TOSHIBA

Carrier

FILE No. A10-029

BACnet System

SERVICE MANUAL

Model name:

Intelligent Server

BMS-LSV6UL

BACnet Server Software

BMS-STBN09UL

PRINTED IN JAPAN, Feb. 2012, TDOC

Contents

Safety Precautions 3

Before Installation 5

1. Overview 6

2. System Configuration 9

3. Starting / Ending a BACnet System 11

4. Procedure and Checks Until The Test Operation 15

5. Troubleshooting 18

6. Product Replacement Procedure In Case of Malfunction 20

Installation Manual of Intelligent Server

Installation Manual of TCS-NET Relay Interface

Appendix 1

Appendix 2

Safety Precautions

Important safety-related information is described on the product and in this Service Guide.
Read the following description on labels and symbols carefully and follow their directions.

[Explanation of labels]

Label	Explanation
DANGER	Indicates that the repair engineer and other third-party individuals in the vicinity may be exposed to immediate risk of death or serious injury if operation is not performed correctly.
WARNING	Indicates that the repair engineer and other third-party individuals in the vicinity may be exposed to a risk of death or serious injury if operation is not performed correctly.
CAUTION	Indicates that the repair engineer and other third-party individuals in the vicinity may be exposed to a risk of injury or that property damage (*) may result if operation is not performed correctly or from failure of product after operation.

(*): Property damage means expanded damages to assets, furniture, livestock and / or pets.

[Explanation of symbols]

Symbol	Explanation
	Indicates prohibited activity Specific prohibited actions are described in statements near the symbol.
	Indicates enforced action Specific enforced actions are described in statements near the symbol.
	Indicates caution (includes danger alert and warning) Specific content of caution is indicated in a picture or statement near the symbol.

DANGER	
 Turn off breaker	**Turn off breaker before performing work.** Otherwise, one may receive electric shock from the high-voltage electricity, resulting in death or injury.
 Prohibition	**Do not turn on the breaker when the cover of the unit is removed.** Otherwise, one may receive electric shock from the high-voltage electricity, resulting in death or injury.

WARNING	
 Check for ground wire	**Before fault diagnosis or beginning repair work, make sure that the ground wire is connected to the ground terminal of the unit.** If not, ground leakage may result in electric shock hazard.
 No alteration	**Do not alter the product.** Components of the unit should also not be taken apart or altered. Otherwise, it may result in fire, electric shock or injury.
 Use designated parts	**Use designated parts for replacement.** Using parts other than those designated may cause fire or electric shock.

⚠ WARNING

 Restricted area	**Do not allow unauthorized personnel other than repair engineers to enter areas where fault diagnosis and repair work is conducted.** Unauthorized persons may suffer injury from tools and disassembled parts.
 Insulation	**Connect lead wires with crimping terminals and turn the closed end upwards to avoid exposure to water.** Failure to perform this post-connection treatment may cause disasters, such as electricity leakage and fire, on the client's premises.
 Assembly wiring caution	**After repair, ensure that the assembly of disassembled parts and the connection and wiring of removed wires are completed so as to restore them to their former state. Be careful not to have the internal wires caught in the cover or other closures.** A defect in assembly or wire connection may cause disasters in the client premise, such as electricity leakage and fire.
 Insulation check	**After repair, check for insulation between the charged part and non-charged metal part (ground terminal) using an insulation resistance tester (500 V) and ensure at least 2 MΩ resistance.** If the insulation resistance value is low, it indicates the risk of disasters, such as electricity leakage and electric shock, on the client's premises.
 Electric shock caution	**In case of performing circuit inspection while the circuit is connected to a power source (if such condition is necessary), use rubber gloves and other measures to prevent contact with the charged part.** Otherwise, one will risk electric shock from contacting the charged part.
 Check after repair	**Upon completion of repair, ensure that there are no abnormalities.** Risks of fire, electric shock or injury may be prevented by inspection. Turn off the breaker before performing inspection.
	Test run the system after repair and make sure that there are no abnormalities including smoke. Risks of fire and electric shock may be prevented by inspection.
 Repair and Reinstall	**Repair and reinstallation must be performed by qualified professional.**

Before Installation

NOTE

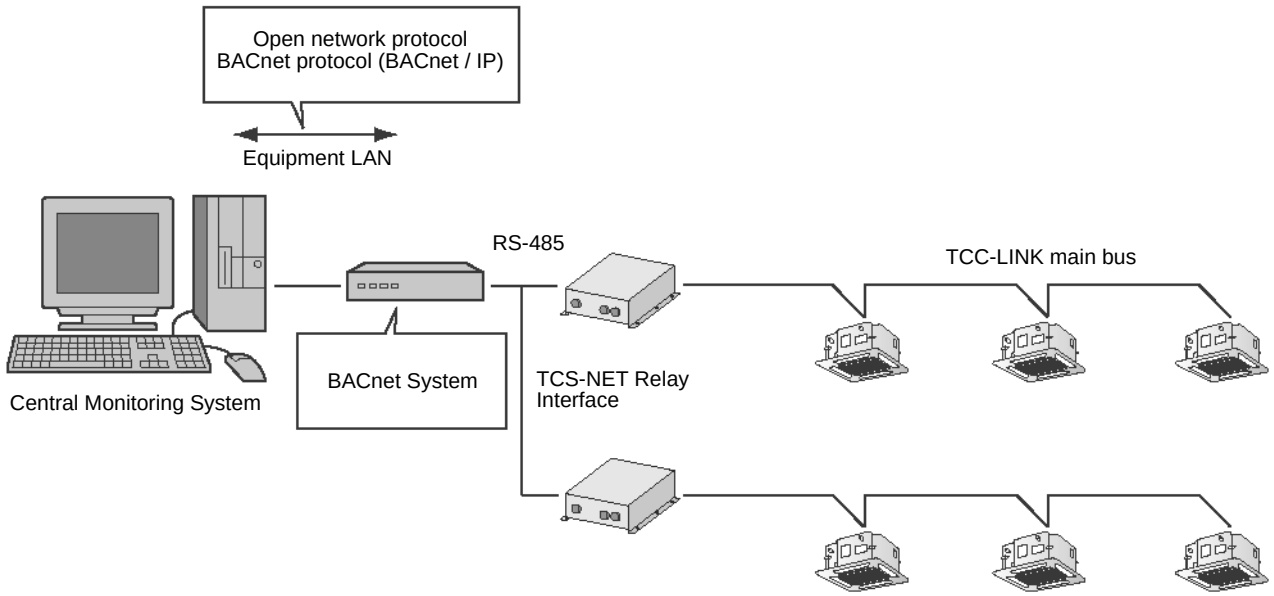
Before using the BACnet System, prepare the following software (sold separately):

Software that can be used
BACnet Server Software BMS-STBN□□ (□□: 09 or higher)

1 Overview

1-1. Overview

The BACnet System (Intelligent Server and BACnet Server Software) is a product that relays the communication between the Central Monitoring system and multi air conditioner to monitor / control a multi air conditioner for building from the building central monitoring system. A protocol of communications between the BACnet System and Central Monitoring system is BACnet™, an open network protocol for building automation.



CAUTION

The BACnet System consists of a hardware product, a box of the system, and a software product built in the system. Prepare the BACnet Server Software for each of the system.

	Item	Product name
1	Hardware product for BACnet System	Intelligent Server (BMS-LSV6UL)
2	Software product built in BACnet System (CF card)	BACnet Server Software (BMS-STBN09UL)

CAUTION

- Data is recorded on a CF card of BACnet Server Software in image format including software compatible with the operating system BACnet Protocol. It is not a Windows format, so files in the CF card cannot be viewed even if it is inserted into a PC slot. In addition, an error may occur on the CF card. In this case, replace the CF card.
- It is required to register the device information on the air-conditioner. To configure the settings, use the BACnet Setting File Software.
- For specifications on communications and variables, see the annexes Protocol Implementation Conformance Statement and BACnet Server Software Specifications.

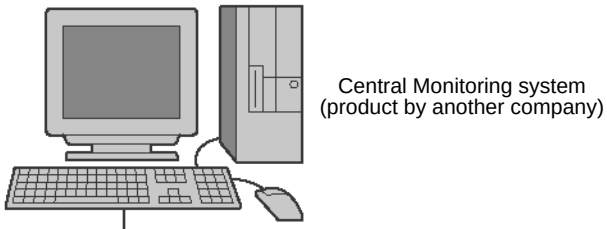
1-2. Trademarks

* CompactFlash and CF are trademarks of SanDisk Corporation.
* Ethernet is a registered trademark of Fuji Xerox Co., Ltd.

- “Windows XP”, “Windows Vista”, and “Windows 7” are either registered trademarks or trademarks of Microsoft Corporation in the United States and / or other countries.
- Adobe, the Adobe logo, Reader, and Acrobat are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and / or other countries.
- Install Shield is either a registered trademark or trademark of Flexera Software Inc. in the United States and / or other countries.
- All other company and product names are either registered trademarks or trademarks of the respective owners. In this manual such names are not indicated by ™, ® or © marks.
- BACnet: ASHRAE Building Automation Control Networks

2 System Configuration

2-1. System configuration diagram



Central Monitoring system
(product by another company)

NOTE

Set the BACnet System in the same LAN subnet as that of the Central Monitoring system or a BACnet product by another company.
(Ex)
IP address of the Central Monitoring system: 192.168.1.2
IP address of the BACnet System: 192.168.1.**
** is a number assigned by Central Monitoring manufacturer

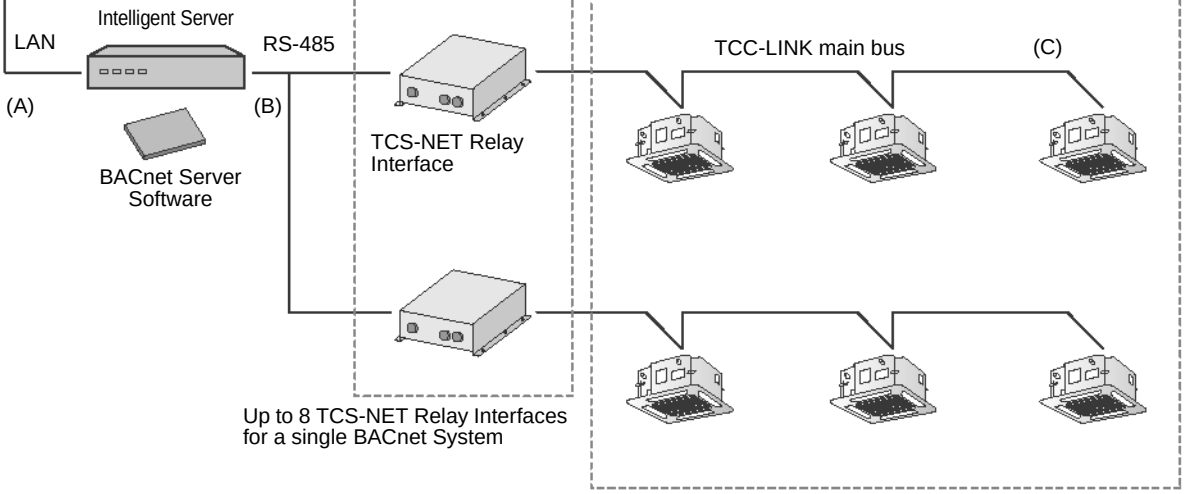
Switching HUB

BACnet product by another company
(Ex: For disaster prevention)

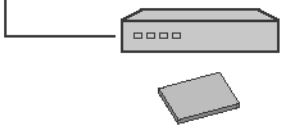
Up to 128 indoor units for a single BACnet System

NOTE

Super Digital Inverter (including Twin and Triple)



Up to 8 TCS-NET Relay Interfaces
for a single BACnet System



There is no upper limit for the number of BACnet Systems.

NOTE

The IP addresses need to be changed.

3 Starting / Ending a BACnet System

⚠ CAUTION

Cautions on starting a BACnet System

The Intelligent Server initializes the TCS-NET Relay Interface when the BACnet System is started. Confirm the following before turning on the Intelligent Server.

1. The RS-485 Cable is correctly connected between the Intelligent Server and TCS-NET Relay Interface.
2. The TCS-NET Relay Interface is electrified.
3. The power source of the Intelligent Server is electrified.

Cautions on ending a BACnet System

1. When turning off the Intelligent Server, perform the shutdown operation.
   - The shutdown operation saves the information stored in the memory to a file in a CF card.
   - If the Intelligent Server is turned off without the shutdown operation performed, the following errors may occur:
     The server cannot be restarted.
     The BACnet communication function does not work properly.
2. When the Intelligent Server is turned off, an alarm may be given on the Central Monitoring system. In this case, contact the administrator of the Central Monitoring system.

3-1. Activation and LED change

1. Confirm that the TCS-NET Relay Interface is electrified.
2. Confirm that a CF card (BACnet Server Software) is attached to the Intelligent Server.
3. Turn off the Intelligent Server.

The following page describes the LED status change from turning on the Intelligent Server to activating the BACnet communication function normally.
It takes approximately 10 minutes from turning on the Intelligent Server to activating the BACnet communication function normally. The time varies depending on the number of air-conditioners or the communication status to the Central Monitoring system.

