40VM Series
VRF (Variable Refrigerant Flow) System
BACnet Interface

Installation and Operation Manual

Part Number 40VM900052

For Commercial Use Only

CONTENTS

Catalog No. 17-40VM900052-01 Printed in U.S.A. Form 40VM-52SI R1 Pg 1 10-17 Replaces: 40VM-52SI

SAFETY PRECAUTIONS

Read and follow manufacturer instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage thermostat.

Understand the signal words — DANGER, WARNING, and CAUTION. DANGER identifies the most serious hazards, which will result in severe personal injury or death. WARNING signifies hazards that could result in personal injury or death. CAUTION is used to identify unsafe practices, which would result in minor personal injury or product and property damage.

Recognize safety information. This is the safety-alert symbol (⚠). When this symbol is displayed on the unit and in instructions or manuals, be alert to the potential for personal injury. Installing, starting up, and servicing equipment can be hazardous due to system pressure, electrical components, and equipment location.

GENERAL

The VRF (variable refrigerant flow) BACnet Interface is a wall-mounted, low-voltage controller that provides site-level control of multiple VRF systems. The BACnet Interface provides BACnet IP communications with VRF system(s). In addition, it provides central management of mode, setpoint, and scheduling of indoor units (IDUs) through its web browser interface.

The BACnet Interface is available for use with the VRF (variable refrigerant flow) outdoor units / systems listed in Table 1. Refer to Table 2 for general specifications.

Table 1: BACnet Accessory Usage

UNIT	SIZES
38VMAR Heat Recovery System	072,096,120,144, 168, 192, 216, 240, 264, 288, 312, 336
38VMAH Heat Pump System	036, 048, 060, 072, 096, 120, 144, 168, 192, 216, 240, 264, 288, 312, 336, 360, 384, 408, 432

Table 2: Specifications

Power Supply	24VAC	
Power Consumption	20W	
Dimensions	H	12-1/2
	W	9-7/8
	D	2-1/2
Net Weight	5.6 lbs	
Number of X/Y Bus Lines	4	
Max. Refrigerant Systems / IDUs Per Line	8/64	
LAN	Higher than category 5, UTP	

INSTALLATION

BACnet Interface should be mounted:

- at a location that allows easy access.
- on a section of wall without water or drainage pipes.

BACnet Interface should NOT be mounted:

- near heat sources such as direct sunlight, heaters, dimmer switches, and other electrical devices.

There are three installation methods as shown in Figure 1. Do not install the unit in any other orientation.

NOTE: Screws are not included. The contractor must purchase screws for installation.

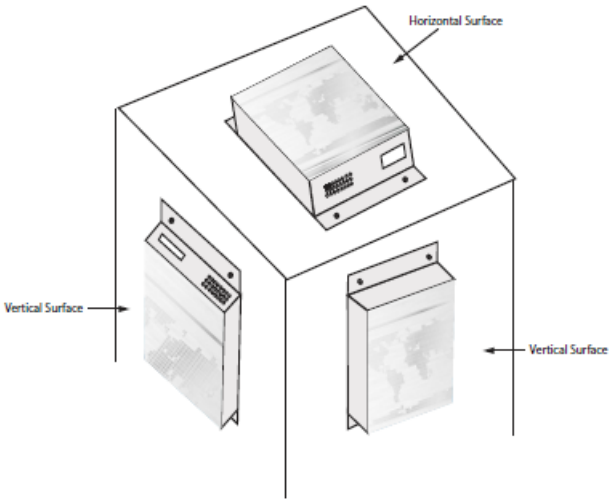


Fig. 1 —Installation Layout

CONNECTION DESCRIPTIONS

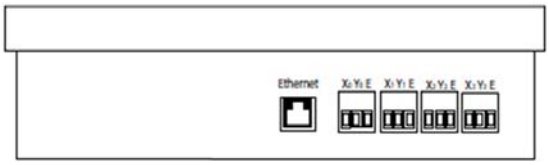


Fig. 2 —BACnet Interface Bottom View

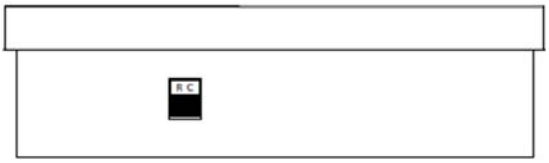


Fig. 3 —BACnet Interface Top View

Table 3 —Bacnet Interface Connectors

Name	Function
R	24VAC Power
C	24VAC Common
X	X Conductor, X/Y Bus (no 1-3)
Y	Y Conductor, X/Y Bus (no 1-3)
E	Shield Conductor, X/Y Bus (no 1-3)
Ethernet	Local Area Network Connection

Installation of the BACnet Interface — To install the BACnet interface, perform the following procedure:

1. Turn off all power to the outdoor units, indoor units, and MDC.

⚠ WARNING

Electrical shock can cause personal injury and death. Before installing thermostat, shut off all power to this equipment during installation. There may be more than one power disconnect. Tag all disconnect locations to alert others not to restore power until work is completed.

⚠ CAUTION

Failure to follow this caution may result in equipment damage or improper operation.

Improper wiring or installation may damage the thermostat. Check to make sure wiring is correct before proceeding with installation or turning on unit.

2. Control Wire: Use 16 to 20 AWG (American Wire Gage), stranded twisted pair shielded 2-core wiring (copper wire). Be sure the distance between the controller and the furthest outdoor unit is not more than 3939 feet.

   Field-provided 24VAC Power Wire: Use copper wire rated for at least 1A. Follow the applicable electrical codes.

3. Mount the interface to the surface according to allowed orientations shown in Figure 4.

WIRE BACNET —

1. Control Wire: Use 16 to 20 AWG (American Wire Gage), stranded twisted pair shielded 2-core wiring (copper wire).

   Note: The controller has 4 central control bus (X/Y) lines. Each line can support up to 8 refrigerant systems and 64 indoor units, maximum.

2. Using control wire, connect outdoor units (X/Y central control bus terminals) in a daisy chain configuration. Connect terminating end to the Central Controller's designated X/Y lines (0-3).
3. For larger heat pump systems with dual or triple modules on a refrigerant system, wire X/Y daisy chain only to the Header outdoor unit of each refrigerant system. See Figure 4.

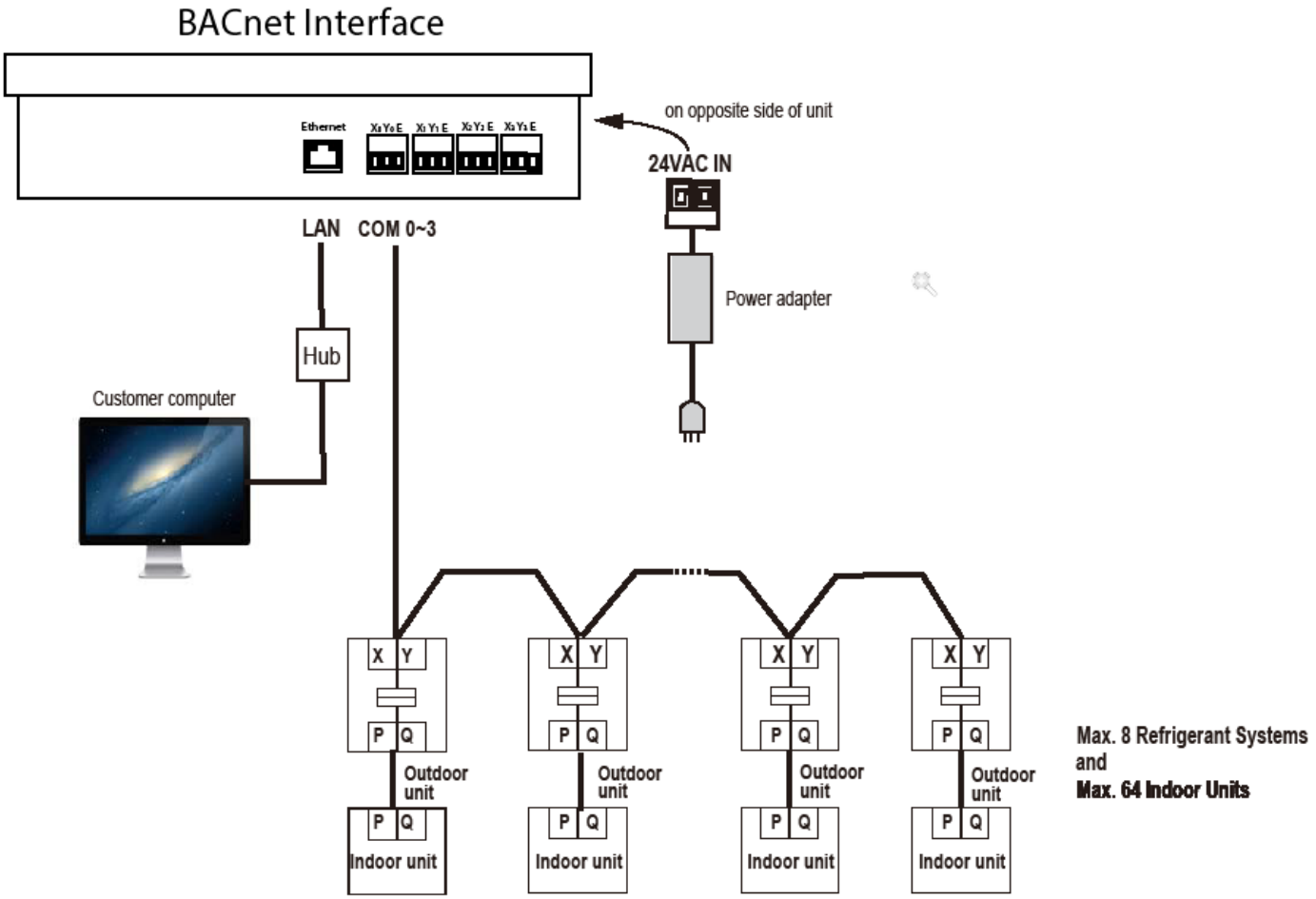


Fig. 4 —System Wiring Diagram

SETTING NETWORK ADDRESS

Make sure each outdoor unit / refrigerant system has its own unique network address: 0-7. Set by turning rotary encoders shown below (ENC4 for 3-Phase Heat Pump and Heat Recovery; ENC2 for single Phase Heat Pump).
For larger Heat Pump systems with dual or triple modules, set all addresses the same for each module within the refrigerant system.

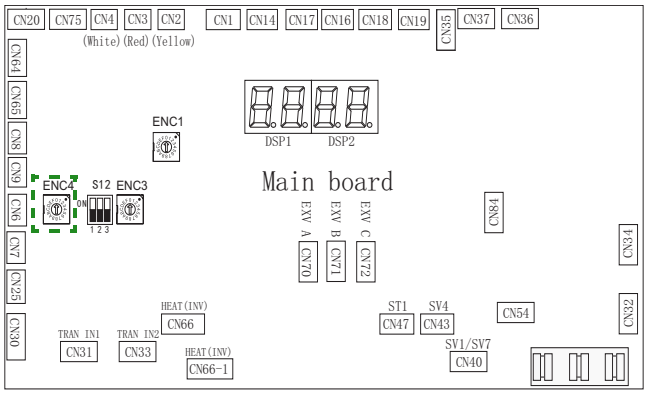


Fig. 5 —Heat Pump ENC4

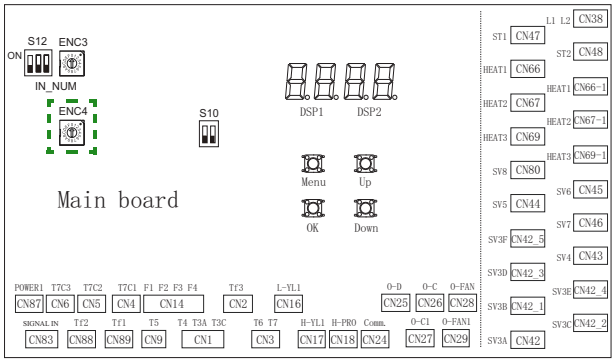


Fig. 6 —Heat Recovery ENC4

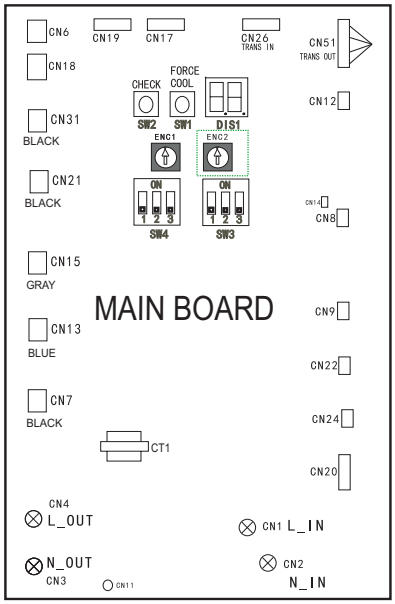


Fig. 7 —Single Phase Heat Pump ENC2

INITIAL STARTUP AND PASSWORD CHANGE

The BACnet Interface and the computer are connected to the same LAN.

