

VRF System Controller

UC722

User Guide

Contents

Chapter 1. Preface..... 4

Chapter 2. Product Introduction..... 5

Overview..... 5

Hardware Introduction..... 6

Chapter 3. Getting Started..... 10

Chapter 4. Operation Guide..... 19

Device Information..... 19

Device Settings..... 20

LAN Settings..... 20

WAN Settings..... 21

OEM Server Setting..... 22

Custom Server Setting..... 23

Calibrate the Device Time..... 24

Modbus-RTU Setting..... 25

AC Channel Setting..... 25

Reset the Device..... 26

Terminal Resistor Setting..... 27

AC Manage..... 28

Channel Information..... 30

Chapter 5. JSON Protocol Reference..... 32

Controller Initialization Interface..... 32

Indoor Unit Interface..... 39

Status Management..... 40

Extended Function Interfaces..... 49

Outdoor Unit Interface..... 75

Branch Selector Interface..... 78

Chapter 6. Modbus Protocol Reference..... 82

Master Information....82
Module A: Channel Info Block....85
Module B: Indoor Unit Parameter Block....89
Module C: Single-Channel Group Control Block....91
Module D: All-Channel Group Control....93
System Settings....95
Chapter 7. Appendix....97
API Inventory....97
Default Parameter Values....99
ErrorCode....101
AC Brand Codes....102

Chapter 1. Preface

Copyright Statement

This guide may not be reproduced in any form or by any means to create any derivative such as translation, transformation, or adaptation without the prior written permission of Xiamen Milesight IoT Co., Ltd (Hereinafter referred to as Milesight).

Milesight reserves the right to change this guide and the specifications without prior notice. The latest specifications and user documentation for all Milesight products are available on our official website http://www.milesight.com

Safety Instructions

These instructions are provided to ensure correct product operation and to prevent personal injury or property damage. Milesight shall not be held liable for any loss or damage arising from failure to comply with the instructions in this guide.

CAUTION:

Injury or equipment damage may be caused if any of these cautions are neglected.

- Do not place the device close to objects with naked flames.
- Do not place the device where the temperature is below/above the operating range.
- Installation must be performed by qualified professionals.
- All electrical work must be carried out by licensed electricians in accordance with local regulations.
- Ensure that the power supplies to the air conditioning system and controller are disconnected before wiring.
- Do not disassemble, modify, or repair this product yourself.
- The device must never be subjected to shocks or impacts.
- Do not connect communication terminals to high-voltage terminals.

Revision History

Release Date	Version	Revision Content
August 31, 2026	V1.0	Initial version

Chapter 2. Product Introduction

This chapter describes basic product information.

Overview

UC722 VRF System Controller is a centralized control device designed for VRF air conditioning systems. It enables unified management and monitoring of multi-brand HVAC systems in smart buildings, commercial facilities, and energy-saving applications. Equipped with 4 HVAC channels, UC722 can connect to up to 4 independent VRF systems, with each channel supporting polarity-free communication wiring and flexible deployment across different VRF brands. The controller features a built-in web GUI for configuration and supports Modbus RTU, Modbus TCP, and JSON protocols for integration with various control systems.