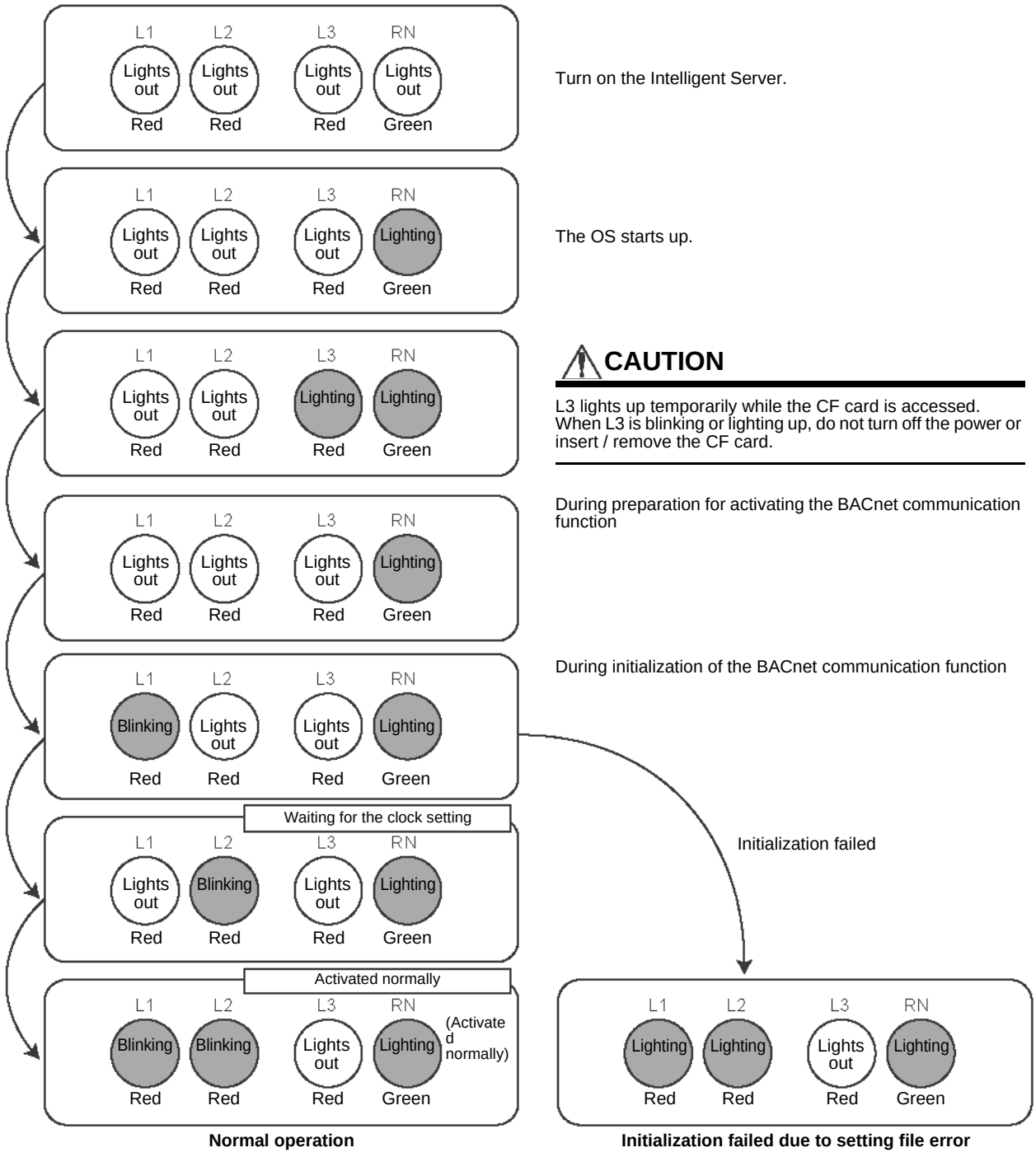


Figure 1. LED change during activation

3-2. Termination and LED change

1. Press the SDR button of the Intelligent Server, and wait until the shutdown is complete.
2. Turn off the Intelligent Server.

The following page describes the LED status change from pressing the SDR button of the Intelligent Server to the shutdown completion.
It takes approximately 5 minutes from pressing the SDR button of the Intelligent Server to the shutdown completion. The time varies depending on the number of air-conditioners or the communication status to the Central Monitoring system.

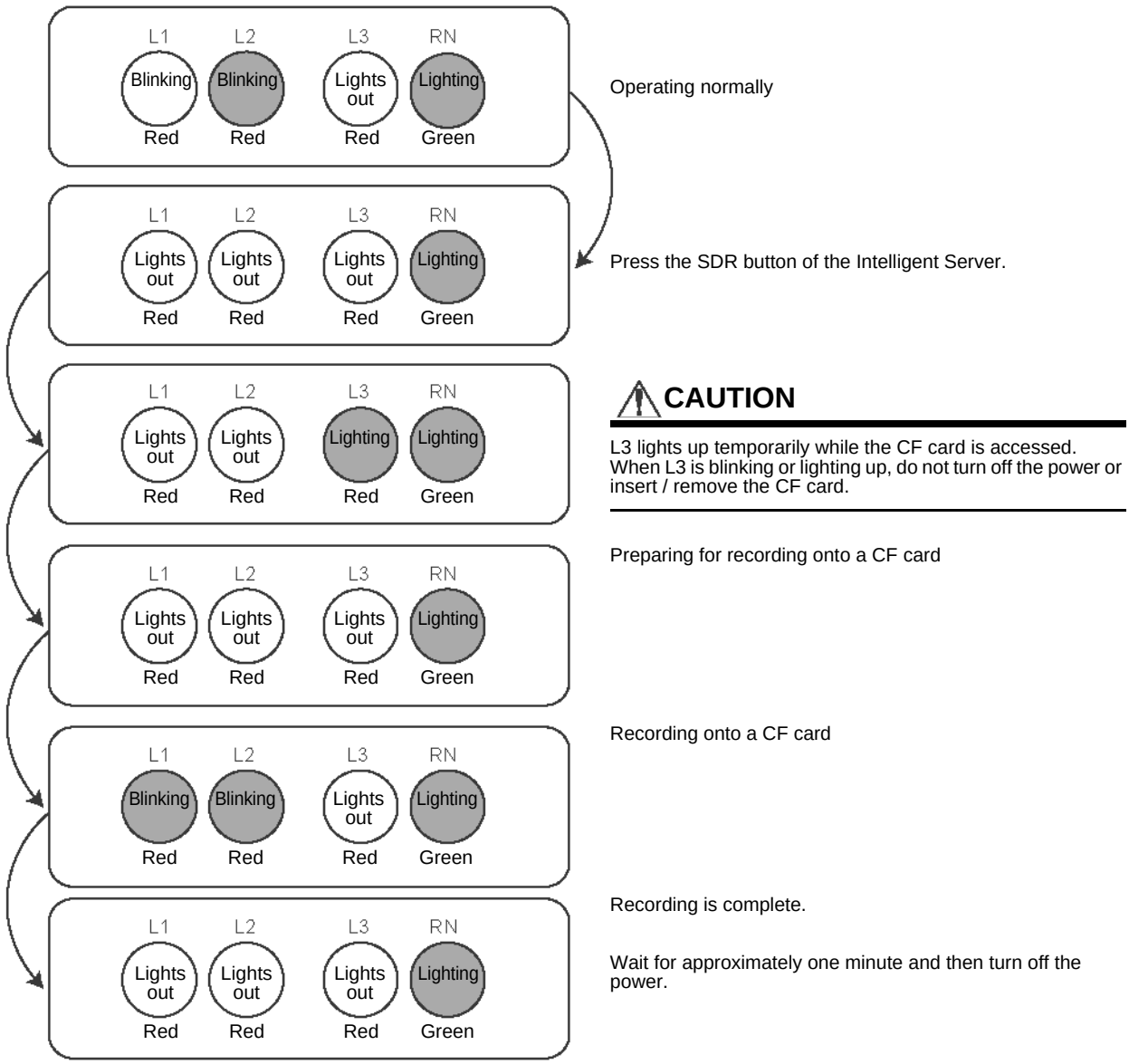


Figure 2. LED change during termination

4 Procedure and Checks Until The Test Operation

4-1. Preparation

4-1-1. Installing the device

For how to install the device, see the Installation Manual.

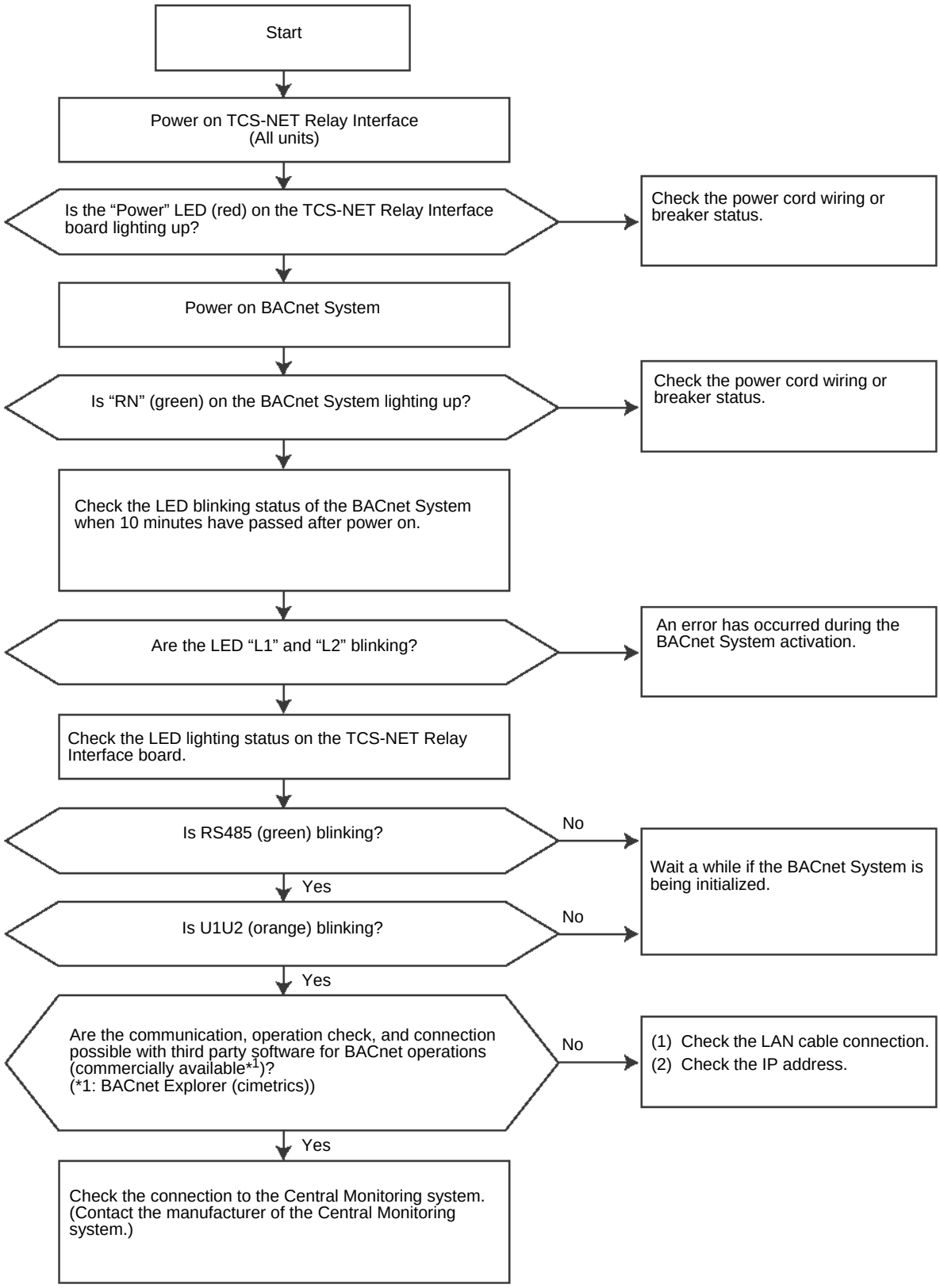
Chapter 7
Installation Manual of Intelligent Server
Chapter 8
Installation Manual of TCS-NET Relay Interface

4-1-2. Server settings

	Item	Description
1	Create a setting file	Create a setting file. • Air-conditioner data • BACnet system data • IP address of LAN1
2	Change the PC's IP address	Change the PC's IP address to "192.168.0.98".
3	Connect to LAN2	Connect a LAN cable between the PC and LAN2. IP address of LAN2: 192.168.0.99
4	Upload data	Upload the setting file data.

4-2. Test operation procedure

Follow the procedure blow to perform the test operation. If an error occurs in each step, see the failure diagnosis.



5 Troubleshooting

No.	Failure	Cause	Check and action
1	The “L1” LED (red) does not blink even when 10 minutes have passed after powering on the BACnet System.	1.The CF card is not attached properly. 2.The CF card is broken. 3.The OS does not start up.	• Check whether the OS of the BACnet System is starting. • Send the PING command from a laptop PC and check whether the BACnet System responds.
2	Both the “L1” LED (red) and “L2” LED (red) light up when 10 minutes have passed after powering on the BACnet System.	The content in the setting file of the BACnet System is not correct.	Check the content in the setting file.
3	The “RS485” LED (green) of the TCS-NET Relay Interface does not blink.	The RS485 communication is not established from the BACnet System.	Check whether the OS of the BACnet System is starting. Check the connection between the BACnet System and TCS-NET Relay Interface. • Pole of RS485 • Communication cable disconnection • Terminating resistance setting of RS485
		The address of the TCS-NET Relay Interface is not described in the setting file of the BACnet System.	• Check the content in the setting file. • Check the address setting of the TCS-NET Relay Interface.
4	The “U1U2” LED (orange) of the TCS-NET Relay Interface does not blink.	The content in the setting file of the BACnet System is not correct. (Wrong address information on the indoor unit)	Check the content in the setting file.
5	The BACnet System cannot be detected from the Central Monitoring system.	The BACnet System is not currently activating.	• Check whether the “L1” LED and “L2” LED of the BACnet System are blinking. • Check whether the BACnet System is sending I-am frames of BACnet.
		• Wrong LAN cable wiring • Wrong IP address setting • Wrong Subnet address setting	• Check whether communications can be established between the Central Monitoring system and BACnet System. (PING) • Check the IP address of the BACnet System.
6	The BACnet System does not respond to requests from the Central Monitoring system.	Wrong IP address setting of the communicating party	Check whether the IP address of the other party is registered as an IP address of another system in the setting file of the BACnet System.

6 Product Replacement Procedure In Case of Malfunction

6-1. Service components

There is no service component for this product.
Send a malfunctioning product.

	Item	Product name
1	Hardware product for BACnet System	Intelligent Server (BMS-LSV6UL)
2	Software product built in BACnet System (CF card)	BACnet Server Software (BMS-STBN09UL)

6-2. Replacement procedure

Follow the procedure below to replace the hardware and software (CF card) of the BACnet System.

1. **Power off the BACnet System.**
2. **Remove the LAN cable, RS485 communication cable, and power cord from their connectors on the box of the malfunctioning BACnet System.**
3. **Remove the malfunctioning BACnet System.**
4. **Attach a new CF card to a new BACnet System.**
5. **Install a new BACnet System.**
6. **See Chapter 4. “Procedure and Checks Until The Test Operation” to check the performance after replacement.**

CAUTION

Data is recorded on a CF card of BACnet Server Software in image format including software compatible with the operating system BACnet Protocol. It is not a Windows format, so files in the CF card cannot be viewed even if it is inserted into a PC slot. In addition, an error may occur on the CF card. In this case, replace the CF card.

Installation Manual of Intelligent Server

TOSHIBA

Carrier

BACnet Server

Installation Manual

Model name:

BMS-LSV6UL

- Thank you very much for purchasing this TOSHIBA / Carrier BACnet Server.
- Please read this manual carefully beforehand for proper installation of the BACnet Server.

NOTE

This product is designed exclusively for use in North America. Do not use it in a place other than North America.

Contents

Precautions for safety 3
Before installation 4
Names of each parts. 4
1 CF (Compact Flash) card installation 5
2 Setting. 5
3 Installation 6
4 Cable connection. 8

Precautions for safety

- Read these “Precautions for Safety” carefully before installation.
- The precautions described below include important items regarding safety. Observe them without fail. Understand the following details (indications and symbols) before reading the body text, and follow the instructions.
- After the installation work has been completed, perform a trial operation to check for any problems. Explain how to use and maintain the unit to the customer.
- Ask customer to keep this Manual at accessible place for future reference.