The default IP address of BACnet is 192.168.1.8.

1. Change the IP address of the computer to the same network segment as BACnet:
   i.e. 192.168.1.x (x cannot be 8).
2. Enter 192.168.1.8 in browser.

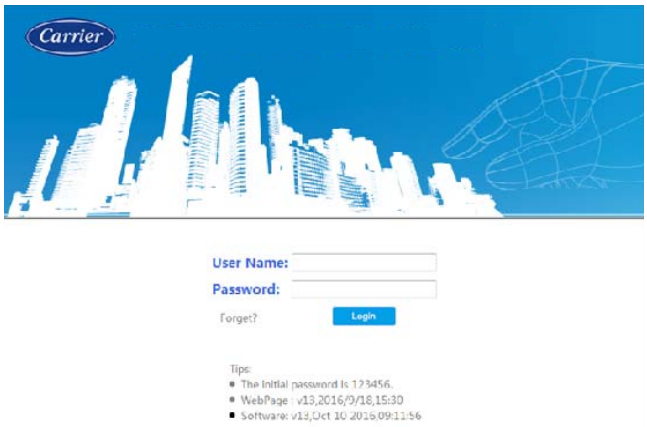


Fig. 8 —Login Screen

The BACnet interface provides one administrator and 384 user privileges. The administrator's login is "Admin" and the initial password is 123456. When using the initial password to login, the system will remind: "your password is not secure, please change it!"

Fig. 9 —Change Password Screen

NOTES:

1. The computer operating system currently supports Windows 7 (32-bit, 64-bit) and later.
2. The web browser currently supports IE9 and later, Google Chrome18.0 and later, and Firefox1.5 and later.
3. The computer screen resolution requirement is no less than 1280 * 800.

HOMEPAGE FUNCTION DESCRIPTION

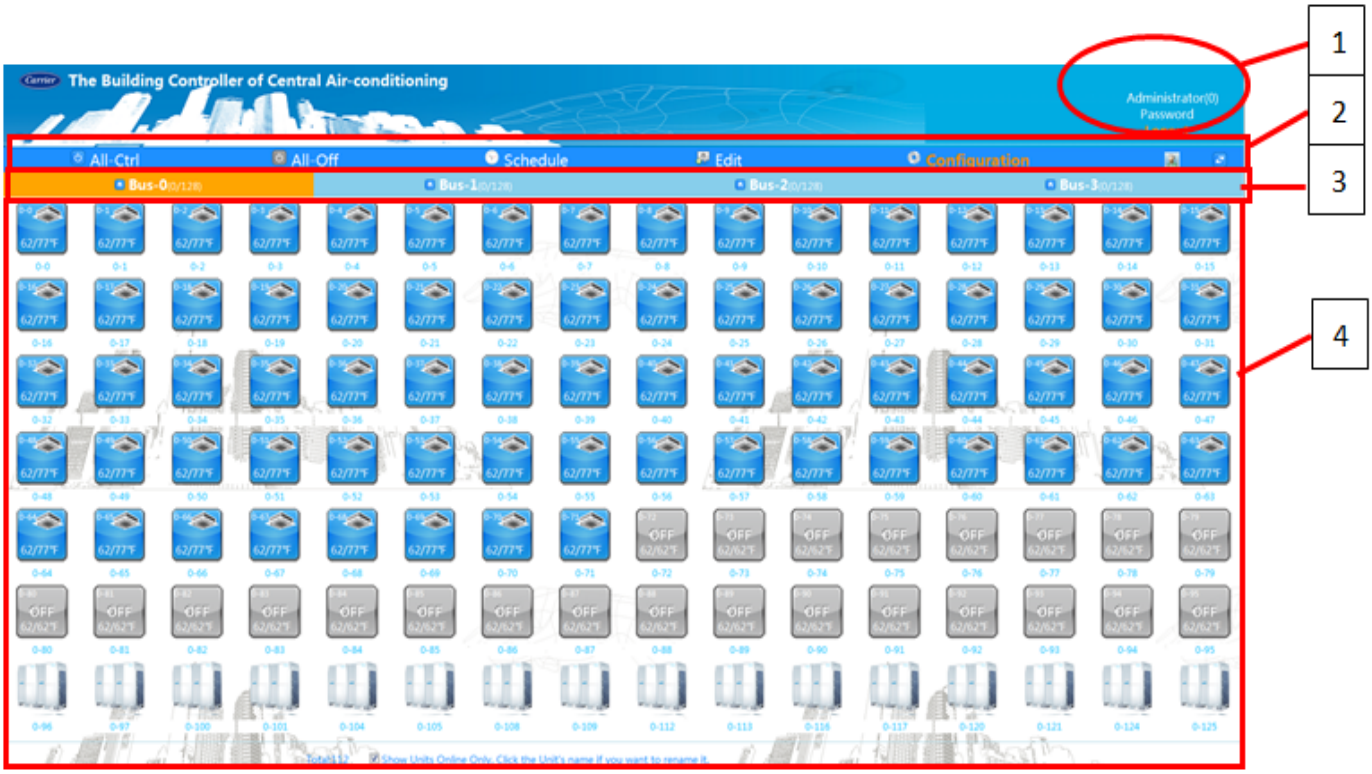


Fig. 10 —Homepage

Figure Callouts:

1. Current user information
2. Shortcut menu bar
3. Area bar
4. Equipment status field

BASIC CONFIGURATION

From the Home Screen, click the Configuration Icon to enter settings:

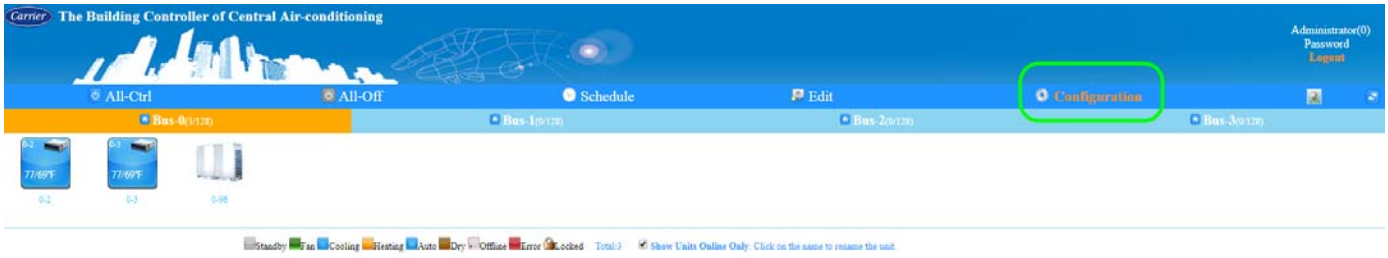


Fig. 11 —Configuration Icon

Controller Configuration — In the drop-down menus, you can select the mode of each of the Interface's four X/Y/E buses. Buses can be set to Polling Mode, Listening Mode, or Idle. Click "Apply" after making desired changes.

Fig. 12 —Controller Configuration

Network Configuration — This page is used to set the static IP address, subnet mask, and default gateway of the interface.

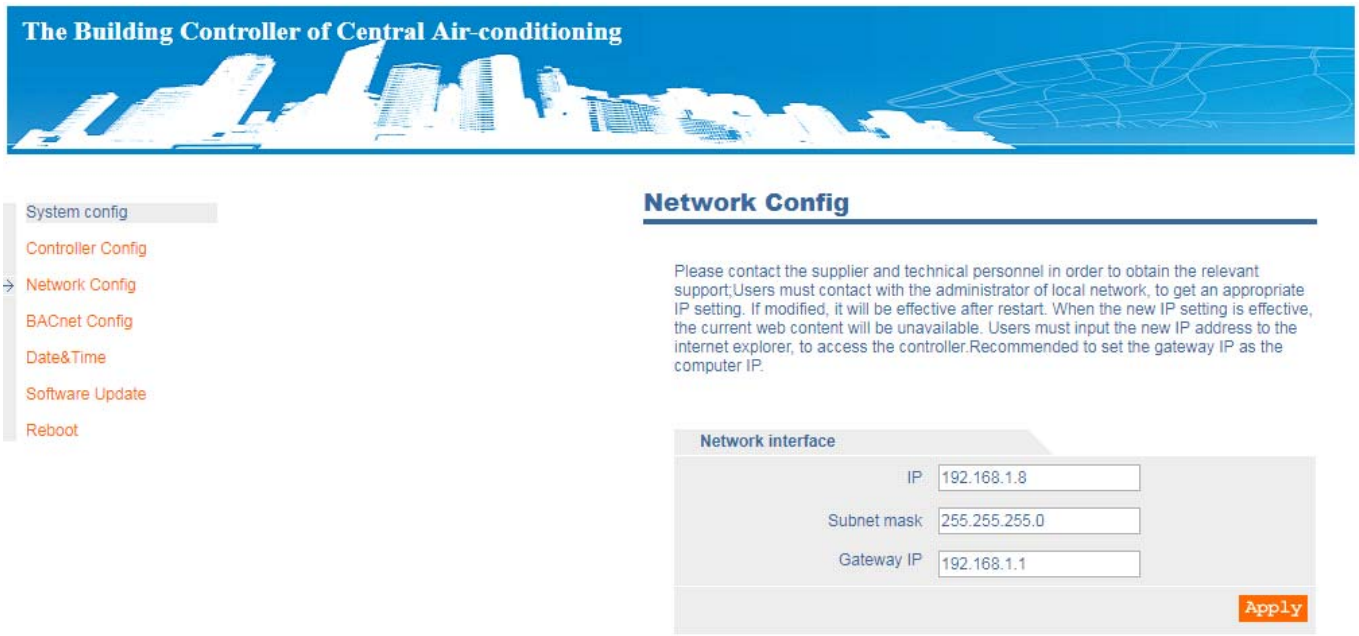


Fig. 13 —Network Configuration

BACnet Configuration — This menu is used to select the virtual BACnet network number and UDP port.