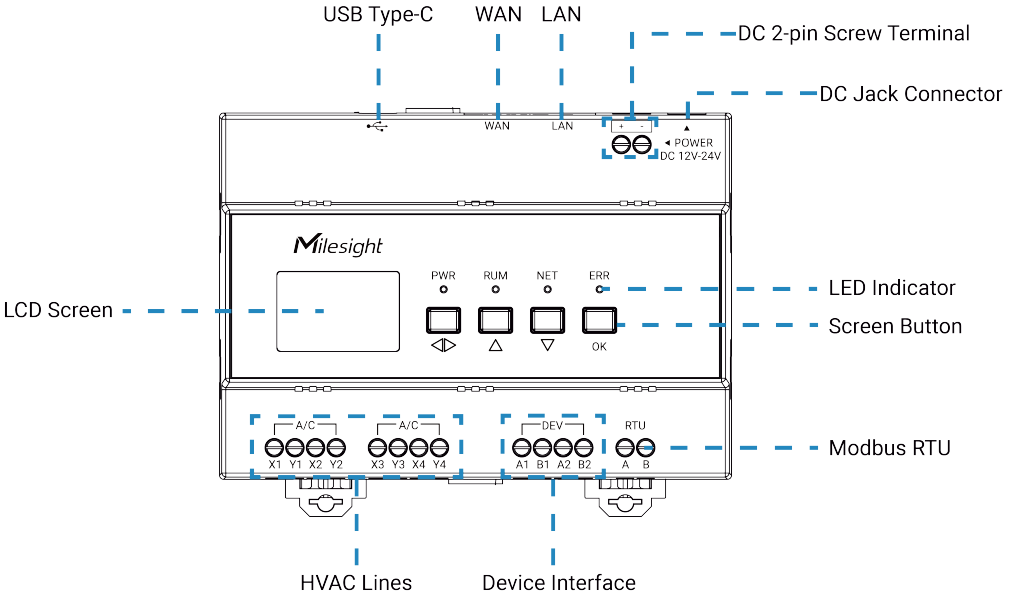
It can be deployed in applications such as buildings, campuses, commercial complexes, and centralized HVAC management scenarios.

The device has the following features:

- Compatible with mainstream VRF air conditioning brand
- 4-channel for the same/different brands VRF systems
- RS485 or Ethernet Ports for system control and integration
- LCD display for real-time controller status and information
- Supports multiple scheduled tasks to implement energy-saving strategies
- Support Firmware Update Over the Air (FUOTA) feature

Hardware Introduction

Hardware Overview



Part	Description
WAN	Used to connect to Ethernet, supports remote servers accessing the controller via Modbus TCP or JSON.
LAN	Used to connect to local network, supports local servers accessing the controller via Modbus TCP or JSON.
DC Jack Connector	The interface for powering the device.
DC 2-pin Screw Terminal	
LED Indicator	Indicates the device operating status. For more details,refer to LED Patterns.
LCD Screen	Displays the device's basic information, interface status, and operational status. For more details, refer to Screen Description.
Screen Button	Used for status viewing and page navigation. For more details, refer to Screen Button Description.
HVAC Channel	Used to connect to the outdoor master unit of the VRF system. The connection is non-polarized.
Device Interface	Used to connect to the electricity meter (Reserved).
RTU Interface	External output interface of the controller based on the Modbus RTU protocol.

Part	Description
USB Type-C (Reserved)	Reserved for debugging.

LED Patterns

LED	Status	Description
PWR	Off	Device is not powered or is faulty
	On	Device is powered normally
RUN	Blinks	System is working well
	Off/On	System malfunctions
NET	Blinks	Network is connected
	Off	Network is not connected
ERR	Off	No air conditioning fault
	On	Air conditioning fault

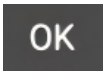
Screen Description

After the device is powered on, the screen will show all the detected units and their statuses.

Page	Description
Host Information	1. Device Model 2. Device SN 3. Firmware Version 4. System Time 5. License Status 6. Storage Space
Network Setting	1. IP Address 2. Subnet Mask 3. Gateway Address 4. DHCP

Page	Description
AC Data Overview	1. Total Number of Systems 2. Total Number of Indoor Units 3. AC Channels
	1. Enable Status 2. Operating Status 3. AC Brand 4. Number of Systems 5. Number of Indoor Units 6. Number of Faulty Indoor Units 7. Operating Hours 8. Firmware Version (Protocol)
Meter Information (Reserved)	1. Number of Connections 2. Meter Status 3. Meter Address 4. Meter Reading
Bluetooth (Reserved)	1. Bluetooth ID 2. Bluetooth Switch 3. Connection Status