Indication	Meaning of indication
⚠ WARNING	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.
⚠ CAUTION	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.

Symbols	Meaning of symbols
	“⃠” Indicates prohibited items. The actual contents of the prohibition are indicated by a picture or text placed inside or next to the graphic symbol.
	“❗” Indicates compulsory (mandatory) items. The actual contents of the obligation indicated by a picture or text placed inside or next to the graphic symbol.

⚠ WARNING	
	• **Ask an authorized dealer or qualified installation professional to install or reinstall this unit.** Inappropriate installation 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 all main power supply switches before starting any electrical work.** Failure to do so may result in electric shock.
	• **Do not modify the unit.** A fire or an electric shock may occur.

⚠ CAUTION	
	• **Do not install this unit where flammable gas may leak.** If gas leaks and accumulates around the unit, it may cause a fire.
	• **Perform wiring correctly in accordance with specified the current capacity.** Failure to do so may result in short-circuiting, overheating or fire. • **Use predefined cable and connect them certainly. Keep the connecting terminal free from external force.** It may cause an exothermic or a fire.

EN

Before installation

NOTE

Prepare the following software (sold separately) before using the server.

Available software
BACnet Software BMS-STBN□□UL (□□ is 09 or higher)

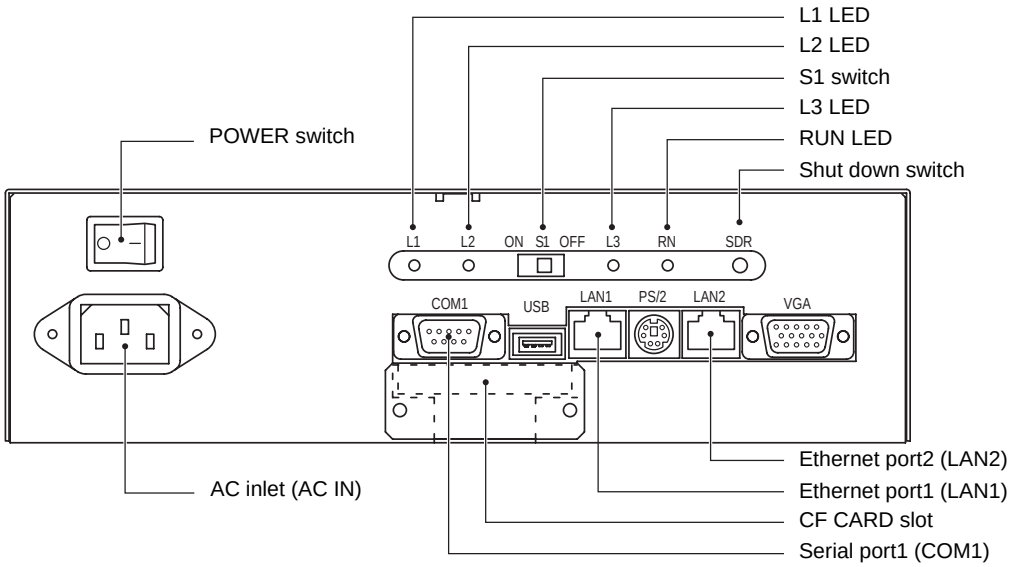
Check the following package contents.

No.	Item	Quantity	Remarks
1	BACnet Server	1	
2	Installation Manual	1	
3	Manual	1	
4	Cable	1	RS-485 cable for BACnet Server
5	Closed end wire joint	2	
6	Clamp filter	2	
7	Tie-wrap	2	For fixing the clamp filter
8	Power cable	1	

Use the following wiring materials to connect the communication cables and power cables. (locally procured)

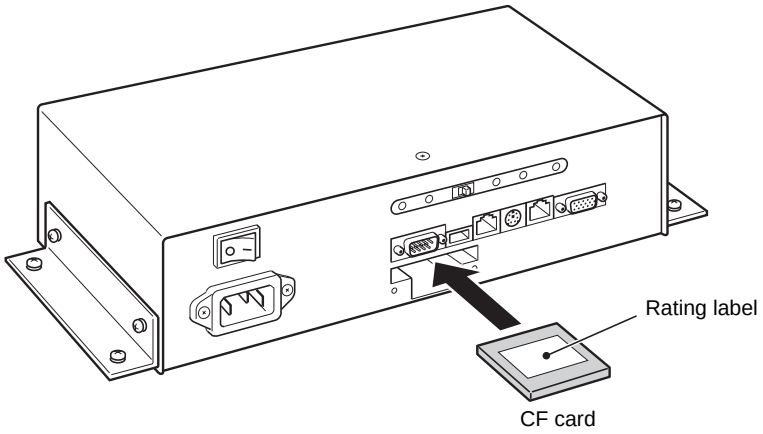
No.	Line	Description	
1	For RS-485	Type	2-core shield wire
		Wire size	AWG16 (1.25 mm^2), 1600 ft (500 m) max. (total length)
		Length	
2	For ethernet	Type	LAN cable (higher than Category 5, UTP) The appropriate use of straight cable / cross cable should be done depending on your system used.
		Length	320 ft (100 m) max.

Names of each parts



1 CF (Compact Flash) card installation

Insert the CF card (with the software sold separately)
Push the CF card fully into the slot.



1 Remove two screws and the cover plate and the CF card slot appears.

2 Insert the CF card with its rating label attached surface upward.
Confirm the CF card is surely pushed into the slot.

REQUIREMENT

- Do not insert or remove the CF (Compact Flash) card during power on of the BACnet Server. Doing so may cause a failure.
- If the CF (Compact Flash) card is not inserted properly, the BACnet Server will not work.

2 Setting

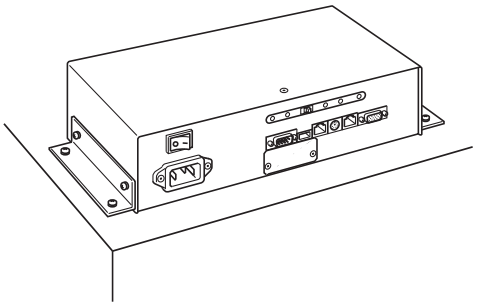
The setting is not required.
S1 is set to “OFF”.

3 Installation

■ BACnet Server installation method and orientation

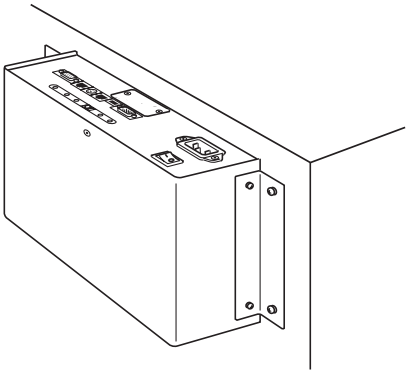
There are 2 types of setting methods and directions available for the server. Use the fixing metal plates attached when installing the server.

(1) Surface mount



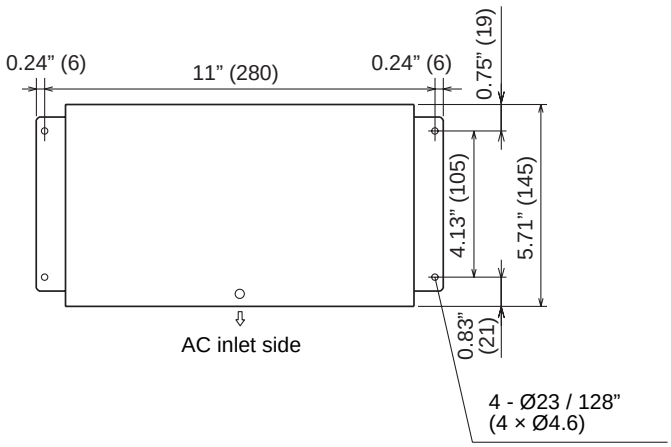
(2) Wall mount

Mount the server with the front face upward.



Fixing screw hole positions

Unit : inch (mm)



REQUIREMENT

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

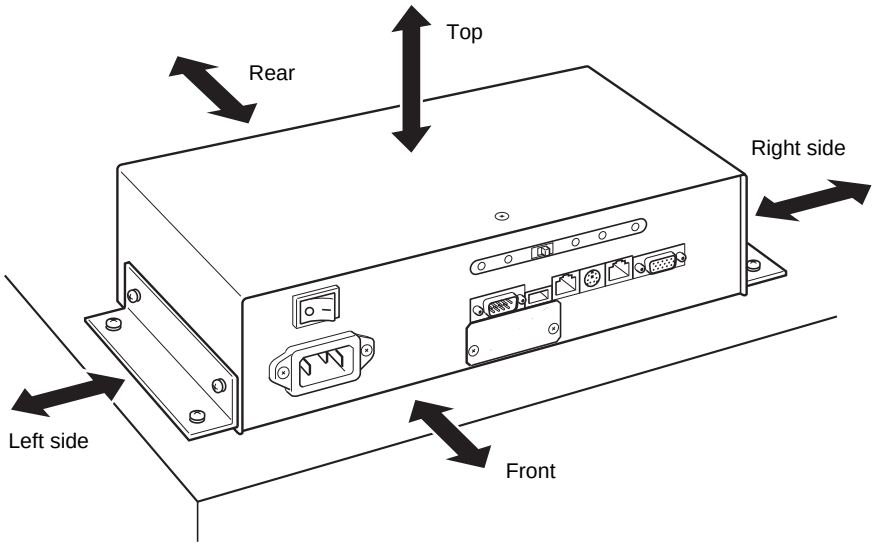
- Humid or wet place
- Dusty place
- Place exposed to direct sunlight
- Place where there is a TV set or radio within one meter
- Place exposed to rain (outdoors, under eaves, etc.)

■Installation space and maintenance space

The installation space and the maintenance space must be determined before installation.
These spaces depend on installation method.

Installation space

The values in the following table are required for installation space in each direction.
Select an installation place that allows good air ventilation.



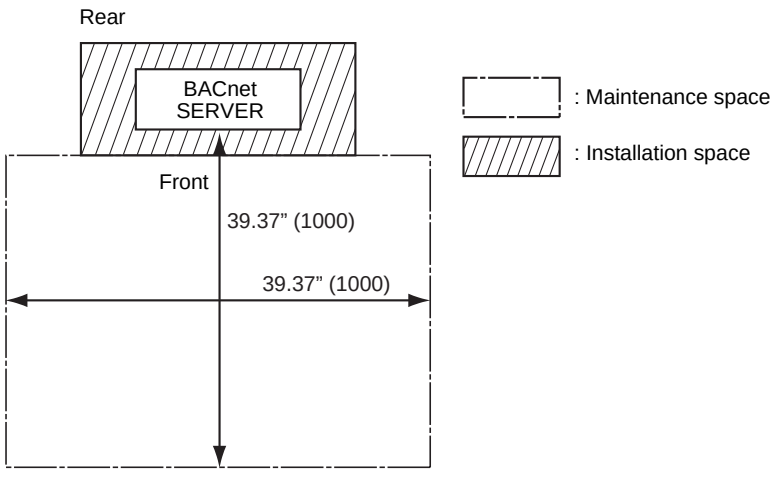
Unit : inch (mm)

Item	Direction	Surface mount	Wall mount
Installation space	Top	3.94” (100)	1.97” (50)
	Bottom	0	0
	Front	3.94” (100)	3.94” (100)
	Rear	Location adjacent to wall permitted (*1)	
	Right side	1.97” (50)	3.94” (100)
	Left side	1.97” (50)	3.94” (100)

(*1) “Location adjacent to wall permitted” means that the unit can be installed close to the wall on that side.

Maintenance space is required for installation and maintenance of the unit.

Unit : inch (mm)



EN

4 Cable connection

■ AC power cable connection

REQUIREMENT

Power cable is not supplied for the BACnet Server. Insert a three core power cable applicable to the standard of the country you use. Be sure to connect the earth line of the power cable securely.

- Confirm that the power supply switch of this unit is cut off.
- Insert an AC power cable into the AC inlet of the unit.
- Connect the power cord plug to an outlet (120 VAC).

REQUIREMENT

- Attached power supply wire is for AC 120 V.
- Disconnect the appliance from the main power supply. Connect this appliance to the main power supply by a circuit breaker or a switch with a contact separation of at least 0.118” (3 mm).
- Make sure that the outlet is earthed.

■ Ethernet wire connection

Insert the Ethernet wire into the Ethernet port1 (LAN1).

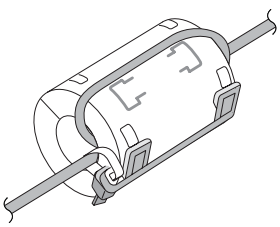
■ Serial port (RS-485) connection

- Confirm that the power supply for the BACnet Server is shut off.
- Connect RS-485 cable (packaged with the BACnet Server) to Serial port 1 (COM1).
  Fix the cable to the BACnet Server by the fixing screws (two locations on both sides) attached to the connector on RS-485 cable.

REQUIREMENT

Attach the supplied clamp filter to the LAN cable and RS-485 cable.
* Wind the LAN cable and RS-485 cable around the clamp filter as shown below when attaching the filter to the cable.
After attaching the filter, fix it to the LAN cable and RE-485 cable using a supplied tie-wrap.
* Attach the clamp filter as near the main unit as possible.