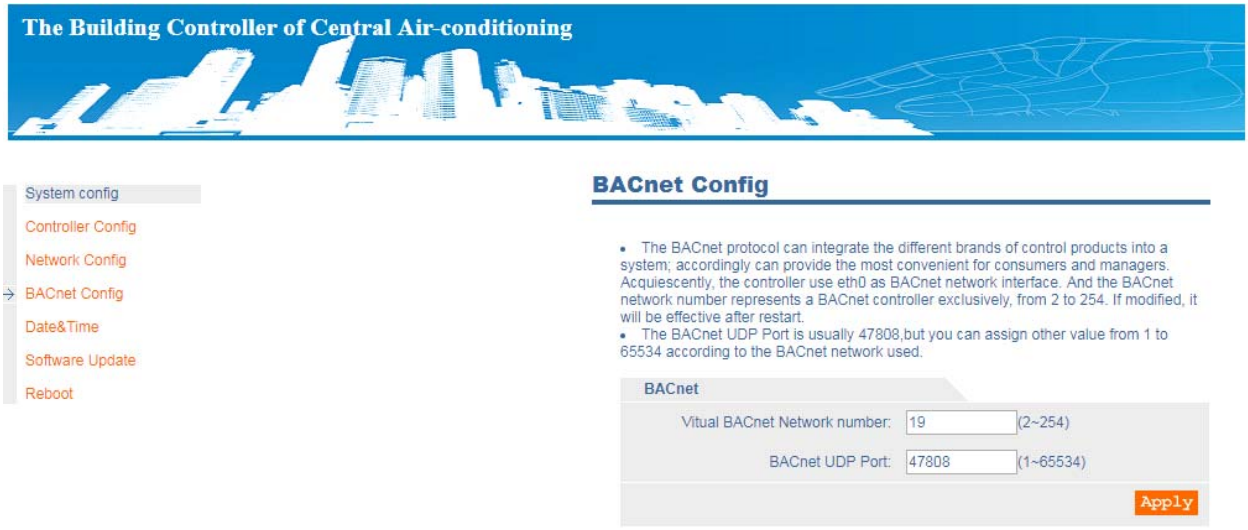


Fig. 14 —BACnet Configuration

Date and Time — This menu is used to set the date and time within the BACnet Interface. Enter time in 24-hour format.

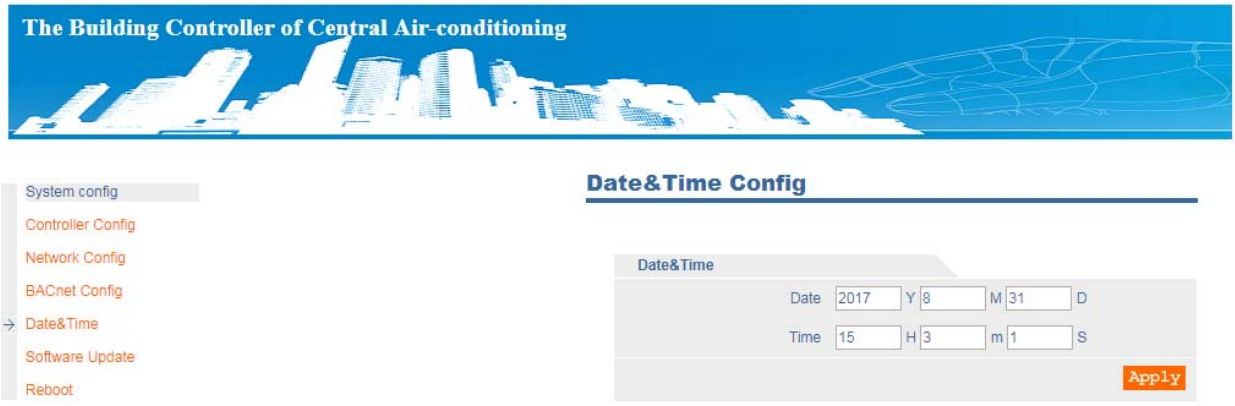


Fig. 15 —Date and Time

Software Update

This feature is for updating the system firmware.

1. As necessary, obtain firmware update file from factory representative.
2. Store on PC connecting to BACnet Interface. This file will be a ".tar" extension.
3. Select "Choose File" to browse to the ".tar" file directory in the PC.
4. Select "Upload"; and the system will install the update and prompt to restart.

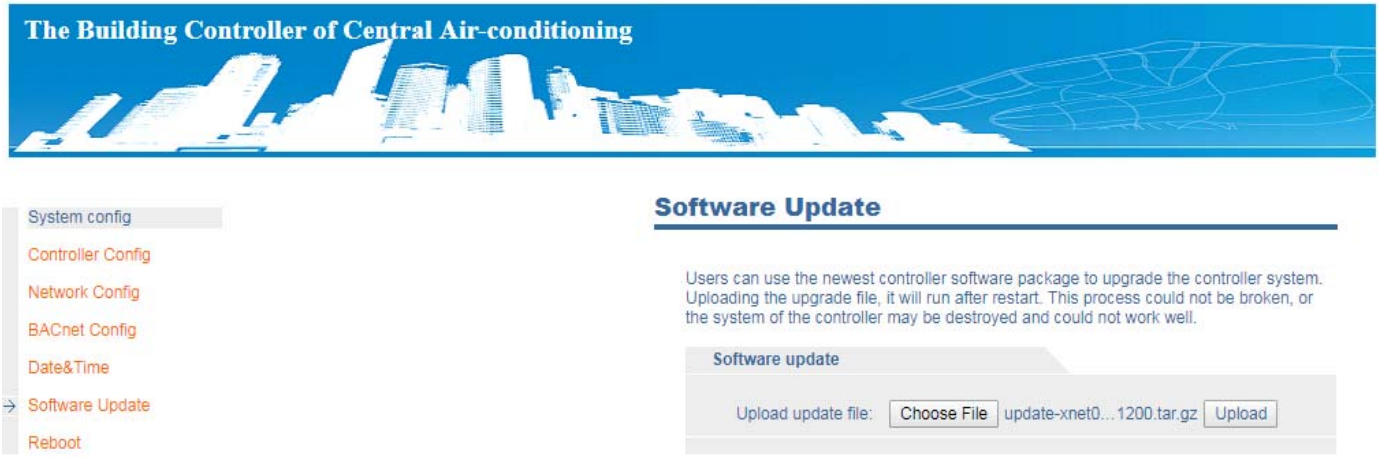


Fig. 16 —Software Update

Reboot — Clicking the Reboot icon will prompt for confirmation. Click "OK" to proceed with reboot.

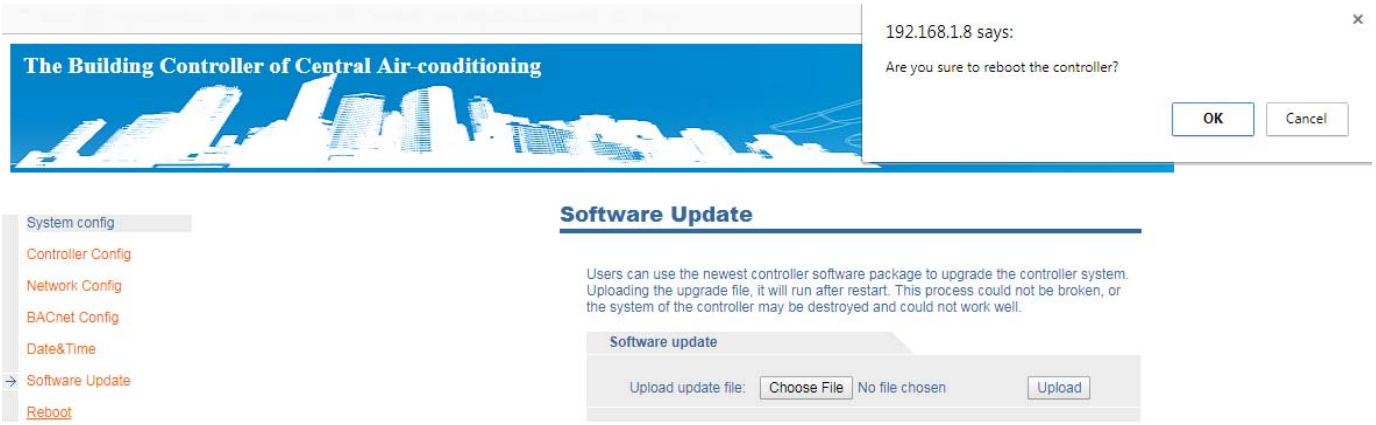


Fig. 17 —Reboot Confirmation

IP Address "Hard" Reset — After powering on the device, connect XYE port 0 and port 1 as shown in the figure below. After restarting, the IP address will be reset to 192.168.1.8, and the remaining user settings will be retained.

Fig. 18 —Connect XYE Port 0 and Port 1

OBJECT DESCRIPTION OF BACNET COMMUNICATION

Introduction — The connected VRF system(s) have sophisticated internal controls that manage the capacity among individual indoor units. When integrated to a BMS (building management system), the VRF system(s) will only need to receive basic commands, such as mode and setpoint, based on the building's schedule. It is *not* necessary for the BMS to decide how much capacity is required for a certain zone, or what fan speed is required to satisfy a zone, which may be typical for a traditional, fixed-speed system.

The BACnet Interface includes a built-in Web Interface that functions as a "stand-alone" central controller. Therefore, it is possible for commands to be sent to the VRF system(s) from this Web Interface, as well as any commands sent over BACnet.

These multiple sources of commands should be coordinated so they do not conflict. The VRF system(s) will follow the last command received—whether from the Web Interface or BACnet.

Device ID — Each Indoor Unit connected to the BACnet Interface needs to have a unique ID in the BACnet / IP building network.

RULE OF ID GENERATION — ID = (virtual BACnet network number) (port number) (Indoor Unit network address)

ID = NNNPAAA

- NNN = Virtual BACnet Network Number
  The BACnet network virtual number of the Interface is set using the web interface;
- P = XYE Port number
  0 ~ 3, are counted (Left to Right) away from the Ethernet port
- AAA = Network address of unit
  Indoor units: 0 ~ 95
  Outdoor units: 96 ~ 127

Indoor Unit Objects — There are 36 BACnet objects for each indoor unit for the BACnet building system to control.

Table 4 —Indoor Unit Objects

Name	Instance Number	Description
IDU_AI_RoomTemp	AI 1	Room temperature status
IDU_AI_SetTemp	AI 2	Setting temperature status
IDU_AI_DualPointCoolingStatus	AI 3	Dual point cooling status
IDU_AI_DualPointHeatingStatus	AI 4	Dual point heating status
IDU_AI_CoolTempLimitStatus	AI 5	Cooling temperature limit status
IDU_AI_HeatTempLimitStatus	AI 6	Heating temperature limit status
IDU_AI_MalfunctionCode	AI 7	Malfunction code
IDU_AI_OutletAirTemp (IDU_AI_T2Temp)	AI 8	Outlet air temperature or T2 temperature
IDU_BI_OnOffStatus	BI 1	On/Off status
IDU_BI_Alarm	BI 2	Alarm identification
IDU_BI_VaneHorizontalStatus	BI 3	Vane horizontal status
IDU_BI_VaneVerticalStatus	BI 4	Vane vertical status
IDU_BI_RCLockStatus	BI 5	RC lock status
IDU_BI_ControllerLockStatus	BI 6	Controller lock status
IDU_BI_SwingLockStatus	BI 7	Swing lock status
IDU_MI_ModeStatus	MI 1	Mode status
IDU_MI_FanSpeedStatus	MI 2	Fan speed status
IDU_MI_ModeLimitStatus	MI 3	Mode lock status
IDU_MI_OnOffLimitStatus	MI 4	On/Off lock status
IDU_MI_FanLockStatus	MI 5	Fan lock status
IDU_A0_TempSetting	A0 1	Setting temperature
IDU_A0_DualPointCoolingSetting	A0 2	Dual point cooling setting
IDU_A0_DualPointHeatingSetting	A0 3	Dual point heating setting
IDU_A0_CoolTempLimitSetting	A0 4	Cooling temperature limit
IDU_A0_HeatTempLimitSetting	A0 5	Heating temperature limit
IDU_B0_OnOffSetting	B0 1	On/Off setting
IDU_B0_VaneHorizontalSetting	B0 2	Vane horizontal setting
IDU_B0_VaneVerticalSetting	B0 3	Vane vertical setting
IDU_B0_RCLockSetting	B0 4	RC lock setting
IDU_B0_ControllerLockSetting	B0 5	Controller lock setting
IDU_B0_SwingLockSetting	B0 6	Swing lock setting
IDU_M0_ModeSetting	M0 1	Mode setting
IDU_M0_FanSpeedSetting	M0 2	Fan speed setting
IDU_M0_ModeLimitSetting	M0 3	Mode lock setting
IDU_M0_OnOffLimitSetting	M0 4	On/Off lock setting
IDU_M0_FanLockSetting	M0 5	Fan lock setting

Table 5 —Device Information

Property Name	Property Value
object-identifier	(device, 190000)
object-name	“room101”
object-type	device
system-status	operational
vendor-name	“CAC”
vendor-identifier	544
model-name	“IDU, type-1, HWALL”
firmware-revision	“2.0”
application-software-version	“2.0”
protocol-version	1
protocol-revision	7
protocol-conformance-class	3
protocol-services-support	(F,F,F,F,F,F,F,F,F,F,F,F,T,F,T,T,T,F,F,F,F,...)
protocol-object-types	(T,T,T,T,T,F,F,T,F,F,F,F,T,T,T,F,F,F,F,F,T,F,...)
object-list	{(device, 190000), (analog-input, 1)...}
max-apdu-length-accepted	1476
segmentation-supported	segmented-both
apdu-segment-timeout	2000
apdu-timeout	63000
number-of-apdu-retries	3
device-address-binding	{}

Description:

- Object-identifier: BACnet ID of the unit
- Object-name: The default name is Device-ID, which can be changed in the Web Interface of the 40VM900052 BACnet Interface. The device name will be synchronized to the Object-name after rebooting the Interface.
- Model-name: model information.

