indicator, setting error indicator



## 4 Factory default settings

No.	Item	Factory default setting
1	IP address	IP address 192.168.1.100 Subnet mask 255.255.255.0
2	UDP port	47808 (0xBAC0)
3	Device object instance number	100
4	Address setting switch	1
5	Test switch	All OFF
6	Uh Line terminator resistor select switch	OFF

# 5 Test run

To perform test run of the BN interface, BACnet communication settings and the equipment data of the connected indoor units are required.

Items to be set during trial run

Equipment	Item		Setting method	
Outdoor unit	Uh Line address	Line address	Use the DIP switch on the outdoor unit circuit board.	
Indoor unit	Uh Line address	Line address	Use the address setting function of wired remote controller. (Except for simple wired remote controller)	
		Unit address		
		Central control address		
		Group address		
BN interface	IP address	IP address	Use Setting File Creation Software 2. (See Section 5-1.)	
		Network mask		
	BACnet communication device identification number	BACnet device object instance number		
	When using together with a central control device not compatible with Uh Line	Setting of old BN interface		
		Setting for combined use with old controller		
	When replacing with a BN interface that does not support Uh Line	Setting of old BN interface		
	Indoor unit information (DN code setting values)	Line address		When setup work (see Section 5-2) is performed, the BN interface reads out the set values from the indoor unit and records them on the SD card of the BN interface. Perform setup work after changing the device information of the indoor unit.
		Unit address		
		Central control address		
		Group address		
Operation mode setting range				
Temperature setting range				
Fan speed setting range				
Flap type				
Ventilation amount setting range				
Ventilation mode setting range				
Availability of ventilation operation				
Availability of save function				

## 5-1. BACnet communication settings

Set the IP address of the BN interface and the device object instance number of the BACnet communications. These setting can set from Setting File Creation Software 2. For details, contact your dealer.

## 5-2. Setting up equipment data in the indoor unit

Obtain the equipment data of the indoor unit that is controlled by the BN interface from the indoor unit via the Uh Line communication cable.

Preparing to set up equipment data in the indoor unit

- Central Control address must be set in the indoor unit you want to control.  
For information on how to set the address, refer to the installation manual of each indoor unit.
- Turn on all indoor and outdoor units. Set up as follows, waiting 10 minutes after turning on all the units.

Setup work

- Turn on the BN interface.
- When 10 minutes has elapsed since turning on the BN interface, hold down the shutdown button for 4 seconds or longer. L1 LED goes on.
- When the BN interface has started up normally, start reading the equipment data of the interface unit. During this operation L1 LED will be on while L2 LED will be blinking on the BN interface.
- When reading of equipment data in the indoor unit ends normally, the BN interface will automatically start preparing for BACnet communication. L1 LED on the BN interface is blinking.
- When the preparations for BACnet communications end normally, L1 LED and L2 LED of the BN interface will start blinking.
- If an error occurs during reading of equipment data from the indoor unit or when preparing for BACnet communications, L1 LED and L2 LED of the BN interface will go on.  
Determining the cause of such an error will require the use of engineering tools. For details, contact your dealer.

## 5-3. Cause of problem occurring during setup

Cause of problem	Cause	Action
The indoor unit cannot be found.	The indoor and outdoor units have not been turned on.	Make sure that indoor and outdoor units are turned on.
	The indoor and outdoor units are being initialized and it is not possible to communicate with them. LINK(Uh) LED does not blink at all	Make sure that indoor and outdoor units are turned on. Make sure they have been on for at least 10 minutes.
	The Uh Line cables have been incorrectly connected.	Connect the cables correctly.
	The central control address has not been set in the indoor units.	Make sure that the central control address has been set in the indoor units.
The central control address set in the indoor units are not unique.	The same central control address has been set in a number of indoor units.	Make sure that the central control address has been correctly set in the indoor units.

# 6 Turning off the BN interface

Press the shutdown button, then wait 5 minutes before turning it off.

### CAUTION

As the air-conditioning search mode will be engaged if the shutdown button is pressed for 4 seconds or longer, do not hold down the button.

## Manufacturer / Importer

Name of manufacturer ( 制造商 )

**Toshiba Carrier Corporation**

东芝开利株式会社

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212-0013, JAPAN

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Address, city, country

Route de Thil 01120 Montluel FRANCE

Name of the Importer/Distributor in UK

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