LAN cable
RS-485 cable



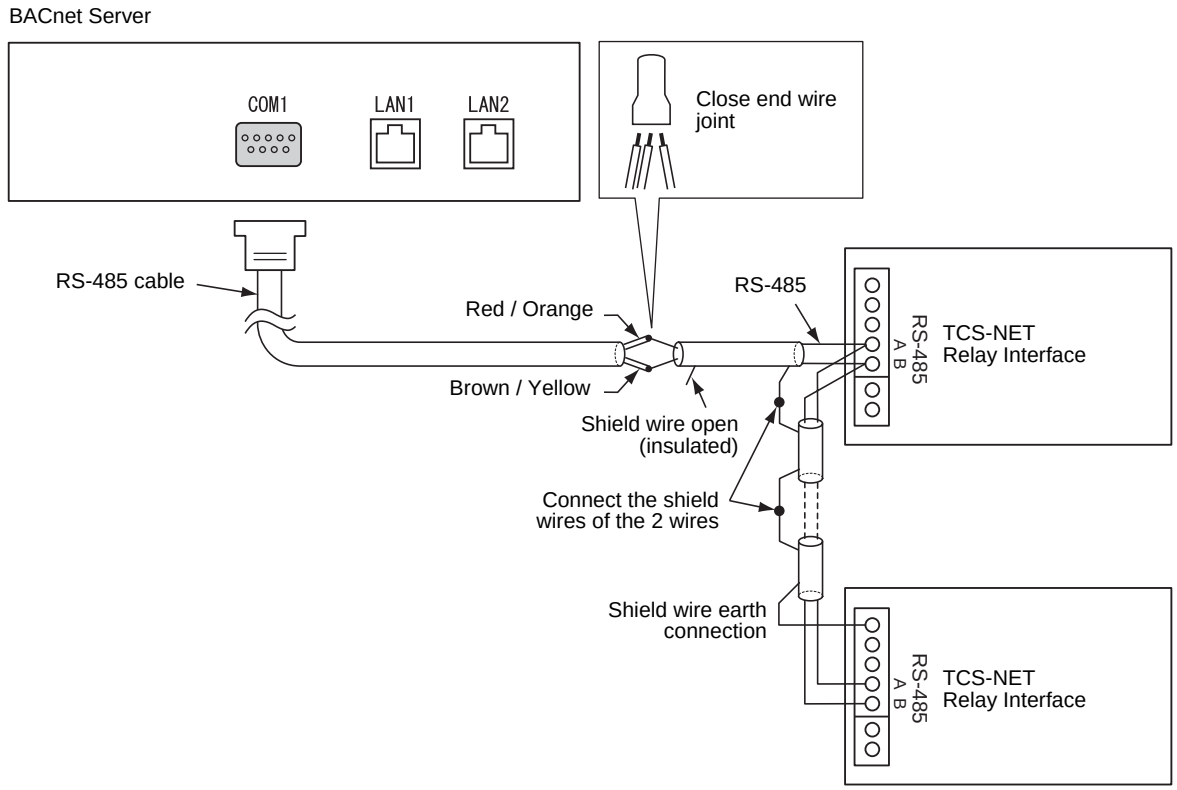
Connection to the TCS-NET Relay Interface

- **TxRx(+) Connection**

Connect three of the four wires of RS-485 wire (red wire / orange wire / wire from the terminal board RS-485 A of the TCS-NET Relay Interface) together with the closed end wire joint. The red and orange wires can be connected directly to the terminal board RS-485 A of the Relay Interface.

- **TxRx(-) Connection**

Connect three of the four wires of RS-485 wire (brown wire / yellow wire / wire from the terminal board RS-485 B of the TCS-NET Relay Interface) together with the closed end wire joint. The brown and yellow wires can be connected directly to the terminal board RS-485 B of the Relay Interface.



NOTE

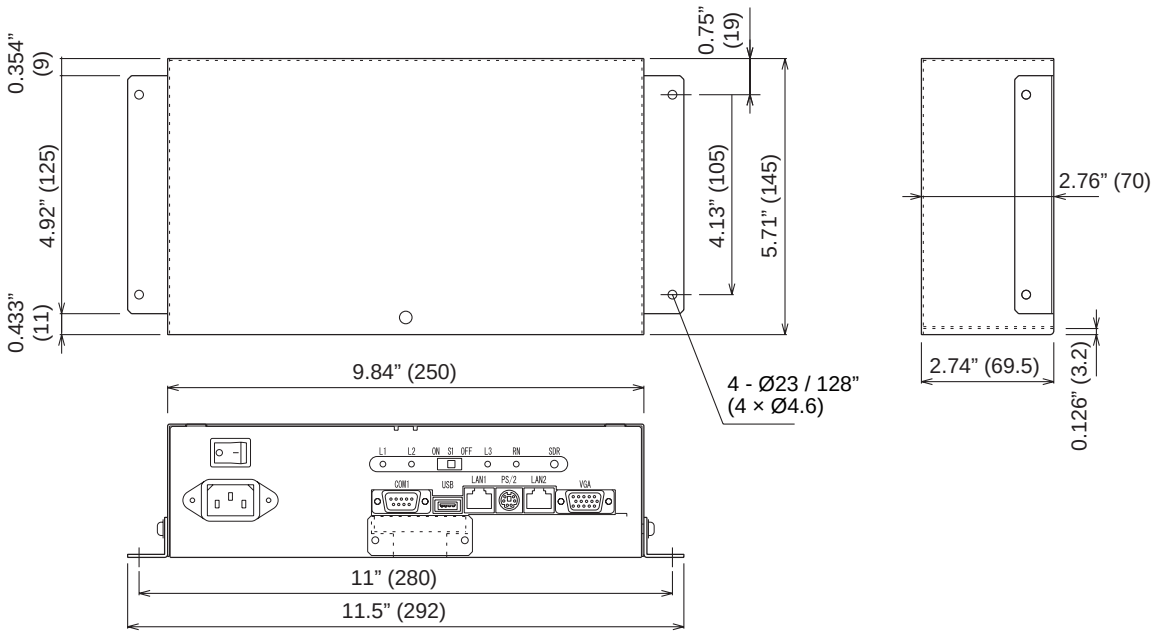
The RS-485 signal wire has polarity. If connected with incorrect polarity, the unit will not work.
Do not connect or disconnect the wire during control operation.
Doing so may cause a malfunction.

Specifications

Power Supply	120 VAC, 60 Hz
Current	0.2 A
Operating temperature / humidity	32 to 104 °F (0 to 40 °C), 10 to 90 % RH (no condensation)
Storage temperature	-4 to 140 °F (-20 to +60 °C)
Dimension	9.84” (W) x 2.76” (H) x 5.71” (D) inch (250 (W) x 70 (H) x 145 (D) mm) (11.5” (292) (W) including the fixing metal plate)
Mass	3.31 lb (1.5 kg)
COM port	RS-485 (9-pin, D-SUB)
LAN	10BASE-T / 100BASE-TX

External view

Unit : inch (mm)



Trademarks:

- BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.).
- Compact Flash and CF are trademarks of SanDisk Corporation.
- Ethernet is a registered trademark of Xerox Corporation.

TOSHIBA CARRIER CORPORATION
336 TADEHARA, FUJI-SHI, SHIZUOKA-KEN 416-8521 JAPAN

EH99881101

Installation Manual of TCS-NET Relay Interface

TOSHIBA

Carrier

TCS-NET RELAY INTERFACE

Installation Manual

TCS-NET Relay Interface

Model name:

BMS-IFLSV4UL

- Thank you very much for purchasing this TOSHIBA / Carrier TCS-NET Relay Interface.
- Please read this manual carefully beforehand for proper installation of the relay interface.

Contents

1 Precautions for safety 2
2 Introduction 3
3 Before installation 4
4 Installation 4
5 Connection of power cables / earth wires / communication cables 5
6 Setting 8
7 Test run 9

1 Precautions for safety

- Read these “Precautions for Safety” carefully before installation.
- The precautions described below include important items regarding safety. Observe them without fail. Understand the following details (indications and symbols) before reading the body text, and follow the instructions.
- After the installation work has been completed, perform a test run to check for any problems. Explain how to use and maintain the unit to the customer.
- Ask customer to keep this Manual at accessible place for future reference.

Indication	Meaning of Indication
⚠WARNING	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.
⚠CAUTION	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.

Symbols	Meaning of Symbols
	“⃠" Indicates prohibited items. The actual contents of the prohibition are indicated by a picture or text placed inside or next to the graphic symbol.
	“❗" Indicates compulsory (mandatory) items. The actual contents of the obligation indicated by a picture or text placed inside or next to the graphic symbol.

⚠WARNING	
	• **Ask an authorized dealer or qualified installation professional to install or reinstall this unit.** Inappropriate installation 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 all main power supply switches before starting any electrical work.** Failure to do so may result in electric shock.
	• **Do not modify the unit.** A fire or an electric shock may occur.

⚠CAUTION	
	• **Do not install this unit where flammable gas may leak.** If gas leaks and accumulates around the unit, it may cause a fire.
	• **Perform wiring correctly in accordance with specified the current capacity.** Failure to do so may result in short-circuiting, overheating or fire. • **Use predefined cable and connect them certainly. Keep the connecting terminal free from external force.** It may cause an exothermic or a fire.

EN

2 Introduction

■ Applications / functions / specifications

Applications

- The TCS-NET Relay Interface is used to connect air conditioners (with TCC-LINK installed) to the air conditioning control system or BACnet system.

Functions

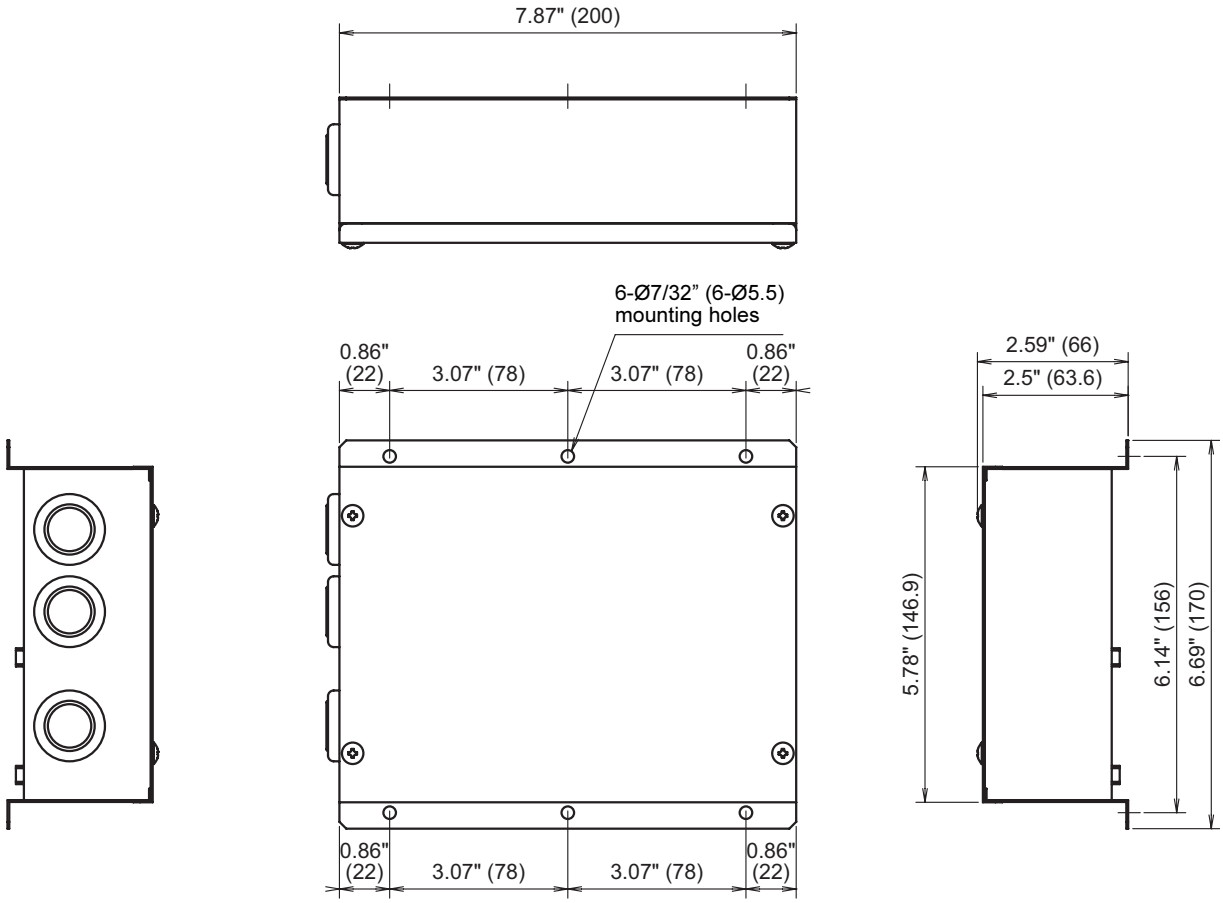
- The TCS-NET Relay Interface converts signals between TCC-LINK and RS-485.

Specifications

Power supply	120 VAC, 60 Hz
Power consumption	3 W
Operating temperature / humidity	32 to 104 °F (0 to 40 °C), 10 to 90% RH (no condensation)
Storage temperature	-4 to 140 °F (-20 to +60 °C)
Chassis material	Galvanized sheet metal 0.8 t
Dimensions	2.59” (H) x 6.69” (W) x 7.87” (D) inch (66 (H) x 170 (W) x 200 (D) mm)
Mass	2.43 lb (1.1 kg)

■ External view

Unit: inch (mm)



3 Before installation

Check the following package contents.

No.	Item	Quantity	Remarks
1	TCS-NET Relay Interface	1	
2	Installation Manual	1	
3	Screw	4	5/32” x 0.47” (M4 x 12 mm) tapping screws
4	Cable clamp	1	

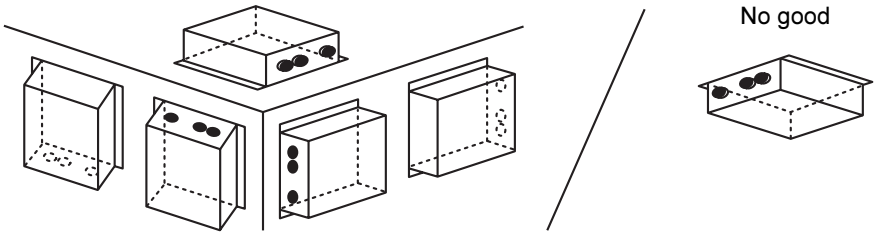
Use the following wiring materials to connect the communication cables and power cables. (locally procured)

No.	Line	Description	
1	For TCC-LINK	Type	2-core shielded wires
		Wire size	AWG16 (1.25 mm^2), 3200 ft (1000 m) max. AWG14 (2.00 mm^2), 6500 ft (2000 m) max.
		Length	(total length including air conditioner area)
2	For RS-485	Type	2-core shielded wires
		Wire size	AWG16 (1.25 mm^2), 1600 ft (500 m) max.
		Length	(total length)
3	For power	Type	UL, CSA approved power supply wire
		Wire size	AWG18 (0.75 mm^2), 160 ft (50 m) max.

4 Installation

■ TCS-NET Relay Interface installation method and orientation

There are five installation methods for this relay interface as shown below: surface mount and wall mounts. Use the attached screws.



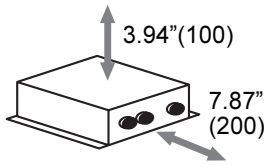
REQUIREMENT

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.)

■ 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.



EN

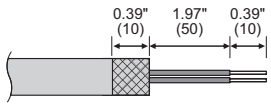
5 Connection of power cables / earth wires / communication cables

⚠ CAUTION

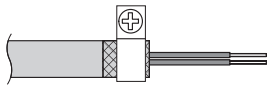
- The RS-485 communication cables have polarity. Connect A to A, and B to B. If connected with incorrect polarity, the unit will not work.
- The TCC-LINK communication cable have no polarity.

Connect power cables, earth wires, and communications cables to the specified terminals on the terminal block.