Table 6 —Supported Indoor Units

IDU Type Number	IDU Type
0	CASS
1	HWALL
2	MDUCT
3	LDUCT
4	VERT
5	HDUCT
6	SCASS
7	UCF
8	FLRCR
10	OA
11	ERV I/O

UNKNOWN IDU TYPE

If the model connected is not supported by the 40VM900053 BACnet interface, the ‘Unknown IDU Type’ is displayed.

Output Class Variables

Output variable is readable and writable sent by the BACnet Interface to the outdoor unit.

Table 7 —IDU On/Off Setting

Name	Value
object-identifier	(B0, 1)
object-name	“IDU_BO_OnOffSetting”
object-type	binary-output
description	“On/Off Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	inactive

- Object-identifier:Binary-Output 1
- Object-name : IDU_BO_OnOffSetting

Present-Value: a readable and writable value, stands for the on/off status of this indoor unit.

Table 8 —Present Value

state	number
power off	0
power up	1

The first time the Interface is powered on, it sends a control command: The operation mode, the set fan speed, and the set temperature are sent according to the last operation record.

When the indoor unit is powered on for the first time, the Interface will send the default command of 74°F and low fan speed.

Running Mode Setting — If the Indoor Unit supports automatic mode, the Interface automatically detects the type of system and Indoor Unit it is connected to.

Table 9 —IDUs that Support Automatic Mode

Property Name	Property Value
object-identifier	(multistate-output, 1)
object-name	“IDU_MO_ModeSetting”
object-type	multistate-output
present-value	1
description	“Mode Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	6
state-text	{OFF, FAN, COOL, HEAT, AUTO, DRY}
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	1
reliability	no-fault-detected

Table 10 —IDUs that do not Support Automatic Mode

Property Name	Property Value
object-identifier	(multistate-output, 1)
object-name	“IDU_MO_ModeSetting”
object-type	multistate-output
present-value	3
description	“Mode Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	6
state-text	{OFF, FAN, COOL, HEAT, Reserved, DRY}
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 1
- Object-name : IDU_MO_ModeSetting

Present-Value: a readable and writable value stands for the mode of this indoor unit.

Table 11 —Present Value

Models that support automatic mode	Models that do not support automatic mode	Number
Power off	Power off	1
Fan	Fan	2
Cooling	Cooling	3
Heating	Heating	4
Auto	N/A	5
Dry	Dry	6
ERV	**New Indoor Units**	

Table 12 —Present Value

Models that support automatic mode	Models that do not support automatic mode	Number
OFF	OFF	1
ON	FAN	2
Reserved	Cooling	3
Reserved	Heat	4
Reserved	Reserved	5
Reserved	Reserved	6

Fan Speed Setting —

Table 13 —Fan Speed Setting

Property Name	Property Value
object-identifier	(multistate-output, 2)
object-name	“IDU_MO_FanSpeedSetting”
object-type	multistate-output
present-value	4
description	“Fan Speed Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	5
state-text	{OFF, LOW, MEDIUM, HIGH, AUTO}
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 2
- Object-name : IDU_MO_FanSpeedSetting

Present-Value: a readable and writable value stands for the air speed of this indoor unit.

Table 14 —Present Value

Speed Setting	Number
off	1
low	2
med	3
high	4
auto	5

Multistate-Output 1 IDU_MO_ModeSetting: If ‘Multistate-Output 1 IDU_MO_ModeSetting’ is set to shut down or dehumidify mode, the variable set value is invalid.

Table 15 —Temperature Setting

Name	Value
object-identifier	(A0, 1)
object-name	“IDU_AO_TempSetting”
object-type	analog-output
description	“Temperature Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	22
units	degrees-Celsius
reliability	no-fault-detected
min-press-value	12
max-press-value	30
resolution	1
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	25
cov-increment	1

- Object-identifier : Analog-Output 1
- Object-name : IDU_AO_TempSetting

Present-Value : 62~86˚ : 54~86˚

Multistate-Output 1 IDU_MO_ModeSetting units:

Present-Value: a readable and writable value, stands for the temperature of this indoor unit.

Cooling mode: The temperature setting range is Fahrenheit: 62 ~ 86.

Heating mode, the temperature setting range is Fahrenheit: 54 ~ 86.

If 'Multistate-Output 1 IDU_MO_ModeSetting' is set to power off or Fan Mode, the variable set value is invalid.

Horizontal Swing Setting —

Table 15 —Horizontal Swing Setting

Name	Value
object-identifier	(B0, 2)
object-name	"IDU_BO_VaneHorizontalSettin g"
object-type	binary-output
description	"Vane Horizontal Setting"
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	""
present-value	inactive
inactive-text	"off"
active-text	"on"
polarity	normal
reliability	no-fault-detected
polarity-array	{NULL, NULL, NULL, NULL...}
relinquish-default	inactive

- Object-identifier : Binary-Output 2
- Object-name : IDU_BO_VaneHorizontalSetting

Present-Value: a readable and writable value stands for the settings of Horizontal Swing of this indoor unit.

Table 16 —Present Value

Status	Number
Horizontal Swing off	0
Horizontal Swing on	1

For indoor units that do not support horizontal swing, the variable set value is invalid.

Vertical Swing Setting —

Table 17 —Vertical Swing Setting - Objects that Support Vertical Swing

Name	Value
object-identifier	(B0, 3)
object-name	"IDU_BO_VaneVerticalSetting"
object-type	binary-output
description	"Vane Vertical Setting"
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	""
present-value	inactive
inactive-text	"off"
active-text	"on"
polarity	normal
reliability	no-fault-detected
polarity-array	{NULL, NULL, NULL, NULL...}
relinquish-default	inactive

- Object-identifier : Binary-Output 3
- Object-name : IDU_BO_VaneVerticalSetting

Present-Value: a readable and writable value stands for the settings of Vertical Swing of this indoor unit.

Table 18 —Present Value

Status	Number
Vertical Swing off	0
Vertical Swing on	1

For indoor units that do not support vertical swiveling, the variable set value is invalid.

Table 19 —Objects that do not Support Vertical Swing

Name	Value
object-identifier	(A0, 1)
object-name	"IDU_AO_DualPointCoolingSetting"
object-type	analog-output
description	"Dual Point (Cooling) Setting"
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	""
present-value	65
units	degrees-Fahrenheit
reliability	no-fault-detected
min-press-value	62
max-press-value	86
resolution	1
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	75
cov-increment	1

(Only effective on the model that has auto mode function)

- Object-identifier : Analog-Output 2
- Object-name : IDU_AO_DualPointCoolingSetting

Present-Value: a readable and writable value stands for present the cooling temperature settings in automatic mode of this indoor unit. Fahrenheit: 62~86.

This variable is valid only when the indoor unit operation mode is set to the automatic mode.

- Analog-Output 1 IDU_O_TempSetting
- Analog-Output 2 IDU_AO_DualPointCoolingSetting
- Analog-Output 3 IDU_AO_DualPointHeatingSetting
- Analog-Output 2 IDU_AO_DualPointCoolingSetting
- Analog-Output 3 IDU_AO_DualPointHeatingSetting

When the mode is auto, the set temperature is no longer executed according to Analog-Output1 IDU_O_TempSetting, and both the Analog-Output 2 IDU_AO_DualPointCoolingSetting and the Analog-Output 3 IDU_AO_DualPointHeatingSetting must be set.

When the room temperature reaches the set value of Analog-Output 2 IDU_AO_DualPointCoolingSetting, the indoor unit operates in the cooling mode. When the indoor temperature reaches the set value of Analog-Output 3 IDU_AO_DualPointHeatingSetting, the unit operates in heating mode.

Auto Mode Dual Set Point Heating Temperature Setting —

Table 20 —Auto Mode Dual Set Point Heating Temperature Setting

Name	Value
object-identifier	(A0, 3)
object-name	“IDU_AO_DualPointHeatingSetting”
object-type	analog-output
description	“Dual Point (Heating) Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	65
units	degrees-Fahrenheit
reliability	no-fault-detected
min-press-value	54
max-press-value	86
resolution	1
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	70
cov-increment	1

(Only effective on the model has auto mode function)

- Object-identifier : Analog-Output 3
- Object-name : IDU_AO_DualPointHeatingSetting

Present-Value: a readable and writable value, stands for present heating temperature setting value of this indoor unit. Centigrade: 12~30; Fahrenheit 54~86.

This variable is valid only when the indoor unit operation mode is set to the automatic mode.

- Analog-Output 1 IDU_O_TempSetting
- Analog-Output 2 IDU_AO_DualPointCoolingSetting
- Analog-Output 3 IDU_AO_DualPointHeatingSetting
- Analog-Output 2 IDU_AO_DualPointCoolingSetting
- Analog-Output 3 IDU_AO_DualPointHeatingSetting

When the mode is auto, the set temperature is no longer executed according to Analog-Output 1 IDU_O_TempSetting, and both the Analog-Output 2 IDU_AO_DualPointCoolingSetting and the Analog-Output 3 IDU_AO_DualPointHeatingSetting must be set.

When the room temperature reaches the set value of Analog-Output 2 IDU_AO_DualPointCoolingSetting, the indoor unit operates in the cooling mode. When the indoor temperature reaches the set value of Analog-Output 3 IDU_AO_DualPointHeatingSetting, the unit operates in heating mode.

(Temperature units, automatic identification)

Cooling Mode Lower Temperature Lock Value —

Table 21 —Cooling Mode Lower Temperature Lock Value

Name	Value
object-identifier	(A0, 4)
object-name	“IDU_AO_CoolTempLimitSetting”
object-type	analog-output
description	“Cooling Temperature Limit Setting”
status-flags	(F,F,F,F)

Table 21 —Cooling Mode Lower Temperature Lock Value

Name	Value
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
min-press-value	0
max-press-value	255
resolution	1
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	255
cov-increment	1

- Object-identifier : Analog-Output 4
- Object-name : IDU_AO_CoolTempLimitSetting

Present-Value: a readable and writable value that stands for the present lower temperature setting value limit under cooling mode of this indoor unit.

Fahrenheit: 62~86.

0 represents the lower limit of the unlocking cooling temperature.

- Analog-Output 1 IDU_AO_TempSetting
- Analog-Output 2 IDU_AO_DualPointCoolingSetting

Example: If the variable is set to 24 degrees, the ‘IDU_AO_TempSetting’ setting can only be $\geq$ 24 degrees in the cooling mode, and will not be executed when the set value is < 24 degrees.

Analog-Output 2: The IDU_AO_DualPointCoolingSetting setting can only be set to $\geq$ 24 degrees in automatic mode. When the set value is < 24 degrees, the indoor unit will not be executed.