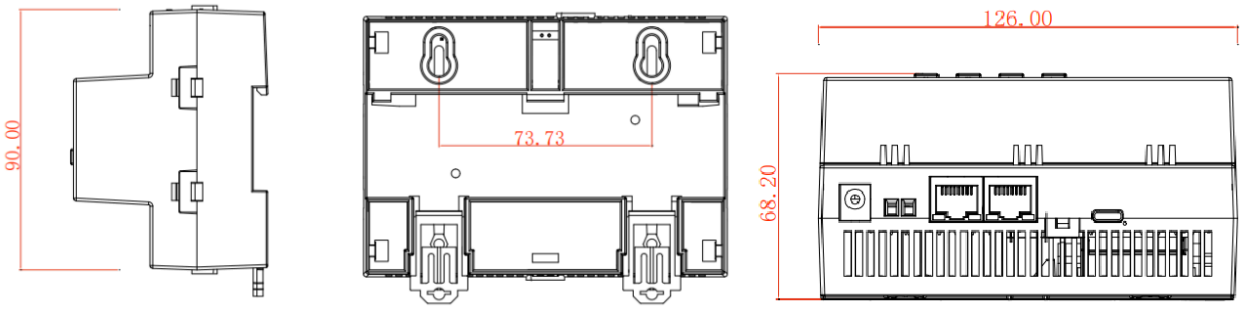
Screen Button Description

Icon	Description
	Navigates to the next menu level.
	Switches to the previous/next page.
	Switches the items in the page.

Icon	Description
▽	

Dimensions

The following figure shows the device dimensions (unit: mm).



Chapter 3. Getting Started

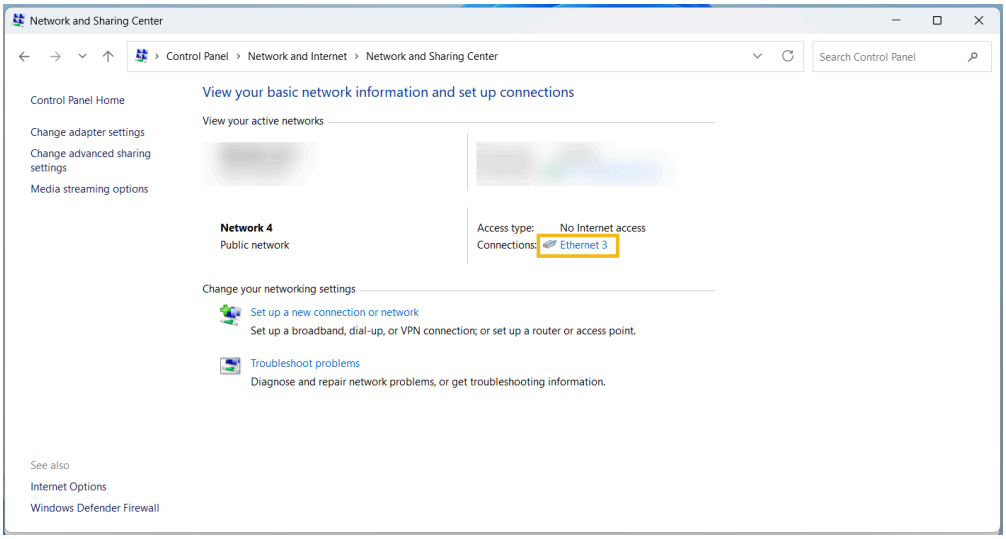
Step 1. Log in to Controller Web GUI

The device can be configured through the web GUI accessible over Ethernet port.

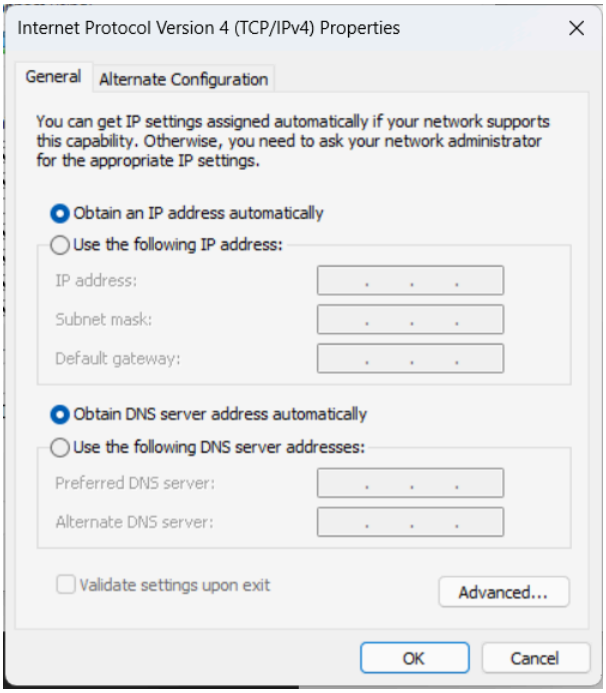
The default IP address of the device is **192.168.2.251**.