Length of stripped RS-485 communication cable (address 1)

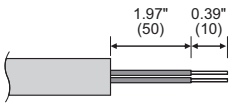


Clamping RS-485 communication cable (address 1)

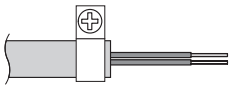


The RS-485 communication cable must be earthed on address 1 (Relay Interface address SW=1) TCS-NET Relay Interface. Fix the shielded wire of RS-485 communication cable with metal cable clamp and screw it to the chassis to earth it.

Length of stripped RS-485 (address of other than 1) and TCC-LINK communication cable

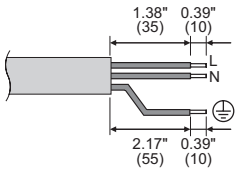


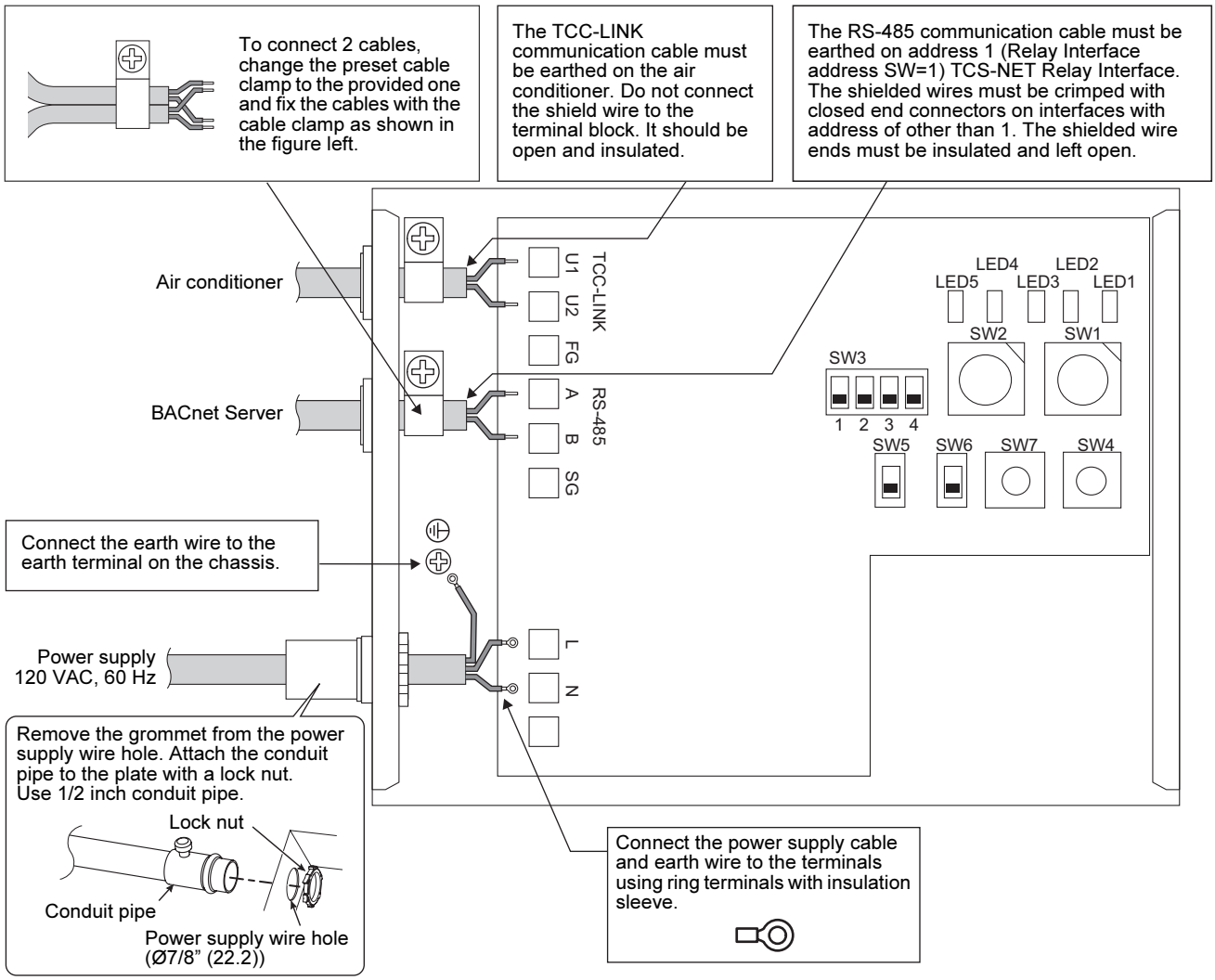
Clamping communication cable



Do not connect the shield wire to the earth. It should be open and insulated.

Length of stripped power cable





REQUIREMENT

Disconnect the appliance from the main power supply.

This appliance must be connected to the main power supply by a circuit breaker or switch with a contact separation of at least 3mm.

Fasten the screws to the terminal with torque of 0.5 Nm.

EN

■ Wiring connection

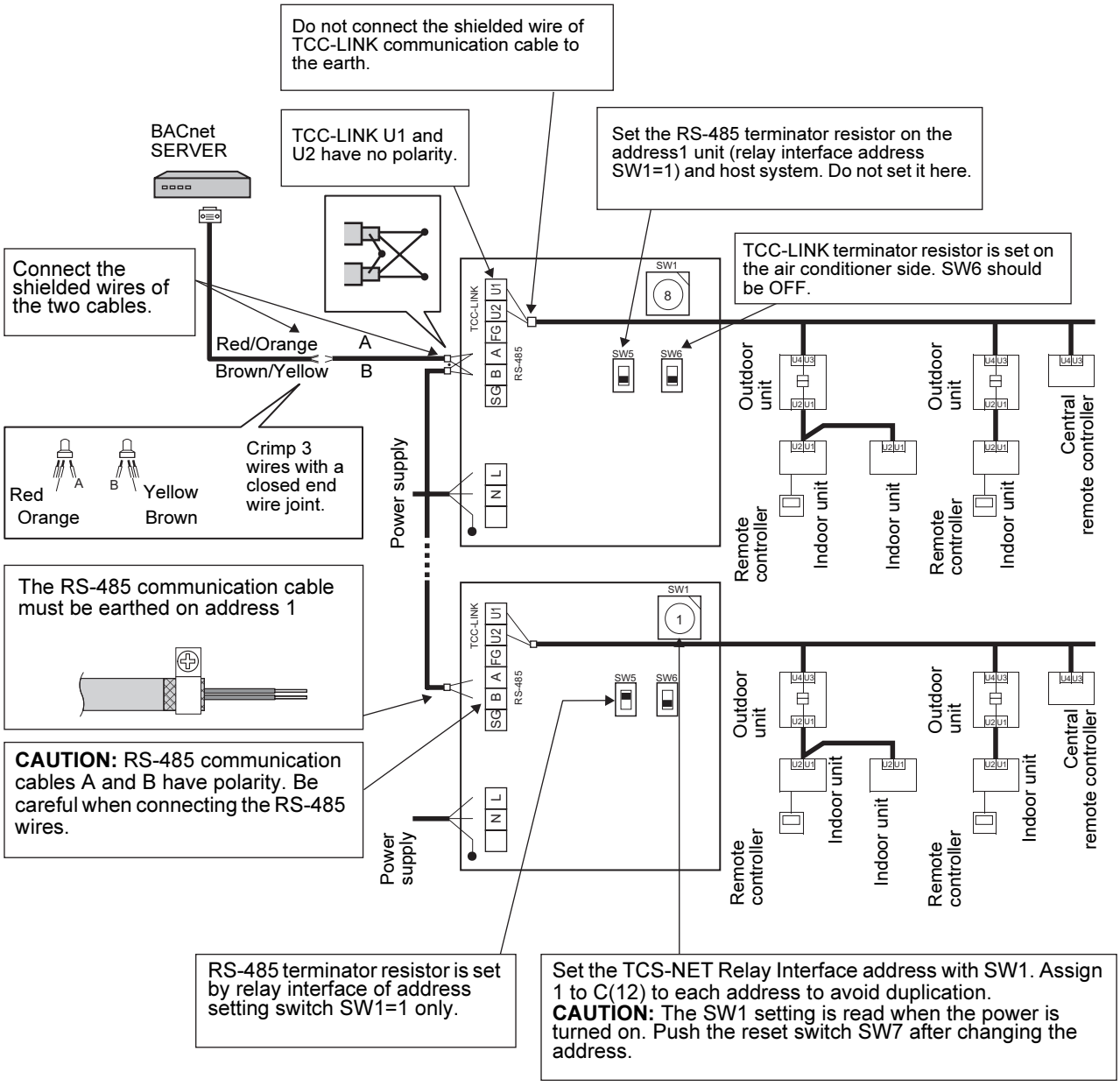
The following describes a connection example when two or more TCS-NET Relay Interface units are used.

Terminator resistor setting (See “6 Setting” for the setting method.)

- Set the RS-485 terminator resistor to “120 ohm” for address1 (Relay Interface address SW1=1) TCS-NET Relay Interface unit, and set to “open” for other units.
- Set the TCC-LINK terminator resistor to “open” as it is set on the air conditioner side.

Shield earthing

- The RS-485 communication cable must be earthed on address 1 (Relay Interface address SW=1) TCS-NET Relay Interface. Fix the shielded wire of RS-485 communication cable with metal cable clamp and screw it to the chassis to earth it. The shielded wires must be crimped with closed end connectors on interfaces with address of other than 1. The shielded wire ends must be insulated and left open.
- Do not connect the shield wire to the terminal block. It should be open and insulated. The TCC-LINK communication cable must be earthed on the air conditioner.



6 Setting

The following settings are necessary to use TCS-NET Relay Interface.

- SW1 TCS-NET Relay Interface address set switch
  When two or more TCS-NET Relay Interface are used, set a different address for SW1 to avoid address duplication.
  Assign addresses in an ascending order.

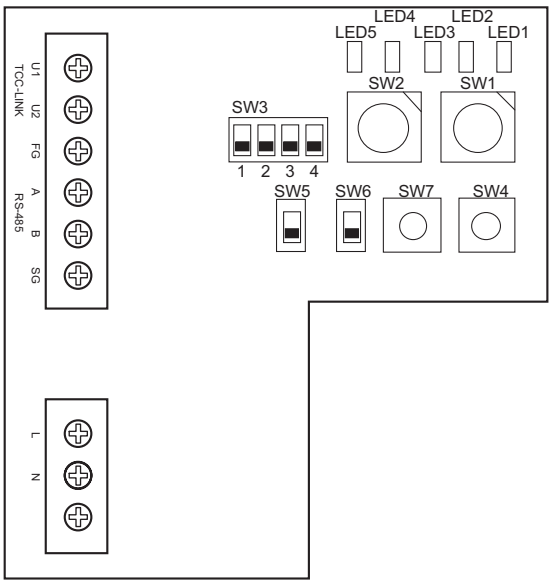
⚠ CAUTION

- **Set relay interface addresses according to the air conditioner address table.**
  For the relay interface whose address SW1=1, perform terminator resistor setting.
- **When the SW1 setting has been changed, push the reset switch SW7. The new address setting is read.**

- SW2 Test switch
- SW3 Test switch
- SW4 Test switch

  Not used during operation.
  Set these switches to zero (0) or "all OFF".

- SW5 RS-485 terminator resistor select switch
  Set "120 ohm" only when the relay interface address SW=1, and set "open" for other relay interfaces.
- SW6 TCC-LINK terminator resistor select switch
  The TCC-LINK terminator resistor is set on the air conditioner side. Set SW6 to "open".
- SW7 Reset switch
  When performing an address setting with SW1, push this reset switch after the address setting to read the set value.



SW1	Relay interface address set switch	
	1-C	Relay interface address
	0, D-F	Not used
SW2	Test switch (0 usually)	
SW3	Test switch (all OFF usually)	
SW4	Test switch	
SW5	RS-485 terminator resistor select switch	
		
	120 ohm	Open
SW6	TCC-LINK terminator resistor select switch	
		
	100 ohm	Open
SW7	Reset switch	
LED1	Power indicator	
LED2	RS-485 communication status indicator	
LED3	TCC-LINK Communication status indicator	
LED4	TCC-LINK Communication error indicator	
LED5	Test indicator	

REQUIREMENT

- **RS-485 terminator resistor select switch SW5.**
  Set "120 ohm" only when the TCS-NET Relay Interface address SW=1, and set "open" for other relay interfaces.
- **The TCC-LINK terminator resistor is set on the air conditioner side. Set SW6 to "open".**

EN

7 Test run

■ Before starting test run

Complete the air conditioner test run.
Turn on the power of the TCS-NET Relay Interface after all cable connections and settings are completed.
Then turn on power of the BACnet Server.

■ Test run

Check the TCC-LINK and RS-485 communication status of the TCS-NET Relay Interface by checking the blinking of the LEDs.

LED		Normal operation	Abnormal operation
LED1	Power indicator	ON	OFF
LED2	RS-485 communication status indicator	Blinking	OFF
LED3	TCC-LINK communication status indicator	Blinking	OFF
LED4	TCC-LINK communication error indicator	OFF	ON
LED5	TEST indicator	OFF	ON

LED1 Power indicator
- ON: While power is on
- OFF: When power is not turned on

LED2 RS-485 communication status indicator
- Blinking: When RS-485 communication with the host system is normal
- OFF: When RS-485 communication with the host system is disabled

LED3 TCC-LINK communication status indicator
- Blinking: When TCC-LINK communication with any of the air conditioners is normal
- OFF: When TCC-LINK communication with all air conditioners is disabled

LED4 TCC-LINK communication error indicator
- ON: This LED will be turned on, when there is no reply from the air conditioner response to signals from the Relay Interface.
- OFF: This LED will be turned off, when there is reply from the air conditioner response to signals from the Relay Interface.

LED5 Test indicator
- Not used in normal operation
- Displayed only in the test mode

Trademarks

- BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.).