(temperature unit, automatic identification)

Heating Mode Higher Temperature Lock Value —

Table 22 —Heating Mode Higher Temperature Lock Value

Name	Value
object-identifier	(A0, 5)
object-name	“IDU_AO_HeatTempLimitSetting”
object-type	analog-output
description	“Heating Temperature Limit Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
min-press-value	0
max-press-value	255
resolution	1
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	255
cov-increment	1

- Object-identifier : Analog-Output 5
- Object-name : IDU_AO_HeatTempLimitSetting

Present-Value: a readable and writable value that stands for the present upper temperature setting value limit under heating mode of this indoor unit.

Fahrenheit 62~86.

0 represents the unlock heating temperature upper limit.

- Analog-Output 1 IDU_AO_TempSetting
- Analog-Output 3 IDU_AO_DualPointHeatingSetting

Example: If the variable is set to 24 degrees, the 'IDU_AO_TempSetting1' setting can only be ≥ 24 degrees in the cooling mode, and will not be executed when the set value is <24 degrees.

Analog-Output 3: IDU_AO_DualPointCoolingSetting setting can only be set to ≥ 24 degrees in automatic mode. When set value is < 24 degrees, indoor unit will not be executed.

(Units: temperature unit, automatic identification)

Mode Limit Setting —

Table 23 —Mode Limit Setting

Property Name	Property Value
object-identifier	(MO, 3)
object-name	"IDU_MO_ModeLimitSetting"
object-type	multistate-output
present-value	1
description	"Mode Limit Setting"
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	3
state-text	{UNLOCK, LOCK COOL, LOCK HEAT}
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 3
- Object-name : IDU_MO_ModeLimitSetting

Present-Value: readable and writable variable that represents present set value of mode limit of this indoor unit.

Table 24 —Present Value

Status	Value
unlock on/off limit	1
lock on	2
lock off	3

In locked cooling state, the indoor unit will only respond to the cooling, air supply, dehumidification, and power off modes. If the unit receives a heating command, it will shut down.

In the locked heating state, the indoor unit will only respond to heating and power off mode commands. If the unit receives other command of mode settings, it will shut down.

Table 25 —On/Off Limit Setting

Name	Value
object-identifier	(MO, 4)
object-name	"IDU_MO_OnOffLimitSetting"
object-type	multistate-output
present-value	1
description	"On/Off Limit Setting"
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F

Table 25 —On/Off Limit Setting

Name	Value
number-of-states	3
state-text	{UNLOCK, LOCK ON, LOCK OFF}
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 4
- Object-name : IDU_MO_OnOffLimitSetting

Present-Value: readable and writable variable that represents present On/Off lock setting of this indoor unit.

Table 26 —Present Value

Status	Value
unlock on/off limit	1
lock on	2
lock off	3

When "on" is locked, this indoor unit cannot be shut down.

When "off" is locked, this indoor unit cannot be turned on.

Fan Speed Lock Setting —

Table 27 —Fan Speed Lock Setting

Property Name	Property Value
object-identifier	(multistate-output, 5)
object-name	"IDU_MO_FanLockSetting"
object-type	multistate-output
present-value	4
description	"Fan Lock/Unlock Setting"
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	8
state-text	{Unlock, Low, Reserved, Medium, Reserved, High, Reserved, Reserved}
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 5
- Object-name : IDU_MO_FanLockSetting

Present-Value: a readable and writable variable that represent the present fan speed lock setting of this indoor unit.

Table 28 —Present Value

Fan Speed	Value
unlock fan speed	1
low	2
medium	4
high	6

When a specific fan speed is locked, the indoor unit can only run in unlocked fan speeds or auto Fan. The indoor unit fan will not response to locked command.

Remote Controller Lock Setting —

Table 29 —Remote Controller Lock Setting

Name	Value
object-identifier	(B0, 4)
object-name	“IDU_BO_RCLockSetting”
object-type	binary-output
description	“Remote Control Lock Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive text	“off”
active text	“on”
polarity	normal
reliability	no-fault-detected
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	inactive

- Object-identifier : Binary-Output 4
- Object-name : IDU_BO_RCLockSetting

Present-Value: a readable and writable variable that represent present remote controller lock setting of this indoor unit.

Table 30 —Present Value

Status	Value
unlock remote control	0
lock remote control	1

Wired Controller Lock Setting —

Table 31 —Wired Controller Lock Setting

Name	Value
object-identifier	(B0, 5)
object-name	“IDU_BO_ControllerLockSetting”
object-type	binary-output
description	“Controller Control Lock Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
inactive text	“off”
active text	“on”
polarity	normal
reliability	no-fault-detected
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	inactive

- Object-identifier : Binary-Output 5
- Object-name : IDU_BO_ControllerLockSetting

Present-Value: a readable and writable variable that represent the present wired controller lock setting of this indoor unit.

Table 32 —Present Value

Status	Value
unlock wired controller	0
lock wired controller	1

Swing Lock Setting —

Table 33 —Swing Lock Setting

Name	Value
object-identifier	(B0, 6)
object-name	“IDU_BO_SwingLockSetting”
object-type	binary-output
description	“Swing Lock/Unlock Setting”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive text	“off”
active text	“on”
polarity	normal
reliability	no-fault-detected
priority-array	{NULL, NULL, NULL, NULL...}
relinquish-default	inactive

- Object-identifier : Binary-Output 6
- Object-name : IDU_BO_SwingLockSetting

Present-Value: a readable and writable variable that stands for the present indoor ambient temperature of this indoor unit.

Table 34 —Present Value

Status	Value
unlock swing	0
lock swing	1

For the indoor units that do not support swing lock, the variable is invalid.

Input Variables — Input variables are read-only, which the Interface read from indoor unit.

Table 35 —Input Variables

Name	Value
object-identifier	(AI, 1)
object-name	“IDU_AI_RoomTemp”
object-type	analog-output
description	“Room Temperature”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	25
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	1

- Object-identifier : Analog-Input 1
- Object-name : IDU_AI_RoomTemp

Present-Value: a read-only variable that stands for the present room temperature of this indoor unit.

(Units: Temperature unit, automatic identification)

Set Temperature —

Table 36 —Set Temperature

Name	Value
object-identifier	(AI, 2)
object-name	“IDU_AI_SetTemp”
object-type	analog-output
description	“Setting Temperature Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	22
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	1

- Object-identifier : Analog-Input 2
- Object-name : IDU_AI_SetTemp

Present-Value: a read-only variable value that stands for the present set temperature of this indoor unit. Range: Fahrenheit 54~86.

(Unit: Automatic identification)

Indoor Unit Operation Mode — The Interface will automatically determine if the model type supports auto mode.

Table 37 —Indoor Unit Mode Operation

Property Name	Property Value
object-identifier	(multistate-input, 1)
object-name	“IDU_MI_ModeStatus”
object-type	multistate-input
present-value	1
description	“Mode Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	6
state-text	{OFF, FAN, COOL, HEAT, AUTO, DRY}
reliability	no-fault-detected

Table 38 —System does not Support Auto Mode

Property Name	Property Value
object-identifier	(multistate-input, 1)
object-name	“IDU_MI_ModeStatus”
object-type	multistate-input
present-value	1
description	“Mode Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	6
state-text	{OFF, FAN, COOL, HEAT, Reserved, DRY}
reliability	no-fault-detected

- Object-identifier : Multistate-Input 1
- Object-name : IDU_MI_ModeStatus

Present-Value: a read-only variable value that stands for the present operation mode of this indoor unit.

Table 39 —Indoor Unit Functions

Models that support automatic mode	Models that do not support automatic mode	Number
Power off	Power off	1
Fan	Fan	2
Cooling	Cooling	3
Heating	Heating	4
Auto	N/A	5
Dry	Dry	6
ERV	**New Indoor Units**	
OFF	OFF	1
ON	FAN	2
Reserved	Cooling	3
Reserved	Heat	4
Reserved	Reserved	5
Reserved	Reserved	6

Indoor Unit On/Off State —

Table 40 —Indoor Unit On/Off State

Property Name	Property Value
object-identifier	(BI, 1)
object-name	“IDU_BI_OnOffStatus”
object-type	binary-input
description	“On/Off Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	active
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 1
- Object-name : IDU_BI_OnOffStatus

Present-Value: a read-only variable value that stands for the present on/off state of this indoor unit.

Table 41 —Present Value

State	Value
on	0
off	1

Indoor Unit Fan Speed State —

Table 42 —Indoor Unit Fan Speed State

Property Name	Property Value
object-identifier	(multistate-input, 2)
object-name	“IDU_MI_FanSpeedStatus”
object-type	multistate-input
present-value	4
description	“Fan Speed Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	5
state-text	{OFF, LOW, MEDIUM, HIGH, AUTO}
reliability	no-fault-detected

(Only effective on models that have auto mode)

- Object-identifier : Multistate-Input 2
- Object-name : IDU_MI_FanSpeedStatus

Present-Value: a read-only variable value that stands for the present fan speed state of this indoor unit.

Table 43 —Present Value

Indoor Fan Speed	Value
fan closed	1
low	2
medium	3
high	4
auto	5

Auto Mode Dual Set Point Cooling Temperature Setting —

Table 44 —Auto Mode Dual Set Point Cooling Temperature Setting

Name	Value
object-identifier	(AI, 3)
object-name	“IDU_AI_DualPointCoolingStatus”
object-type	analog-output
description	“Dual Point (Cooling)”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
units	degrees-Fahrenheit
reliability	no-fault-detected
resolution	1
cov-increment	1

(Only effective on models that have auto mode)

- Object-identifier : Analog-Input 3
- Object-name : IDU_AI_DualPointCoolingStatus

Present-Value: a read-only variable value that stands for the present cooling temperature setting value of this indoor unit. Fahrenheit 62~86.

(Units: temperature unit, automatic identification)

Auto Mode Dual Set Point Heating Temperature Setting —

Table 45 —Auto Mode Dual Set Point Heating Temperature Setting

Name	Value
object-identifier	(AI, 4)
object-name	“IDU_AI_DualPointHeatingStatus”
object-type	analog-output
description	“Dual Point (Heating)”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
units	degrees-Fahrenheit
reliability	no-fault-detected
resolution	1
cov-increment	1

(Only effective on models that have auto mode)

- Object-identifier : Analog-Input 4
- Object-name : IDU_AI_DualPointHeatingStatus

Present-Value: a read-only variable value that stands for the present heating temperature setting value of this indoor unit. Fahrenheit 54~86.

(Unit: temperature unit, automatic identification)

Cooling Mode Lower Temperature Lock Value —

Table 46 —Cooling Mode Lower Temperature Lock Value

Name	Value
object-identifier	(AI, 5)
object-name	“IDU_AI_CoolTempLimitStatus”
object-type	analog-output
description	“Cooling Limit Temperature”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	1

- Object-identifier : Analog-Input 5
- Object-name : IDU_AI_CoolTempLimitStatus

Present-Value: a read-only variable value that stands for the present lower temperature setting value limit under cooling mode of this indoor unit. Fahrenheit 62~86. 0 means no lock.

(Units: temperature unit, automatic identification)

Heating Mode Higher Temperature Lock Value —

Table 47 —Heating Mode Higher Temperature Lock Value

Name	Value
object-identifier	(AI, 6)
object-name	“IDU_AI_HeatTempLimitStatus”
object-type	analog-output
description	“Heating Limit Temperature”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	1

- Object-identifier : Analog-Input 6
- Object-name : IDU_AI_HeatTempLimitStatus

Present-Value: a read-only variable value that stands for the present upper temperature setting value limit under heating mode of this indoor unit. Fahrenheit 62~86. 0 means no lock.