MEMO

Appendix 1

TOSHIBA
Carrier

PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (NORMATIVE)

Model Name

BMS-STBN09UL

1 February 2012

TOSHIBA
Carrier

ANNEX A - PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (NORMATIVE)

BACnet Protocol Implementation Conformance Statement

Date	1 February 2012
Vender Name	Toshiba Carrier Corporation
Product Name	Toshiba BACnet Server
Product Model Number	BMS-STBN09UL
Application Software Version	-
Firmware Revision	-
BACnet Protocol Revision	ANSI/ASHRAE Standard 135-2004

Product Description:

1. Applicable air conditioner

1) VRF System

- Super Modular Multi System - i

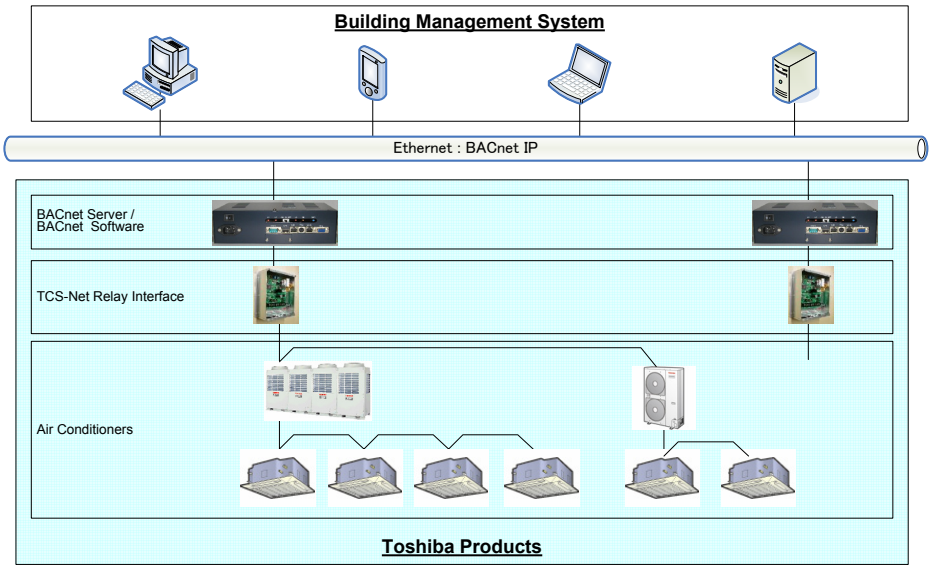
2) Light Commercial model

- Super Digital Inverter Series(*)

(*) TCB-PCNT31TLUL is necessary except High wall Series.

2. System Configuration

2.1 Sample Control Wiring diagram



TOSHIBA
Carrier

2.2 System Configuration and Limits

Item	Model Name	Specification	Connectable Q'ty
BACnet Server	BMS-LSV6UL	Hardware for BACnet Software	-
BACnet Software	BMS-STBN09UL	Protocol transformation RS-485 to BACnet IP	One BACnet software per one BACnet Server
TCS-Net Relay Interface	BMS-IFLSV4UL	Protocol transformation TCC-LINK to RS-485	Max. 8 units per one Intelligent Server Max. 64 indoor units per one Relay I/F
Indoor unit			Max. 128 units per one BACnet System

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)

List all BACnet Interoperability Building Blocks Supported (Annex K):

Data Sharing	Event & Alarm Management	Scheduling	Trending	Device & Network Management
DS-RP-B **DS-RPM-B** **DS-WP-B** **DS-WPM-B** **DS-COVU-B**	**AE-N-B**			**DM-DDB-B** **DM-DOB-B** **DM-DCC-B**

Segmentation Capability:

☐ Segmented requests supported Window Size _____

☐ Segmented responses supported Window Size _____

TOSHIBA
Carrier

Standard Object Types Supported:

Object-Type	Supported	Dynamically Creatable	Dynamically Deletable
Accumulator	☐	☐	☐
Analog Input	☑	☐	☐
Analog Output	☑	☐	☐
Analog Value	☐	☐	☐
Binary Input	☑	☐	☐
Binary Output	☑	☐	☐
Binary Value	☐	☐	☐
Calendar	☐	☐	☐
Command	☐	☐	☐
Device	Yes	N/A	N/A
Event Enrollment	☐	☐	☐
File	☐	☐	☐
Group	☐	☐	☐
Loop	☐	☐	☐
Multi-state Input	☑	☐	☐
Multi-state Output	☑	☐	☐
Notification Class	☑	☐	☐
Program	☐	☐	☐
Schedule	☐	☐	☐

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: _____

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

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

Character Sets Supported:

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

☑ ANSI X3.4	☐ IBM™/Microsoft™ DBCS	☐ ISO 8859-1
☐ ISO 10646 (UCS-2)	☐ ISO 10646 (UCS-4)	☐ JIS C 6226

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

_____

_____

_____

Appendix 2

TOSHIBA
Carrier

1 February 2012

BACnet Server Software Specifications
(Network Object and Variables Specifications)

Model Name

BMS-STBN09UL

BACnet are trademarks or registered trademarks of American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

1. GENERAL OUTLINE 3

1.1 APPLICABLE AIR CONDITIONER 3
1.2 SYSTEM CONFIGURATION 4

2 COMMUNICATION PROTOCOL SPECIFICATION 5

3. OBJECT LIST 6

4. OBJECT INFORMATION 7

4.1 GATEWAY DEVICE 7
4.2 ON / OFF STATUS MONITOR 10
4.3 ON / OFF STATUS CONTROL 12
4.4 OPERATION MODE MONITOR 14
4.5 OPERATION MODE CONTROL 16
4.6 FAN SPEED MONITOR 18
4.7 FAN SPEED CONTROL 20
4.8 LOUVER MONITOR 22
4.9 LOUVER CONTROL 24
4.10 SET TEMPERATURE MONITOR 26
4.11 SET TEMPERATURE CONTROL 28
4.12 ROOM TEMPERATURE 30
4.13 PERMIT / PROHIBIT OF LOCAL OPERATION MONITOR 32
4.14 PERMIT / PROHIBIT OF LOCAL OPERATION CONTROL 34
4.15 ERROR STATUS 36
4.16 ERROR CODE 38

1. General Outline

This document is applied to the communication specifications of BACnet Software (Model Name: BMS-STBN09UL).

1.1 Applicable air conditioner

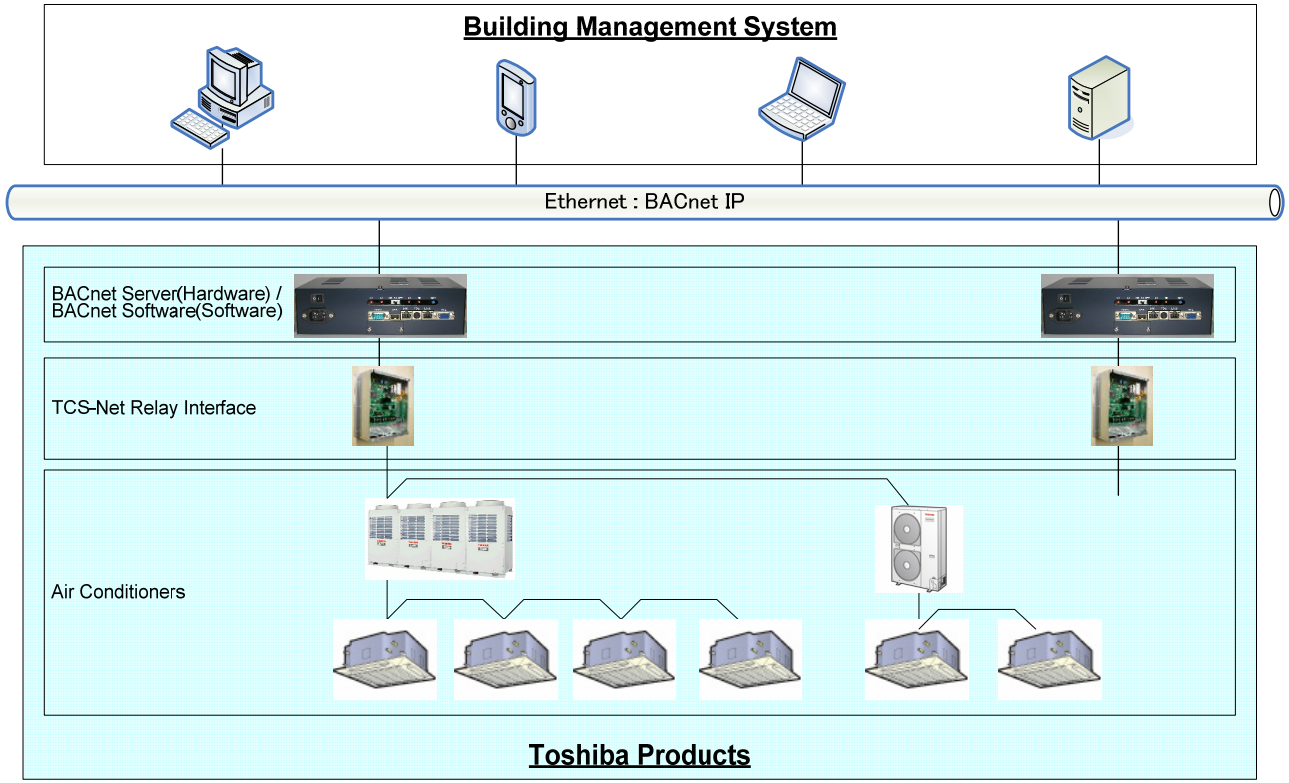
1) VRF System
- Super Modular Multi System - i (SMMS-i)

2) Light Commercial model
- Super Digital Inverter Series(*) (SDI)

(*) - TCB-PCNT31TLUL is necessary except High wall Series.

1.2 System Configuration

1.2.1 Sample Control Wiring diagram



1.2.2 System Configuration and Limits

Item	Model Name	Specification	Connectable Q'ty	Note
BACnet Server	BMS-LSV6UL	Hardware for BACnet Software	-	
BACnet Software	BMS-STBN09UL	Protocol transformation RS-485 to BACnet IP	One BACnet software per one BACnet Server	
TCS-Net Relay Interface	BMS-IFLSV4UL	Protocol transformation TCC-LINK to RS-485	Max. 8 units per one BACnet Server Max. 64 indoor units per one Relay I/F	
Indoor unit			Max. 128 units per one BACnet Server	

2 Communication Protocol Specification

2.1 Protocol Outline
- BACnet/IP
- ANSI/ASHRAE 135-2004
- UDP/IP

2.2 Ethernet Header
- 10BASE-T / 100BASE-T

2.3 IP Header
- Private Address of Class C (except between 192,168,0,0 and 192.168.0.255)
- Subnet Mask 255.255.255.0

2.4 UDP Header
- Unicast / Broadcast
- Port 47808 (0xBAC0)

2.5 BVLL Header

- BVLL Type(One Octet)	0x81 (BVLC to BACnet/IP)
- BVLC Function(One Octet)	0x0A (Unicast) 0x0B (Broadcast)

2.6 NPCI

- Version	0x01
- Control	0x04 (With a response message) 0x00 (Without a response message)

2.7 APDU
- Based on ANSI/ASHRAE 135-2004

2.8 UDP Header

- The instance number of a Device object	This number depend on LSB 1Byte of IP Address
- Segmentation	Transmission and reception are not supported.
- Max APDU Length	1024 octet(Receive and Transmit)
- Vender ID	129 (Toshiba Carrier Corporation)

2.9 Network Options

- BACnet/IP Broadcast Management Device (BBMD) Function	Not supported
- Registration by Foreign Devices	Not supported

3. Object List

Object Name		Object Type	Object Type (10bit)	Equipment category (5Bit)	Equipment Number (1Byte)	Instance Number (1Byte)	Object ID (4Byte)	Value
Gateway Device		Device Object(8)	8	00000	0	IP address	0x020****	
ON/OFF Status	Monitor	Binary Input Object(3)	3	00000	FCU(n) 1-128	0x02	0x00C0xx02	Start/Stop
	Control	Binary Output Object(4)	4	00000	FCU(n) 1-128	0x82	0x0100xx82	Start/Stop
Operation Mode	Monitor	Multi-state Input Object(13)	13	00000	FCU(n) 1-128	0x03	0x0340xx03	Heat/Cool/Fan/Dry/Auto
	Control	Multi-state Output Object(14)	14	00000	FCU(n) 1-128	0x83	0x0380xx83	Heat/Cool/Fan/Dry/Auto
Fan Speed	Monitor	Multi-state Input Object(13)	13	00000	FCU(n) 1-128	0x05	0x0340xx05	Stop / Auto / HH / H / L / LL
	Control	Multi-state Output Object(14)	14	00000	FCU(n) 1-128	0x85	0x0380xx85	Stop / Auto / HH / H / L / LL
Louver	Monitor	Multi-state Input Object(13)	13	00000	FCU(n) 1-128	0x07	0x0340xx07	Stop /Swing / F1 / F2 / F3 / F4 / F5
	Control	Multi-state Output Object(14)	14	00000	FCU(n) 1-128	0x87	0x0380xx87	Stop /Swing / F1 / F2 / F3 / F4 / F5
Set Temperature	Monitor	Analog Input Object(0)	0	00000	FCU(n) 1-128	0x04	0x0000xx04	From 18.0 to 29.0 (℃) From 64.0 to 84.0 (°F)
	Control	Analog Output Object(1)	1	00000	FCU(n) 1-128	0x84	0x0040xx84	From 18.0 to 29.0 (℃) From 64.0 to 84.0 (°F)
Room Temperature		Analog Input Object(0)	0	00000	FCU(n) 1-128	0x08	0x0000xx08	From -39.0 to 150.0 (℃) From -38.2 to 302.0 (°F)
Permit / Prohibit of Local	Monitor	Multi-state Input Object(13)	13	00000	FCU(n) 1-128	0x09	0x0340xx09	- Start/Stop - Operation Mode - Temperature Setting
	Control	Multi-state Output Object(14)	14	00000	FCU(n) 1-128	0x89	0x0380xx89	- Start/Stop - Operation Mode - Temperature Setting
Error status		Binary Input Object(3)	3	00000	FCU(n) 1-128	0x40	0x00C0xx40	Error / No Error
Error Code		Multi-state Input Object(13)	13	00000	FCU(n) 1-128	0x01	0x0340xx01	From 0x00 to 0xFF

4. Object Information

4.1 Gateway Device

Name	Data
Object Type	8
Equipment Category	0000
Equipment Number	0
Instance Number	IP Address
Object Type	Device Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R					Application Tag	object identifire（0xc4）			'****' : Instance Number
							Device object	0x0200****			
Object Name(77)	Character string	R					Application Tag	character string（0x750E）			
							String	"AC_CONTROLLER"			
Object Type(79)	BACnet Object Type	R					Application Tag	enumerated（0x91）			Device(8)
							Device object	0x08			
System Status(112)	BACnet Device Status	R	*				Application Tag	enumerated（0x91）			
							value	OPERATIONAL	0x00		
								NON_ OPERATIONAL	0x04		
Vender Name(121)	Character string	R					Application Tag	character string（0x750F）			
							value	Toshiba Carrier Corp.			
Vender Identifier(120)	Unsigned	R					Application Tag	Unsigned(0x21)			
							value	0x81			
Model Name(70)	Character string	R					Application Tag	character string			
							value	BMS-STBN09UL			
Firmware Revision(44)	Character string	R					Application Tag	character string			
							value	*.**.**			
Application Software Version(12)	Character string	R					Application Tag	character string			
							value	*.**.**			
Protocol Version(98)	Unsigned	R					Application Tag	Unsigned(0x21)			
							value	0x01			
Protocol Revision(139)	Unsigned	R					Application Tag	Unsigned(0x21)			
							value	0x04			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Protocol Service Supported(97)	BACnet Service Supported	R					Application Tag	Bit string 6Byte			
							value	First Byte	0x00		
								After the second Byte	600BC83CE0		
								Service Name			
								AcknowledgementAlarm	N/A		
								confirmedCOVNotification	✓		
								confirmedEventNotification	✓		
								getAlarmSummary	N/A		
								getEnrollmentSummary	N/A		
								subscriveCOV	N/A		
								atmicReadFile	N/A		
								atmicWriteFile	N/A		
								addListElement	N/A		
								removeLlistElement	N/A		
								createObject	N/A		
								deleteObject	N/A		
								readProperty	✓		
								readPropertyConditional	N/A		
								readPropertyMultiple	✓		
								writeProperty	✓		
								writePropertyMultiple	✓		
								deviceCommunucationControl	✓		
								confirmedPrivateTransfer	N/A		
								confirmedTextMessage	N/A		
								reinitializeDevice	✓		
								vtOpen	N/A		
								vtClose	N/A		
								vtData	N/A		
								Aithrnticate	N/A		
								requestKey	N/A		
								i-Am	✓		
								i-Have	✓		
								unconfirmedCOVnotification	✓		
								unconfirmedEventNotification	✓		
								unconfirmedPrivateTransfer	N/A		
								unconfirmedTextMessage	N/A		
								timeSyncronization	✓		
								Who-Has	✓		
								Who-Is	✓		
								ReadRange	N/A		
								utcTimeSyncronization	N/A		
								lifeSaftyOperation	N/A		
								subscribeCOVProperty	N/A		
								getEventInformation	N/A		