(Units: temperature unit, automatic identification)

Fault Codes —

Table 48 —Fault Codes

Name	Value
object-identifier	(AI, 7)
object-name	“IDU_AI_MalfunctionCode”
object-type	analog-output
description	“Malfunction Code”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	no-units
reliability	no-fault-detected
resolution	1
cov-increment	1

- Object-identifier : Analog-Input 7
- Object-name : IDU_AI_MalfunctionCode

Present-Value: a read-only variable value that stands for the present fault code of this indoor unit. The malfunction codes are as follows:

Table 49 —Malfunction Codes

1	2	3	4	5	6	7	8	9	10
dd	E1	E2	E3	E4	E5	E6	E7	E8	E9
11	12	13	14	15	16	17	18	19	20
EA	EB	EC	ED	EE	EF	EH	EL	EP	EU
21	22	23	24	25	26	27	28	29	30
C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
31	32	33	34	35	36	37	38	39	40
CA	CB	CC	CD	CE	CF	CH	CL	CP	CU
41	42	43	44	45	46	47	48	49	50
F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
51	52	53	54	55	56	57	58	59	60
FA	FB	FC	FD	FE	FF	FH	FL	FP	FU
61	62	63	64	65	66	67	68	69	70
H0	H1	H2	H3	H4	H5	H6	H7	H8	H9
71	72	73	74	75	76	77	78	79	80
HA	HB	HC	HD	HE	HF	HH	HL	HP	HU
81	82	83	84	85	86	87	88	89	90
P0	P1	P2	P3	P4	P5	P6	P7	P8	P9
91	92	93	94	95	96	97	98	99	100
PA	PB	PC	PD	PE	PF	PH	PL	PP	PU
101	102	103	104	105	106	107	108	109	110
L0	L1	L2	L3	L4	L5	L6	L7	L8	L9
111	112	113	114	115	116	117	118	119	120
LA	LB	LC	LD	LE	LF	LH	LL	LP	LU
121	122	123	124	125	126	127	128	129	130
U0	U1	U2	U3	U4	U5	U6	U7	U8	U9
131	132	133	134	135	136	137	138	139	140
UA	UB	UC	UD	UE	UF	UH	UL	UP	UU

Fault codes are only used for debugging functions. 141 ~ 240 are reserved faults, and 241 ~ 255 are reserved bytes.The meaning of the specific fault code is subject to the explanation of the service manual.

Fault Alarm Status —

Table 50 —Fault Alarm Status

Name	Value
object-identifier	(BI, 2)
object-name	“IDU_BI_Alarm”
object-type	binary-output
description	“Alarm Identification”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 2
- Object-name : IDU_BI_Alarm

Present-Value： a read-only variable value that stands for the present fault alarm status of this indoor unit.

Table 51 —Present Value

Status	Value
No fault	0
Fault	1

Horizontal Swing State —

Table 52 —Horizontal Swing State

Name	Value
object-identifier	(BI, 3)
object-name	“IDU_BI_VaneHorizontalStatus”
object-type	binary-input
description	“Vane Horizontal Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 3
- Object-name : IDU_BI_VaneHorizontalStatus

Present-Value: a read-only variable value that stands for present horizontal swing status of this indoor unit.

Table 53 —Present Value

Status	Value
Horizontal Swing On	0
Horizontal Swing Off	1

This value is invalid for indoor units that do not support horizontal swing.

Vertical Swing Status —

Table 54 —Vertical Swing Status

Name	Value
object-identifier	(BI, 4)
object-name	“IDU_BI_VaneVerticalStatus”
object-type	binary-input
description	“Vane Vertical Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F

Table 54 —Vertical Swing Status

Name	Value
device-type	“”
present-value	inactive
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 4
- Object-name : IDU_BI_VaneVerticalStatus

Present-Value: a read-only variable value that stands for the present vertical swing status of this indoor unit.

Table 55 —Present Value

Status	Value
Vertical Swing On	0
Vertical Swing Off	1

This value is invalid for indoor units that do not support vertical swing.

Mode Limit Status —

Table 56 —Mode Limit Status

Name	Value
object-identifier	(MI, 3)
object-name	“IDU_MI_ModelLimitStatus”
object-type	multistate-input
present-value	1
description	“Mode Limit Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	3
state-text	{UNLOCK, LOCK COOL, LOCK HEAT}
reliability	no-fault-detected

- Object-identifier : Multistate-Input 3
- Object-name : IDU_MI_ModeLimitStatus

Present-Value: a read-only variable value that stands for the present mode limit status of this indoor unit.

Table 57 —Present Value

Status	Value
Unlock	1
Lock Heating	2
Lock Cooling	3

On/Off Limit Status —

Table 58 —On/Off Limit Status

Name	Value
object-identifier	(MI, 4)
object-name	“IDU_MI_OnOffLimitStatus”
object-type	multistate-input
present-value	1
description	“On/Off Limit Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	3
state-text	{UNLOCK, LOCK ON, LOCK OFF}
reliability	no-fault-detected

- Object-identifier : Multistate-Input 4
- Object-name : IDU_MI_OnOffLimitStatus

Present-Value: a read-only variable value that stands for the present on/off limit status of this indoor unit.

Table 59 —Present Value

Status	Value
Unlock	1
Lock On	2
Lock Off	3

Indoor Unit Fan Speed Lock Status —

Table 60 —Indoor Unit Fan Speed Lock Status

Property Name	Property Value
object-identifier	(multistate-input, 5)
object-name	“IDU_MI_FanLockStatus”
object-type	multistate-input
present-value	4
description	“Fan Speed Lock Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	8
state-text	{Unlock, Low, Reserved, Medium, Reserved, High, Reserved, Reserved}
reliability	no-fault-detected

- Object-identifier : Multistate-Input 5
- Object-name : IDU_MI_FanLockStatus

Present-Value： a read-only variable value that stands for the present fan speed lock status of this indoor unit.

Table 61 —Present Value

Speed	Value
Fan Speed Unlock	1
Low Fan Speed	2
Medium Fan Speed	4
High Fan Speed	6

Evaporator Temperature —

Table 62 —Evaporator Temperature

Name	Value
object-identifier	(AI, 8)
object-name	“IDU_AI_T2Temp”
object-type	analog-output
description	“T2 Temperature”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	24
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	1

- Object-identifier : Analog-Input 8
- Object-name : IDU_AI_T2Temp

Present-Value: a read-only variable value that stands for the present evaporator temperature of this indoor unit.

This value is invalid if the indoor unit does not support evaporator temperature.

(Units: temperature unit, automatic identification)

Remote Control Lock Status —

Table 63 —Remote Control Lock Status

Name	Value
object-identifier	(BI, 5)
object-name	“IDU_BI_RCLockStatus”
object-type	binary-output

Table 63 —Remote Control Lock Status

Name	Value
description	“Remote Control Lock/Unlock Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 5
- Object-name : IDU_BI_RCLockStatus

Present-Value: a read-only variable value that stands for the present remote control lock status of this indoor unit.

Table 64 —Present Value

Status	Value
Unlock	1
Remote Control Lock	2

Wired Controller Lock Status —

Table 65 —Wired Controller Lock Status

Name	Value
object-identifier	(BI, 6)
object-name	“IDU_BI_ControllerLockStatus”
object-type	binary-input
description	“Controller Lock Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 6
- Object-name : IDU_BI_ControllerLockStatus

Present-Value： a read-only variable value that stands for the present wired controller lock status of this indoor unit.

Table 66 —Present Value

Status	Value
Unlock	1
Wired Controller Lock	2

Swing Lock Status —

Table 67 —Swing Lock Status

Name	Value
object-identifier	(BI, 7)
object-name	“IDU_BI_SwingLockStatus”
object-type	binary-input
description	“Swing Lock/Unlock Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 7
- Object-name : IDU_BI_SwingLockStatus

  Present-Value: a read-only variable value that stands for the present Swing lock status of this indoor unit.

Table 68 —Present Value

Status	Value
Unlock	1
Swing Lock	2

This value is invalid for indoor units that do not support Swing Lock.

Outdoor Units — Outdoor units are divided into Header and Follower unit.

There are 20 BACnet objects in the outdoor Header unit and 13 BACnet objects in the outdoor Follower unit for the BACnet building Management system to monitor. Follower units only have input variables (no output variables). The input variables for the Header and Follower are the same.

Table 69 —BACnet Object List of Outdoor Header Unit

Name		Instance Number	Description
ODU_AI_AmbientTemp	1	AI 1	ambient temperature
ODU_AI_CompressorSpeed	2	AI 2	compressor speed
ODU_AI_DischargeTemp1	3	AI 3	discharge temperature 1
ODU_AI_DischargeTemp2	4	AI 4	discharge temperature 2
ODU_AI_DischargeTemp3	5	AI 5	discharge temperature 3
ODU_AI_HighPressure	6	AI 6	high pressure
ODU_AI_LowPressure	7	AI 7	low pressure
ODU_AI_MalfunctionCode	8	AI 8	malfunction code
ODU_AI_Fan1_Speed	9	AI 9	fan 1 speed
ODU_AI_Fan2_Speed	10	AI 10	fan 2 speed
ODU_BI_OnOffStatus	1	BI 1	on/off status
ODU_BI_Alarm	2	BI 2	alarm indication
ODU_MI_ModeStatus	1	MI 1	mode status
SYS_MO_AllEnergyLimit	10	MO 10	
SYS_MO_AllTurnOff	11	MO 11	
SYS_MO_AllCoolStopFan	12	MO 12	
SYS_MO_AllHeatStopFan	13	MO 13	
SYS_MO_AllDryContact4On	14	MO 14	
SYS_MO_AllDryContact4Off	15	MO 15	
SYS_MO_AllDryContact4Delay	16	MO 16	

Table 70 —BACnet Object List of Outdoor Follower Unit

Name		Instance Number	Description
ODU_AI_AmbientTemp	1	AI 1	ambient temperature
ODU_AI_CompressorSpeed	2	AI 2	compressor speed
ODU_AI_DischargeTemp1	3	AI 3	discharge temperature 1
ODU_AI_DischargeTemp2	4	AI 4	discharge temperature 2
ODU_AI_DischargeTemp3	5	AI 5	discharge temperature 3
ODU_AI_HighPressure	6	AI 6	high pressure
ODU_AI_LowPressure	7	AI 7	low pressure
ODU_AI_MalfunctionCode	8	AI 8	malfunction code
ODU_AI_Fan1_Speed	9	AI 9	fan 1 speed
ODU_AI_Fan2_Speed	10	AI 10	fan 2 speed
ODU_BI_OnOffStatus	1	BI 1	on/off status
ODU_BI_Alarm	2	BI 2	alarm indication
ODU_MI_ModeStatus	1	MI 1	mode status

Table 71 —Device Information

Property Name	Property Value
object-identifier	(device, 190096)
object-name	“Device-190096”
object-type	device
system-status	operational
vendor-name	“CAC”
vendor-identifier	544
model-name	“ODU, type-1, Carrier HR”
firmware-revision	“2.0”
application-software-version	“2.0”
protocol-version	1
protocol-revision	7
protocol-conformance-class	3
protocol-services-support	(F,F,F,F,F,F,F,F,F,F,F,T,F,T,T,T,F,F...
protocol-object-types	(T,T,T,T,T,T,F,F,T,F,F,F,F,T,T,F,F,F,F...
object-list	{(device, 190096), (analog-input, 1), (analog-in...
max-apdu-length-accepted	1476
segmentation-supported	segmented-both
apdu-segment-timeout	2000
apdu-timeout	63000
number-of-apdu-retries	3
device-address-binding	{}

- Object-identifier : BACnet ID Object-identifier: BACnet ID number of device
- Object-name Device-ID : CCM08(US-Carrier) web
- Object-name : The default name is Device-ID, which can be changed in the web interface of the Interface. After reboot, the device name will be synchronized to the Object-name.
- Model-name: Device information.

Table 72 —Outdoor Unit that the Interface Supports

Value	Model
1, Carrier HR	Carrier Heat Recovery
2, Carrier HP	Carrier Heat Pump
8, Carrier Mini-VRF	Carrier Mini VRF

Interface and Unknown ODU Type.

If a model that is not supported by the Interface is connected, the Unknown ODU Type is displayed.