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Protocol Object Types Supported(96)	Protocol Object Types Supported	R					Application Tag	Bit string 5Byte			
							value	First Byte	0x07		
								After the second Byte	0xD8870000		
								Object Type			
								Analog-input	✓		
								Analog-output	✓		
								Analog-value	N/A		
								Binary-input	✓		
								Binary-output	✓		
								Binary-value	N/A		
								Calendar	N/A		
								Command	N/A		
								Device	✓		
								Event-enrollment	N/A		
								file	N/A		
								Group	N/A		
								Loop	N/A		
								Multi-state-input	✓		
								Multi-state-output	✓		
								Notification-class	✓		
								Program	N/A		
								Schedule	N/A		
								Average	N/A		
								Multi-state-value	N/A		
								Trend-log	N/A		
								Life-safety-point	N/A		
								Life-safety-zone	N/A		
								Accumulator	N/A		
								Pulse-converter	N/A		
Object List(76)	BACnetARRAY[N]of BACnetObjectIdentifier	R		*			Application Tag	[0]:Unsigned(0x22) [1-N]: object identifire（0xc4）			
							value	[0]:number of objects(N) [1-N]: object identifire			
MAX_APDU length Supported(62)	Unsigned	R					Application Tag	Unsigned(0x22)			
							value	1024Byte(0x0400)			
Segmentation Supported(107)	BACnet Segmentation	R					Application Tag	Enumerated(0x91)			
							value	No-segmentation(0x03)			
Local Time(57)	Time	R	*				Application Tag	Time(0xB4)			
							value	Hour, Minute, Second, a hundredth of a second is “0”			
Local Date(56)	Date	R	*				Application Tag	Date(0xA4)			
							value	Year, Month, Day, a day of the week			
APDU Timeout(11)	Unsigned	R					Application Tag	Unsigned1(0x21)			
							value	0msec(0x00)			
Number of APDU Retries(73)	Unsigned	R					Application Tag	Unsigned1(0x21)			
							value	0x00			
Device_Address_Binding(30)	ListofBACnetAddressBinding	R			*		Application Tag	-			
							value	-(empty: no device)			
Database Revision(155)	Unsigned	R					Application Tag	Unsigned(0x21)			
							value	0x00			

4.2 ON / OFF status Monitor

Name	Data
Object Type	3
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x02
Object Type	Binary Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							binary input object	0x00C0**02			
Object Name(77)	character string	R					Application Tag	character string(0x751A)			***' : air conditioning number 1 – 128
							String	"ON/OFF_status_Monitor_***"			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Binary Input(3)
							analog input object	0x03			
Present value(85)	BACnetBinaryPV	R	*			0x91	Application Tag	enumerated(0x91)		intrinsic reporting	This property is writable when Out_Of_Service is TRUE
							Value	INACTIVE	0x00		
								ACTIVE	0x01		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11		
								false	0x10		
Polarity(84)	BACnetPolarity	R				0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL(0x00)			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**02		
Alarm_Value(6)	BACnetBinaryPV	R				0x91	Application Tag		enumerated（0x91）		
							Value		ACTIVE(0x01)		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	1	
									b6(to_fault)	1	
									b5(to_normal)	1	
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	0	
									b6(to_fault)	0	
									b5(to_normal)	0	
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.3 ON / OFF status Control

Name	Data
Object Type	4
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x82
Object Type	Binary Output Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							binary output object	0x0100**82			
Object Name(77)	character string	R					Application Tag	character string(0x751A)			***' : air conditioning number 1 – 128
							String	"ON/OFF_status_Control_*** "			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Binary Output(4)
							analog input object	0x04			
Present value(85)	BACnetBinaryPV	W	*			0x91	Application Tag	enumerated(0x91)			
							Value	INACTIVE	0x00		
								ACTIVE	0x01		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the output
							Value	true	0x11		
								false	0x10		
Polarity(84)	BACnetPolarity	R				0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL(0x00)			
Priority_Array(87)	BACnetPriorityArray	R	*	*		0x91	Application Tag	enumerated(0x91)			
							Value	array[1]-[16]			
Relinquish_Default(104)	BACnetBinaryPV	W	*			0x91	Application Tag	enumerated(0x91)			
							Value	INACTIVE	0x00		
								ACTIVE	0x01		

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		60s(0x3C)		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**82		
Feedback_Value(40)	BACnetBinaryPV	R				0x91	Application Tag		enumerated（0x91）		
							Value	INACTIVE	0x00		
								ACTIVE	0x01		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString	b7(to_offnormal)	0		
								b6(to_fault)	0		
								b5(to_normal)	0		
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString	b7(to_offnormal)	0		
								b6(to_fault)	0		
								b5(to_normal)	0		
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.4 Operation mode Monitor

Name	Data
Object Type	13
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x03
Object Type	Multi-State Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							multi-state input object	0x0340**03			
Object Name(77)	character string	R					Application Tag	character string(0x751B)			***' : air conditioning number 1 – 128
							String	"Operation_mode_Monitor_***"			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Multi-State Input(13)
							Multi-State Input object	0x0D			
Present value(85)	Unsigned	W	*			0x44	Application Tag	enumerated(0x91)			This property is writable when Out_Of_Service is TRUE
							Value	Heating	0x01	intrinsic reporting	
								Cooling	0x02		
								Fan	0x03		
								Dry	0x04		
								Auto	0x05		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11		
								false	0x10		
Number_Of_States (74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)			
							Value	0x05			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**03		
Alarm_Values(7)	List of Unsigned	R			*	0x21	Application Tag		Unsigned（0x91）		
							Value		1,2,3,4,5		
Fault_Values(39)	List of Unsigned	R			*		Application Tag		NULL（0x00）		
							Value		NULL		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	1	
									b6(to_fault)	1	
									b5(to_normal)	1	
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	0	
									b6(to_fault)	0	
									b5(to_normal)	0	
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.5 Operation mode Control

Name	Data
Object Type	14
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x83
Object Type	Multi-State Output Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							multi-state output object	0x0380**83			
Object Name(77)	character string	R					Application Tag	character string(0x751B)			'***' : air conditioning number 1 – 128
							String	"Operation_mode_Control_***"			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Multi-State Output(14)
							Multi-State Output object	0x0E			
Present value(85)	Unsigned	W	*			0x21	Application Tag	Unsigned(0x21)			
							Value	Heating	0x01		
								Cooling	0x02		
								Fan	0x03		
								Dry	0x04		
								Auto	0x05		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the output
							Value	true	0x11		
								false	0x10		
Number_Of_States(74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)			
							Value	0x05			
Priority_Array(87)	BACnetPriorityArray	R	*	*		0x91	Application Tag	enumerated(0x91)			
							Value	array[1]-[16]			
Relinquish_Default(104)	Unsigned	W	*			0x21	Application Tag	Unsigned(0x21)			
							Value	Heating	0x01		
								Cooling	0x02		
								Fan	0x03		
								Dry	0x04		
								Auto	0x05		

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**83		
Feedback_Value(40)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		Heating 0x01		
									Cooling 0x02		
									Fan 0x03		
									Dry 0x04		
									Auto 0x05		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal) 0		
									b6(to_fault) 0		
									b5(to_normal) 0		
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal) 0		
									b6(to_fault) 0		
									b5(to_normal) 0		
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.6 Fan speed Monitor

Name	Data
Object Type	13
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x05
Object Type	Multi-State Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							multi-state input object	0x0340**05			
Object Name(77)	character string	R					Application Tag	character string(0x7516)			***' : air conditioning number 1 – 128
							String	"Fan_speed_Monitor_*** "			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Multi-State Input(13)
							Multi-State Input object	0x0D			
Present value(85)	Unsigned	R	*			0x21	Application Tag	Unsigned(0x21)		intrinsic reporting	This property is writable when Out_Of_Service is TRUE
							Value	Stop	0x01		
								Auto	0x02		
								HH	0x03		
								H	0x04		
								L	0x05		
								LL	0x06		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11		
								false	0x10		
Number_Of_States (74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)			
							Value	0x06			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**05		
Alarm_Values(7)	List of Unsigned	R			*	0x91	Application Tag		enumerated（0x91）		
							Value		1,2,3,4,5,6		
Fault_Values(39)	List of Unsigned	R			*		Application Tag		NULL（0x00）		
							Value		NULL		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	1	
									b6(to_fault)	1	
									b5(to_normal)	1	
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	0	
									b6(to_fault)	0	
									b5(to_normal)	0	
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.7 Fan speed Control

Name	Data
Object Type	14
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x85
Object Type	Multi-State Output Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							multi-state output object	0x0380**85			
Object Name(77)	character string	R					Application Tag	character string(0x7516)			'***' : air conditioning number 1 – 128
							String	"Fan_speed_Control_*** "			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Multi-State Output(14)
							Multi-State Output object	0x0E			
Present value(85)	Unsigned	W	*			0x21	Application Tag	Unsigned(0x21)			
							Value	Stop	0x01		
								Auto	0x02		
								HH	0x03		
								H	0x04		
								L	0x05		
								LL	0x06		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the output
							Value	true	0x11		
								false	0x10		
Number_Of_States(74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)			
							Value	0x05			
Priority_Array(87)	BACnetPriorityArray	R	*	*		0x21	Application Tag	Unsigned(0x21)			
							Value	Array[1]-[16]			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Relinquish_Default(104)	Unsigned	W	*			0x21	Application Tag		Unsigned(0x21)		
							Value	Stop	0x01		
								Auto	0x02		
								HH	0x03		
								H	0x04		
								L	0x05		
								LL	0x06		
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**85		
Feedback_Value(40)	Unsigned	R				0x21	Application Tag		Unsigned(0x21)		
							Value	Stop	0x01		
								Auto	0x02		
								HH	0x03		
								H	0x04		
								L	0x05		
								LL	0x06		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString	b7(to_offnormal)	0		
								b6(to_fault)	0		
								b5(to_normal)	0		
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString	b7(to_offnormal)	0		
								b6(to_fault)	0		
								b5(to_normal)	0		
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.8 Louver Monitor

Name	Data
Object Type	13
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x07
Object Type	Multi-State Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							multi-state input object	0x0340**05			
Object Name(77)	character string	R					Application Tag	character string(0x7513)			***' : air conditioning number 1 – 128
							String	"Louver_Monitor_*** "			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Multi-State Input(13)
							Multi-State Input object	0x0D			
Present value(85)	Unsigned	R	*			0x21	Application Tag	Unsigned(0x21)		intrinsic reporting	This property is writable when Out_Of_Service is TRUE
							Value	SWING	0x01		
								F1	0x02		
								F2	0x03		
								F3	0x04		
								F4	0x05		
								F5	0x06		
								Stop	0x07		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11		
								false	0x10		
Number_Of_States (74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)			
							Value	0x07			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**07		
Alarm_Values(7)	List of Unsigned	R			*	0x21	Application Tag		Unsigned（0x21）		
							Value		1,2,3,4,5,6,7		
Fault_Values(39)	List of Unsigned	R			*		Application Tag		NULL（0x00）		
							Value		NULL		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	1	
									b6(to_fault)	1	
									b5(to_normal)	1	
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	0	
									b6(to_fault)	0	
									b5(to_normal)	0	
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.9 Louver Control

Name	Data
Object Type	14
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x87
Object Type	Multi-State Output Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							multi-state output object	0x0380**87			
Object Name(77)	character string	R					Application Tag	character string(0x7513)			'***' : air conditioning number 1 – 128
							String	"Louver_Control _*** "			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Multi-State Output(14)
							Multi-State Output object	0x0E			
Present value(85)	Unsigned	W	*			0x21	Application Tag	Unsigned(0x21)			
							Value	SWING	0x01		
								F1	0x02		
								F2	0x03		
								F3	0x04		
								F4	0x05		
								F5	0x06		
								Stop	0x07		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the output
							Value	true	0x11		
								false	0x10		
Number_Of_States(74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)			
							Value	0x07			
Priority_Array(87)	BACnetPriorityArray	R	*	*		0x91	Application Tag	enumerated(0x91)			
							Value	Array[1]-[16]			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Relinquish_Default(104)	Unsigned	W	*			0x21	Application Tag	Unsigned (0x21)			
							Value	SWING	0x01		
								F1	0x02		
								F2	0x03		
								F3	0x04		
								F4	0x05		
								F5	0x06		
								Stop	0x07		
Time_Delay(113)	Unsigned	R				0x21	Application Tag	Unsigned (0x21)			
							Value	0x00			
Notification_Class(17)	Unsigned	R				0x22	Application Tag	Unsigned (0x22)			'**' : air conditioning number 0x01 – 0x80
							Value	0x**87			
Feedback_Value(40)	Unsigned	R				0x91	Application Tag	enumerated (0x91)			
							Value	SWING	0x01		
								F1	0x02		
								F2	0x03		
								F3	0x04		
								F4	0x05		
								F5	0x06		
								Stop	0x07		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag	Bit String (0x82)			
							BitString	b7(to_offnormal)	0		
								b6(to_fault)	0		
								b5(to_normal)	0		
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag	Bit String (0x82)			
							BitString	b7(to_offnormal)	0		
								b6(to_fault)	0		
								b5(to_normal)	0		
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag	enumerated (0x91)			
							Value	event(0x01)			
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag	Date (0xa4)			
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.10 Set temperature Monitor