Output Variables —

INTERFACE — The output variable is a variable sent by the Interface to the outdoor unit. The output variable is valid only for the outdoor unit host.

Outdoor Unit Output Capacity Limit —

Table 73 —Outdoor Unit Capacity Limit

Name	Value
object-identifier	(multistate-output, 10)
object-name	“SYS_MO_AllEnergyLimit”
object-type	multistate-output
present-value	1
description	“All Energy Limit”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	6
state-text	{No Limit, Level-1, Level-2, Level-3, Level-4, Level-5,}
priority-array	{NULL, NULL, NULL, NULL, NULL, NULL...
relinquish-default	1

Table 73 —Outdoor Unit Capacity Limit

Name	Value
reliability	no-fault-detected

- Object-identifier : Multistate-Output 10
- Object-name : SYS_MO_AllEnergyLimit

Present-Value: The current value of this variable, which represents the output limit of all outdoor units (Header and Follower) under the cooling system to which this unit belongs. It is readable and writable.

Table 74 —Output Capacity Limit

output capacity limit	Value
Release the outdoor unit capacity output limit	1
1 first	2
2 second	3
3 third	4
4 forth	5
5 fifth	6

Note: After sending the value of this variable to the Interface, the Interface must continue communicating (without interruption) with the controlled outdoor unit for at least 1 minute. Otherwise, it will cause the outdoor unit output capacity limit Code setting to report invalid.

Group Control Shutdown Settings —

Table 75 —Group Control Shutdown Settings

Name	Value
object-identifier	(M0, 11)
object-name	“SYS_MO_AllTurnOff”
object-type	multistate-output
present-value	1
description	“Turn Off All Indoor Units”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	2
state-text	{Turn Off, Turn On}
priority-array	{NULL, NULL, NULL, NULL...
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 11
- Object-name : SYS_MO_AllTurnOff

Present-Value: The current value of the variable, which is write-only (unreadable). When the value is set to 1 or 2, the group control object controls all the indoor units that are connected to the Interface as Header controller.

Indoor Unit Fan Speed Set When Indoor Unit Cooling Capacity is 0 —

Table 76 —Indoor Unit Fan Speed Set When Indoor Unit Cooling Capacity is 0

Property Name	Property Value
object-identifier	(multistate-output, 12)
object-name	“SYS_MO_AllCoolStopFan”
object-type	multistate-output
present-value	1
description	“All Cool Stop Fan”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	5
state-text	{Off, Low, Medium, High, Keep}
priority-array	{NULL, NULL, NULL, NULL...
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 12
- Object-name : SYS_MO_AllCoolStopFan

Present-Value: The current value of the variable, which is write-only (unreadable). Represents indoor unit fan speed set when indoor unit cooling capacity is 0. The group control object is of all the indoor units connected to the cooling system to which the outdoor unit belongs.

Table 77 —Present Value

Fan Speed	Value
Turn off fan motor	1
Low	2
Medium	3
High	4
Maintain the actual fan speed setting	5

Indoor Unit Fan Speed Set When Indoor Unit Heating Capacity is 0 —

Table 78 —Indoor Unit Fan Speed Set When Indoor Unit Heating Capacity is 0

Property Name	Property Value
object-identifier	(multistate-output, 13)
object-name	“SYS_MO_AllHeatStopFan”
object-type	multistate-output
present-value	1
description	“All Heat Stop Fan”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	5
state-text	{Off, Low, Medium, High, Keep}
priority-array	{NULL, NULL, NULL, NULL...
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 13
- Object-name : SYS_MO_AllHeatStopFan

Present-Value： The current value of the variable, which is a write-only (unreadable). Represents indoor unit fan speed set when indoor unit heating capacity is 0. The group control object is all the indoor units of the cooling system to which the outdoor unit belongs.

Table 79 —Present Value

Fan Speed	Value
Turn off fan motor	1
Low	2
Medium	3
High	4
Maintain the actual fan speed setting	5

Temperature Difference When Indoor Unit Dry Contact 4 On —

Table 80 —Temperature Difference When Indoor Unit Dry Contact 4 On

Name	Value
object-identifier	(MO, 14)
object-name	“SYS_MO_AllDryContact40n”
object-type	multistate-output
present-value	1
description	“All Dry Contact4 On”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	5
state-text	{1 C, 1 C, 2 C, 2 C, 3 C}
priority-array	{NULL, NULL, NULL, NULL...
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 14
- Object-name : SYS_MO_AllDryContact4On

Present-Value： The current value of the variable, which is write-only (unreadable). Represents temperature difference to determine when indoor unit dry contact 4 is on. The group control object is all the indoor units of the cooling system to which the outdoor unit belongs. The value has different meaning refer to the following table:

Table 81 —Present Value

Celsius	Fahrenheit	Value
1°C	1°F	1
1°C	2°F	2
2°C	3°F	3
2°C	4°F	4
3°C	5°F	5

Temperature Difference When Indoor Unit Dry Contact 4 Off —

Table 82 —Temperature Difference When Indoor Unit Dry Contact 4 Off

Name	Value
object-identifier	(MO, 15)
object-name	“SYS_MO_AllDryContact40ff”
object-type	multistate-output
present-value	1
description	“All Dry Contact4 Off”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	5
state-text	{1 C, 1 C, 2 C, 2 C, 3 C}
priority-array	{NULL, NULL, NULL, NULL...
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 15
- Object-name : SYS_MO_AllDryContact4Off

Present-Value： The current value of the variable, which is write-only (unreadable). Represents temperature difference to determine when indoor unit dry contact 4 off. The group control object is all the indoor units of the cooling system to which the outdoor unit belongs. Value has different meaning. Refer to the following table:

Table 83 —Present Value

Celsius	Fahrenheit	Value
1°C	1°F	1
1°C	2°F	2
2°C	3°F	3
2°C	4°F	4
3°C	5°F	5

Delay of Determine Time When Indoor Unit Dry Contact 4 On —

Table 84 —Delay of Determine Time When Indoor Unit Dry Contact 4 On

Name	Value
object-identifier	(MO, 16)
object-name	“SYS_MO_AllDryContact4Delay”
object-type	multistate-output
present-value	1
description	“All Dry Contact4 Delay”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	3
state-text	{15 secs, 30 secs, 45 secs}
priority-array	{NULL, NULL, NULL, NULL...
relinquish-default	1
reliability	no-fault-detected

- Object-identifier : Multistate-Output 16
- Object-name : SYS_MO_AllDryContact4Delay

Present-Value： The current value of the variable, which is write-only (unreadable). Represents the delay of determine time when indoor unit dry contact 4 on.

Table 85 —Present Value

Delay Time	Value
15	1
30	2
45	3

INPUT VARIABLES — The input variable is a read-only variable that is read by the Interface from the outdoor unit.

Outdoor Unit Refrigeration System Operation Mode —

Table 86 —Outdoor Unit Refrigeration System Operation Mode

Name	Value
object-identifier	(MI, 1)
object-name	“ODU_MI_ModeStatus”
object-type	multistate-input
present-value	1
description	“Mode Status”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
number-of-states	8
state-text	{CLOSED, FAN, COOL, HEAT, FORCE COOL, HOST COOL, FORCE HEAT}
reliability	no-fault-detected

- Object-identifier : Multistate-Input 1
- Object-name : ODU_MI_ModeStatus

Present-Value: the current value of the variable, which read-only. Represents the operation mode of the refrigeration system to which the outdoor unit belongs.

Table 87 —Present Value

Operation Mode	Value
Turn Off	1
Fan	2
Cooling	3
Heating	4
Force to Cool	5
Main Cooling	6
Main Heating	7
Force to Heat	8

Outdoor Unit On/Off Mode —

Table 88 —Outdoor Unit On/Off Mode

Name	Value
object-identifier	(BI, 1)
object-name	“ODU_BI_OnOffStatus”
object-type	binary-input
description	“OnOffStatus”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 1
- Object-name : ODU_BI_OnOffStatus

Present-Value: The current value of the variable, which is read-only. Represents on/off status of the outdoor unit.

Table 89 —Present Value

Status	Value
on	0
off	1

Outdoor Ambient Temperature —

Table 90 —Outdoor Ambient Temperature

Name	Value
object-identifier	(AI, 1)
object-name	“ODU_AI_AmbientTemp”
object-type	analog-input
description	“Ambient Temperature”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	25
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 1
- Object-name : ODU_AI_AmbientTemp

Present-Value: The current value of the variable, which is read-only. Represents outdoor ambient temperature of this outdoor unit.

(Units: temperature unit, default Celsius)

Speed of Outdoor Unit Fan Motor 1 —

Table 91 —Speed of Outdoor Unit Fan Motor 1

Name	Value
object-identifier	(AI, 9)
object-name	“ODU_AI_Fan1_Speed”
object-type	analog-input
description	“Fan 1 Speed”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 9
- Object-name : ODU_AI_Fan1_Speed

Present-Value： The current value of the variable, which is read-only. Represents the current speed of this outdoor unit fan motor 1. The fan speed is obtained from the fan speed table.

Speed of Outdoor Unit Fan Motor 2 —

Table 92 —Speed of Outdoor Unit Fan Motor 2

Name	Value
object-identifier	(AI, 10)
object-name	“ODU_AI_Fan2_Speed”
object-type	analog-input
description	“Fan 2 Speed”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 10
- Object-name : ODU_AI_Fan2_Speed

Present-Value： The current value of the variable, which is read-only. It represents the current speed of this outdoor unit fan motor 2. The fan speed is obtained from the fan speed table.

Compressor Speed —

Table 93 —Compressor Speed

Name	Value
object-identifier	(AI, 2)
object-name	“ODU_AI_Compressor_Speed”
object-type	analog-input
description	“Compressor Speed”
status-flags	(F,F,F,F)
event-state	normal

Table 93 —Compressor Speed

Name	Value
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 2
- Object-name : ODU_AI_CompressorSpeed

Present-Value： The current value of the variable, which is read-only. It represents compressor capacity requirements of this outdoor unit.

Discharge Temperature 1 —

Table 94 —Discharge Temperature 1

Name	Value
object-identifier	(AI, 3)
object-name	“ODU_AI_DischargeTemp1”
object-type	analog-input
description	“Discharge Temperature 1”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 3
- Object-name : ODU_AI_DischargeTemp1

Present-Value: The current value of the variable, which is read-only. It represents discharge temperature 1 of this outdoor unit.

(Units: temperature unit, default Celsius)

Discharge Temperature 2 —

Table 95 —Discharge Temperature 2

Name	Value
object-identifier	(AI, 4)
object-name	“ODU_AI_DischargeTemp2”
object-type	analog-input
description	“Discharge Temperature 2”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 4
- Object-name : ODU_AI_DischargeTemp2

Present-Value： The current value of the variable, which is read-only. It represents discharge temperature 2 of this outdoor unit.

(Units: temperature unit, default Celsius)

Discharge Temperature 3 —

Table 96 —Discharge Temperature 3

Name	Value
object-identifier	(AI, 5)
object-name	“ODU_AI_DischargeTemp3”
object-type	analog-input
description	“Discharge Temperature 3”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	-25
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 5
- Object-name : ODU_AI_DischargeTemp3

Present-Value: The current value of the variable, which is read-only. It represents discharge temperature 3 of this outdoor unit.

(Units: temperature unit, default Celsius)

High Pressure —

Table 97 —High Pressure

Name	Value
object-identifier (75)	(AI, 6)
object-name (77)	“ODU_AI_HighPressure”
object-type (79)	analog-input
description (28)	“High Pressure”
status-flags (111)	(F,F,F,F)
event-state (36)	normal
out-of-service (81)	F
device-type (31)	“”
present-value (85)	20
units (117)	bars
reliability (103)	no-fault-detected
resolution (106)	1
cov-increment (22)	0.1

- Object-identifier : Analog-Input 6
- Object-name : ODU_AI_High Pressure

Present-Value: The current value of the variable, which is read-only. It represents compressor discharge pressure of this outdoor unit, whose unit is bars.

Low Pressure —

Table 98 —Low Pressure

Name	Value
object-identifier	(AI, 7)
object-name	“ODU_AI_SuctionPressure”
object-type	analog-input
description	“Suction Pressure”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	8
units	bars
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 7
- Object-name : ODU_AI_LowPressure

Present-Value： The current value of the variable, which is read-only. It represents compressor suction pressure of this outdoor unit, whose unit is bars.

Outdoor Unit Fault Codes —

Table 99 —Outdoor Unit Fault Codes

Name	Value
object-identifier	(AI, 8)
object-name	“ODU_AI_MalfunctionCode”
object-type	analog-input
description	“Malfunction Code”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	0
units	degrees-Celsius
reliability	no-fault-detected
resolution	1
cov-increment	0.1

- Object-identifier : Analog-Input 8
- Object-name : ODU_AI_MalfunctionCode

Present-Value: The current value of the variable, which is read-only. It represents default code of this outdoor unit. The following is default code:

Table 100 —Default Codes

1	2	3	4	5	6	7	8	9	10
E0	E1	E2	E3	E4	E5	E6	E7	E8	E9
11	12	13	14	15	16	17	18	19	20
EA	EB	EC	ED	EE	EF	EH	EL	EP	EU
21	22	23	24	25	26	27	28	29	30
C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
31	32	33	34	35	36	37	38	39	40
CA	CB	CC	CD	CE	CF	CH	CL	CP	CU
41	42	43	44	45	46	47	48	49	50
F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
51	52	53	54	55	56	57	58	59	60
FA	FB	FC	FD	FE	FF	FH	FL	FP	FU
61	62	63	64	65	66	67	68	69	70
H0	H1	H2	H3	H4	H5	H6	H7	H8	H9
71	72	73	74	75	76	77	78	79	80
HA	HB	HC	HD	HE	HF	HH	HL	HP	HU
81	82	83	84	85	86	87	88	89	90
P0	P1	P2	P3	P4	P5	P6	P7	P8	P9
91	92	93	94	95	96	97	98	99	100
PA	PB	PC	PD	PE	PF	PH	PL	PP	PU
101	102	103	104	105	106	107	108	109	110
L0	L1	L2	L3	L4	L5	L6	L7	L8	L9
111	112	113	114	115	116	117	118	119	120
LA	LB	LC	LD	LE	LF	LH	LL	LP	LU
121	122	123	124	125	126	127	128	129	130
U0	U1	U2	U3	U4	U5	U6	U7	U8	U9
131	132	133	134	135	136	137	138	139	140
UA	UB	UC	UD	UE	UF	UH	UL	UP	UU

- 121 ~ 140 fault codes are only used for debugging functions.
- 141 ~ 240 are reserved faults, and 241 ~ 255 are reserved bytes.

Refer to the service manual for the meaning of specific fault codes.

Outdoor Fault Alarm Status —

Table 101 —Outdoor Fault Alarm Status

Name	Value
object-identifier	(BI, 2)
object-name	“ODU_BI_Alarm”
object-type	binary-input
description	“Alarm Indication”
status-flags	(F,F,F,F)
event-state	normal
out-of-service	F
device-type	“”
present-value	inactive
inactive-text	“off”
active-text	“on”
polarity	normal
reliability	no-fault-detected

- Object-identifier : Binary-Input 2
- Object-name : ODU_BI_Alarm

Present-Value： The current value of the variable, which is read-only. It represents fault alarm status of this outdoor unit.

Table 102 —Present Value

Status	Value
fault	0
no fault	1

COV —

COV FUNCTION DESCRIPTION — The Interface provides two COV services:

Confirm Type

When the BACnet host computer subscribes to a variable's Confirm COV service, if the current value of this variable changes, the Interface will send notification to the host computer, and the host computer will also send an ACK to the Interface).

UnConfirm Type

When the BACnet host computer subscribes to a variable UnConfirm COV service, if the current value of this variable changes, the Interface will send a notification to the host computer, and the host computer will not reply.

The COV service that the host computer subscribes has a limit to its Lifetime. The time value (Limit) is set up by host computer.

WEB INTERFACE FUNCTIONS

Renaming Units — By default, units will be tagged with their XYE bus number and address. For example, in the following figure, all 3 units are connected to XYE bus 0. The two indoor units are address #2 and #3, and the outdoor unit is address #96.

Fig. 19 —Tagging Units with Bus Number and Address

Double-click the unit's icon to re-name the unit as desired:

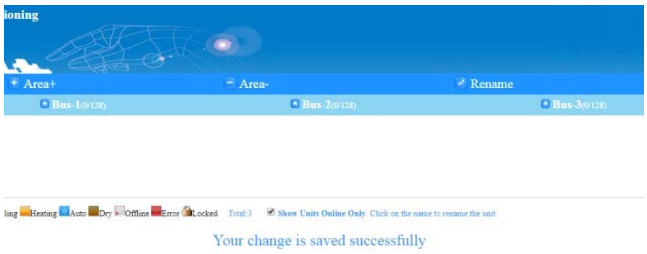


Fig. 20 —Rename Unit

Note: This feature is helpful when organizing multiple refrigerant systems during commissioning. Take note of which indoor units are connected to which outdoor unit / refrigerant system as they are brought online. Due to the number of units supported by the Interface, indoor unit addresses can be duplicated across multiple refrigerant systems. So consider a naming convention that identifies indoor units per system.

Individual Unit Control — After clicking on a single indoor unit icon, the following menu will be displayed allowing the selection of mode, fan speed, setpoint, and lock settings:

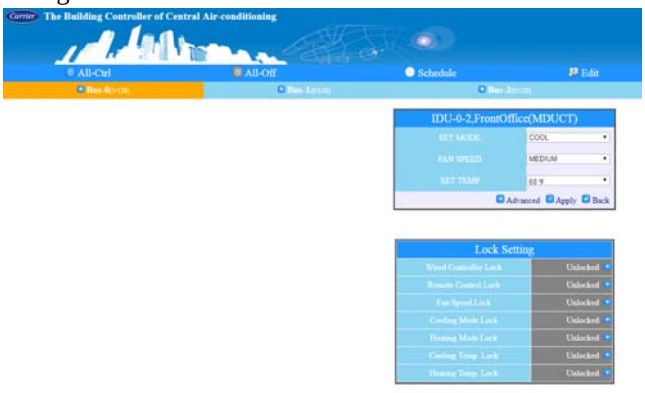


Fig. 21 —Select Mode, Fan Speed, Setpoint, and Lock

Note: Lock commands are configured as binary points. A value of 0 means the point is unlocked. Setting the value to 1 locks the point. Click "OK" to confirm changes to lock settings.

Fig. 22 —Confirm Lock Setting

Click "Advanced" to view additional information on the unit:

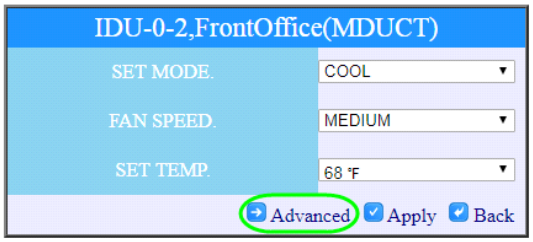


Fig. 23 —Click Advanced

Fig. 24 —View Additional Information

Clicking "Refrigerant System" will display additional information on the associated system:

Fig. 25 —Additional Information on Refrigerant System

Areas — By default, each of the 4 XYE buses show up in the Area Bar. After clicking one of these areas, its associated units' icons show up in the Equipment Status Field at the bottom of the pane. To add a custom area, click the Edit Icon, and then "Area +". Enter a name for the area, and then select IDUs to be associated with the area by clicking their addresses under XYE Bus:

Fig. 26 —Area

Fig. 27 —Complete Adding or Editing Area

Click the "Done" icon when finished adding or editing areas.

All-Ctrl — This feature can be used to send a batch command to all units under a given area or bus. Select the area or bus in the Area Bar, and then click the "All-Ctrl" icon. Select desired mode, fan speed, and setpoint temperature. Click "Apply" to send this batch command to all units in the selected Bus or Area.

Fig. 28 —All-Ctrl

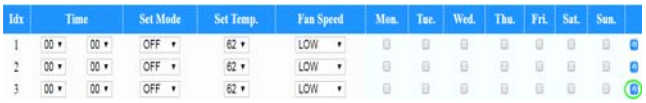
All-Off — Similar to All-Ctrl, the All-Off command can be sent to all units under a selected Bus or Area:

Fig. 29 —All-Off

Schedule — To create a schedule for an Area, click the Area, and then the Schedule icon. Up to 10 events can be scheduled. Select time, mode, setpoint, fan speed, and days of the week for the event. Click "Enable this schedule," and then click "Save" to complete the schedule:

Fig. 30 —Schedule

Tip: The icon can be used to check the week day check boxes, or to invert the checked/un-checked selection for an event:



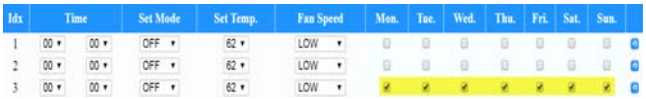


Fig. 31 —Select All

Fig. 32 —Invert

User Accounts — To create a new User Account:

1. click the icon.
2. Click "Add"
3. Enter a name for the user
4. Click "OK"

Fig. 33 —Add User Account

The following message confirms the addition of the user account, and that the initial password for this user is "123456." After first log-in, the system will prompt this user to change the password.

Fig. 34 —Confirmation of New User Account

1. Click "Edit"
2. Select the check boxes of the units that this user can control.
3. Click "OK"

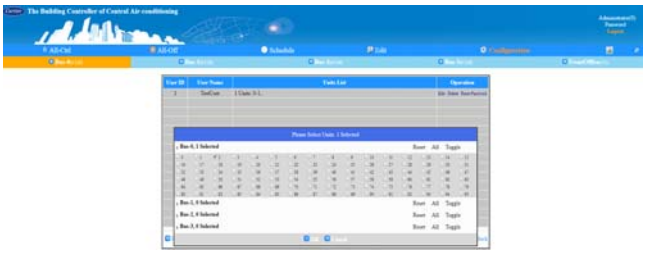


Fig. 35 —Selecting Units New User Can Control

Once this user logs in and changes the password, the user will only be able to view/edit the selected unit(s), which will show up in the Area Bar under “My Units”:

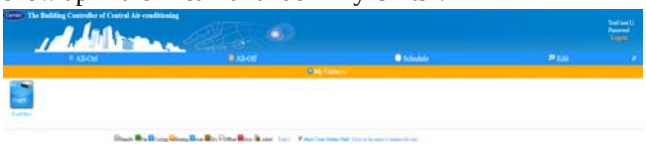


Fig. 36 —My Units Screen

Note: These created User Accounts are considered “General User” accounts. They have limited permissions compared to the Administrator Account. Refer to the following table.

Table 103 —Administrator vs. General User

Administrator	General User
Can change system settings under “Configuration”	Cannot change system settings
Can monitor all connected units	Can only monitor designated units
Can create/assign areas	Can only view their assigned area
Manages user accounts	Cannot manage user accounts

Password — Click the “Password” icon in the top right to reset passwords as needed:

Fig. 37 —Reset the Password

Restore Factory Settings — To reset the interface to its initial factory settings:

1. Click the  icon.
2. Click “Restore Factory Setting”
3. Click “OK” three times in the pop-up menu to confirm this reset.

Fig. 38 —Reset Factory Settings

NOTES:

Restoring to factory settings deletes everything the user has done:

- Resets the IP address of BACnet to 192.168.1.8.
- Deletes all user accounts.
- Resets the Admin password to 123456.
- Resets all ports’ operating mode to the master polling mode.
- Resets the BACnet network number to 19 and the UDP port number to 47808.
- Deletes the local settings, device naming, and scheduled events.