Name	Data
Object Type	0
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x04
Object Type	Analog Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							Analog input object	0x0000**04			
Object Name(77)	character string	R					Application Tag	character string(0x751c)			'***' : air conditioning number 1 – 128
							String	"Set_temperature_Monitor_***"			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Analog Input(0)
							analog Input object	0x00			
Present value(85)	REAL	R	*			0x44	Application Tag	Real(0x44)			This property is writable when Out_Of_Service is TRUE
							Value	From 18.0 to 29.0 (℃) From 64.0 to 84.0 (℉)		COV	
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								HIGH-LIMIT	0x03		
								LOW-LIMIT	0x04		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11		
								false	0x10		
Units(117)	BACnetEngeneeringUnits	R				0x91	Application Tag	enumerated(0x91)			
							Value	degree-Celsius(62) (℃) degree-Fahrenheit(64) (℉)			
COV_Increment(22)	REAL	R				0x44	Application Tag	Real(0x44)			
							Value	0.0			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**04		
High_Limit(45)	REAL	W				0x44	Application Tag		Real（0x44）		
							Value		17.0(℃) 62.0(°F)		
Low_Limit(59)	REAL	W				0x44	Application Tag		Real（0x44）		
							Value		30.0(℃) 86.0(°F)		
Deadband(25)	REAL	R				0x44	Application Tag		Real（0x44）		
							Value		0.0		
Limit_Enable(52)	BACnetLimitEnable	R				0x82	Application Tag		Bit String（0x82）		
							Value	b7(lowLimitEnable)	1		
								b6(highLimitEnable)	1		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString	b7(to_offnormal)	1		
								b6(to_fault)	1		
								b5(to_normal)	1		
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString	b7(to_offnormal)	0		
								b6(to_fault)	0		
								b5(to_normal)	0		
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.11 Set temperature Control

Name	Data
Object Type	1
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x84
Object Type	Analog Output Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							Analog output object	0x0040**84			
Object Name(77)	character string	R					Application Tag	character string(0x751c)			***' : air conditioning number 1 – 128
							String	"Set_temperature_Control_*** "			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Analog Output(1)
							analog Input object	0x01			
Present value(85)	REAL	W	*			0x44	Application Tag	Real(0x44)			
							Value	From 18.0 to 29.0 (°C) From 64.0 to 84.0 (°F)			
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								HIGH-LIMIT	0x03		
								LOW-LIMIT	0x04		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the output
							Value	true	0x11		
								false	0x10		
Units(117)	BACnetEngeneeringUnits	R				0x91	Application Tag	enumerated(0x91)			
							Value	degree-Celsius(62) (°C) degree-Fahrenheit(64) (°F)			
Priority_Array(87)	BACnetPriorityArray	R	*	*		0x44	Application Tag	Real(0x44)			
							Value				
Relinquish_Default(104)	REAL	W	*			0x44	Application Tag	Real(0x44)			
							Value	From 18.0 to 29.0 (°C) From 64.0 to 84.0 (°F)			
COV_Increment(22)	REAL	R				0x44	Application Tag	Real(0x44)			
							Value	0.0			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned(0x21)		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned(0x22)		'**' : air conditioning number 0x01 – 0x80
							Value		0x**84		
High_Limit(45)	REAL	R				0x44	Application Tag		Real(0x44)		
							Value		17.0(℃) 62.0(°F)		
Low_Limit(59)	REAL	R				0x44	Application Tag		Real(0x44)		
							Value		30.0(℃) 86.0(°F)		
Deadband(25)	REAL	R				0x44	Application Tag		Real(0x44)		
							Value		0.0		
Limit_Enable(52)	BACnetLimitEnable	R				0x82	Application Tag		Bit String(0x82)		
							Value		b7(lowLimitEnable) 1		
									b6(highLimitEnable) 1		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String(0x82)		
							BitString		b7(to_offnormal) 0		
									b6(to_fault) 0		
									b5(to_normal) 0		
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String(0x82)		
							BitString		b7(to_offnormal) 0		
									b6(to_fault) 0		
									b5(to_normal) 0		
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated(0x91)		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date(0xa4)		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.12 Room temperature

Name	Data
Object Type	0
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x08
Object Type	Analog Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							Analog input object	0x0000**08			
Object Name(77)	character string	R					Application Tag	character string(0x7515)			***' : air conditioning number 1 – 128
							String	"Room_temperature_*** "			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Analog Input(0)
							analog Input object	0x00			
Present value(85)	REAL	R	*			0x44	Application Tag	Real(0x44)			This property is writable when Out_Of_Service is TRUE
							Value	From -35.0 to 92.5 (°C) From -31.0 to 198.5 (°F)			
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								HIGH-LIMIT	0x03		
								LOW-LIMIT	0x04		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11		
								false	0x10		
Units(117)	BACnetEngeneeringUnits	R				0x91	Application Tag	enumerated(0x91)			
							Value	degree-Celsius(62) (°C) degree-Fahrenheit(64) (°F)			
COV_Increment(22)	REAL	R				0x44	Application Tag	Real(0x44)			
							Value	0.0			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**08		
High_Limit(45)	REAL	W				0x44	Application Tag		Real（0x44）		
							Value		50.0(℃) 122.0(°F)		
Low_Limit(59)	REAL	W				0x44	Application Tag		Real（0x44）		
							Value		-20.0(℃) -4.0(°F)		
Deadband(25)	REAL	R				0x44	Application Tag		Real（0x44）		
							Value		0.0		
Limit_Enable(52)	BACnetLimitEnable	R				0x82	Application Tag		Bit String（0x82）		
							Value	b7(lowLimitEnable)	1		
								b6(highLimitEnable)	1		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString	b7(to_offnormal)	1		
								b6(to_fault)	1		
								b5(to_normal)	1		
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString	b7(to_offnormal)	0		
								b6(to_fault)	0		
								b5(to_normal)	0		
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.13 Permit / Prohibit of Local Operation Monitor

Name	Data
Object Type	13
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x09
Object Type	Multi-State Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value					Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)					'**' : air conditioning number 0x01 – 0x80
							multi-state input object	0x0340**09					
Object Name(77)	character string	R					Application Tag	character string(0x751C)					'***' : air conditioning number 1 – 128
							String	"Permit/Prohibit_Monitor_*** "					
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)					Multi-State Input(13)
							Multi-State Input object	0x0D					
Present value(85)	Unsigned	R	*			0x21	Application Tag	Unsigned(0x21)				intrinsic reporting	This property is writable when Out_Of_Service is TRUE
							Value	Prohibition					
								Mode	Temp	ON/OFF	Data		
								-	-	-	0x01		
								✓	-	-	0x02		
								-	✓	-	0x03		
								-	-	✓	0x04		
								✓	✓	-	0x05		
								✓	-	✓	0x06		
								-	✓	✓	0x07		
								✓	✓	✓	0x08		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)					
							BitString	b7	IN_ALARM				
								b6	FAULT				
								b5	OVERRIDDEN				
								b4	OUT_OF_SERVICE				
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)					
							Value	NORMAL			0x00		
								FAULT			0x01		
								OFFNORMAL			0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)					When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11				
								false	0x10				
Number_Of_States (74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)					
							Value	0x08					

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**09		
Alarm_Values(7)	List of Unsigned	R			*	0x91	Application Tag		enumerated（0x91）		
							Value		1,2,3,4,5,6,7,8		
Fault_Values(39)	List of Unsigned	R			*		Application Tag		NULL（0x00）		
							Value		NULL		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	1	
									b6(to_fault)	1	
									b5(to_normal)	1	
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	0	
									b6(to_fault)	0	
									b5(to_normal)	0	
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.14 Permit / Prohibit of Local Operation Control

Name	Data
Object Type	14
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x89
Object Type	Multi-state Output Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value					Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)					'**' : air conditioning number 0x01 – 0x80
							multistate output object	0x0380**89					
Object Name(77)	character string	R					Application Tag	character string(0x751C)					'***' : air conditioning number 1 – 128
							String	"Permit/Prohibit_Control_*** "					
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)					Multi-State Output(14)
							Multi-state Output object	0x14					
Present value(85)	BACnetBinaryPV	W	*			0x21	Application Tag	Unsigned(0x21)					
							Value	Prohibition					
								Mode	Temp	ON/OFF	Data		
								-	-	-	0x01		
								✓	-	-	0x02		
								-	✓	-	0x03		
								-	-	✓	0x04		
								✓	✓	-	0x05		
								✓	-	✓	0x06		
								-	✓	✓	0x07		
								✓	✓	✓	0x08		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)					
							BitString	b7	IN_ALARM				
								b6	FAULT				
								b5	OVERRIDDEN				
								b4	OUT_OF_SERVICE				
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)					
							Value	NORMAL	0x00				
								FAULT	0x01				
								OFFNORMAL	0x02				
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)					When this property is TRUE, Present_Value are decoupled from the output
							Value	true	0x11				
								false	0x10				
Number_Of_States(74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)					
							Value	0x08					
Priority_Array(87)	BACnetPriorityArray	R	*	*		0x91	Application Tag	enumerated(0x91)					
							Value						

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value					Notice of Status Change	Remarks
Relinquish_Default(104)	Unsigned	W	*			0x21	Application Tag	Unsigned(0x21)					
							Value	Prohibition					
								Mode	Temp	ON/OFF	Data		
								-	-	-	0x01		
								✓	-	-	0x02		
								-	✓	-	0x03		
								-	-	✓	0x04		
								✓	✓	-	0x05		
								✓	-	✓	0x06		
								-	✓	✓	0x07		
								✓	✓	✓	0x08		
Time_Delay(113)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)					
							Value	0x00					
Notification_Class(17)	Unsigned	R				0x22	Application Tag	Unsigned(0x22)					'**' : air conditioning number 0x01 – 0x80
							Value	0x**89					
Feedback_Value(40)	Unsigned	R	*			0x21	Application Tag	Unsigned(0x21)					
							Value	Prohibition					
								Mode	Temp	ON/OFF	Data		
								-	-	-	0x01		
								✓	-	-	0x02		
								-	✓	-	0x03		
								-	-	✓	0x04		
								✓	✓	-	0x05		
								✓	-	✓	0x06		
								-	✓	✓	0x07		
								✓	✓	✓	0x08		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag	Bit String(0x82)					
							BitString	b7(to_offnormal)	1				
								b6(to_fault)	0				
								b5(to_normal)	1				
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag	Bit String(0x82)					
							BitString	b7(to_offnormal)	0				
								b6(to_fault)	0				
								b5(to_normal)	0				
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag	enumerated(0x91)					
							Value	event(0x01)					
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag	Date(0xa4)					
							Value	[1]	to_offnormal dateTime				
								[2]	to_fault dateTime				
								[3]	to_normal dateTime				

4.15 Error status

Name	Data
Object Type	3
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x40
Object Type	Binary Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							binary input object	0x00C0**40			
Object Name(77)	character string	R					Application Tag	character string(0x7511)			'***' : air conditioning number 1 – 128
							String	"Error_status_***"			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Binary Input(3)
							analog input object	0x03			
Present value(85)	BACnetBinaryPV	R	*			0x91	Application Tag	enumerated(0x91)		intrinsic reporting	This property is writable when Out_Of_Service is TRUE Error Code : please refer to '2.9 Indoor unit Error Code'.
							Value	No Error	0x00		
								Error	0x01		
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11		
								false	0x10		
Polarity(84)	BACnetPolarity	R				0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL(0x00)			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**40		
Alarm_Value(6)	BACnetBinaryPV	R				0x91	Application Tag		enumerated（0x91）		
							Value		error(0x01)		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	1	
									b6(to_fault)	1	
									b5(to_normal)	1	
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	0	
									b6(to_fault)	0	
									b5(to_normal)	0	
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		alarm(0x00)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

4.16 Error Code

Name	Data
Object Type	13
Equipment Category	0000
Equipment Number	From 1 to 128
Instance Number	0x01
Object Type	Mult-State Input Object

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Object Identifire(75)	BACnet Object ID	R				0xC4	Application Tag	object identifire(0xc4)			'**' : air conditioning number 0x01 – 0x80
							multi-state input object	0x0340**01			
Object Name(77)	character string	R					Application Tag	character string(0x750F)			***' : air conditioning number 1 – 128
							String	"Error_Code_***"			
Object Type(79)	BACnetObjectType	R				0x91	Application Tag	enumerated(0x91)			Multi-State Input(13)
							Multi-State input object	0x0D			
Present value(85)	Unsigned	R	*			0x21	Application Tag	Unsigned(0x21)			This property is writable when Out_Of_Service is TRUE. When is No Error, the value is '0x00'.
							Value	From 0x00 to 0xFF			
Status_Flags(111)	BACnetStatusFlags	R	*			0x82	Application Tag	Bit String(0x82)			
							BitString	b7	IN_ALARM		
								b6	FAULT		
								b5	OVERRIDDEN		
								b4	OUT_OF_SERVICE		
Event_State(36)	BACnetEventState	R	*			0x91	Application Tag	enumerated(0x91)			
							Value	NORMAL	0x00		
								FAULT	0x01		
								OFFNORMAL	0x02		
Out_Of_Service(81)	BOOLEAN	W					Application Tag	Boolean(0x1x)			When this property is TRUE, Present_Value are decoupled from the input
							Value	true	0x11		
								false	0x10		
Number_Of_States (74)	Unsigned	R				0x21	Application Tag	Unsigned(0x21)			
							Value	0xFF			

Property Identifire	Property Data Type	Read Write	Variable	Array	List	Tag	Value			Notice of Status Change	Remarks
Time_Delay(113)	Unsigned	R				0x21	Application Tag		Unsigned（0x21）		
							Value		0x00		
Notification_Class(17)	Unsigned	R				0x22	Application Tag		Unsigned（0x22）		'**' : air conditioning number 0x01 – 0x80
							Value		0x**01		
Alarm_Values(7)	List of Unsigned	R			*	-	Application Tag		Unsigned（0x21）		
							Value		NULL		
Fault_Values(39)	List of Unsigned	R			*	-	Application Tag		Unsigned（0x21）		
							Value		NULL		
Event_Enable(35)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	0	
									b6(to_fault)	0	
									b5(to_normal)	0	
Acked_Transitions(0)	BACnetEventTransitionBits	R				0x82	Application Tag		Bit String（0x82）		
							BitString		b7(to_offnormal)	0	
									b6(to_fault)	0	
									b5(to_normal)	0	
Notify_Type(72)	BACnetNotifyType	R				0x91	Application Tag		enumerated（0x91）		
							Value		event(0x01)		
Event_Time_Stamps(130)	BACnetARRAY[3]of BACnetTimeStamp	R	*	*		0xa4	Application Tag		Date（0xa4）		
							Value	[1]	to_offnormal dateTime		
								[2]	to_fault dateTime		
								[3]	to_normal dateTime		

TOSHIBA CARRIER CORPORATION
336 TADEHARA, FUJI-SHI, SHIZUOKA-KEN 416-8521 JAPAN

Copylight © 2012 TOSHIBA CARRIER CORPORATION ALL Rights Reserved