1. Connect the **LAN** port of the device to your computer using a network cable.
2. Configure the IP address of your computer, ensuring it is on the same subnet as the device. Take Windows 10 as an example:

    a. Navigate to **Control Panel > Network and Internet > Network and Sharing Center** and select “Ethernet” (It may have a different name).

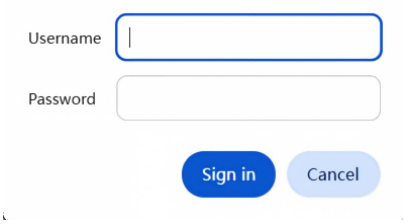


    b. Navigate to **Properties > Internet Protocol Version 4 (TCP/IPv4) Properties**, then select **Use the following IP address** to manually assign a static IP address, such as 192.168.2.201/ 255.255.255.0.



c. Open a web browser (Chrome is recommended) and enter the static IP address of the device to access the web GUI.

3. Log in to the web GUI using the default credentials.



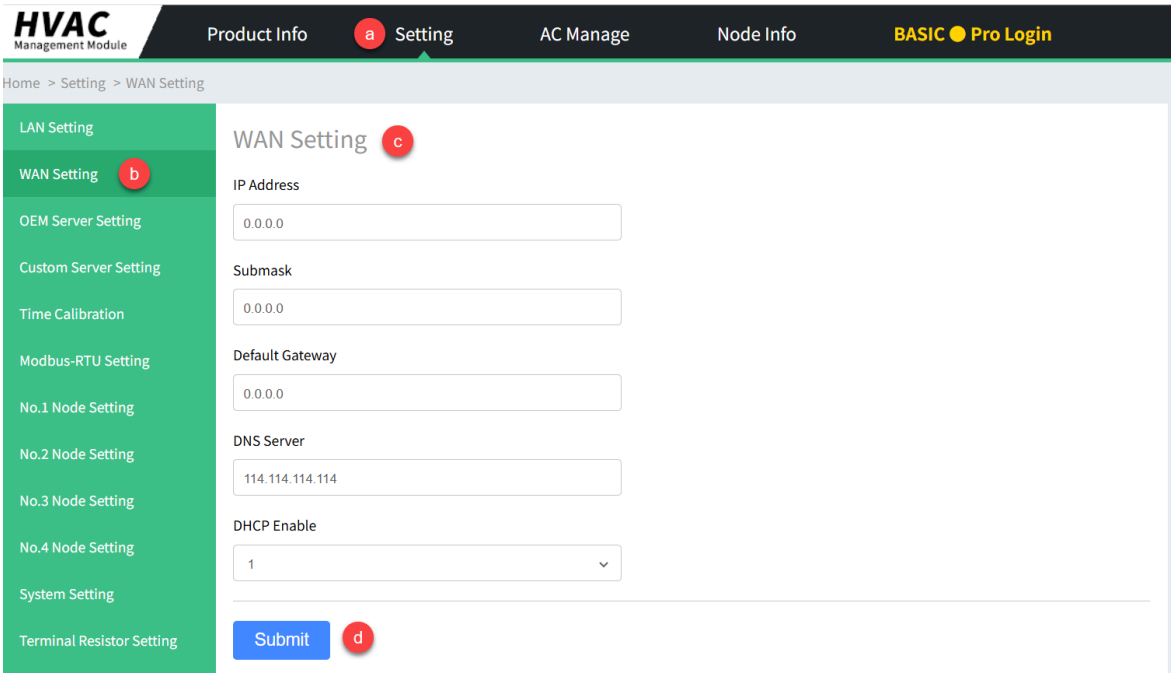
Item	Default
Username	admin
Password	admin56789*

Step 2. Configure the WAN settings

It is necessary to configure the WAN to enable devices to access the network.

1. Click **Setting > WAN Setting** to access the configuration page.
2. Enter the related parameters and click **Submit** to save configuration.
3. Connect the **WAN port** to an active Ethernet cable with network access.

4. On the Device LCD screen, select the **Network Setting** page and enter **WAN Setting** page to verify that the displayed IP address matches the configured value.

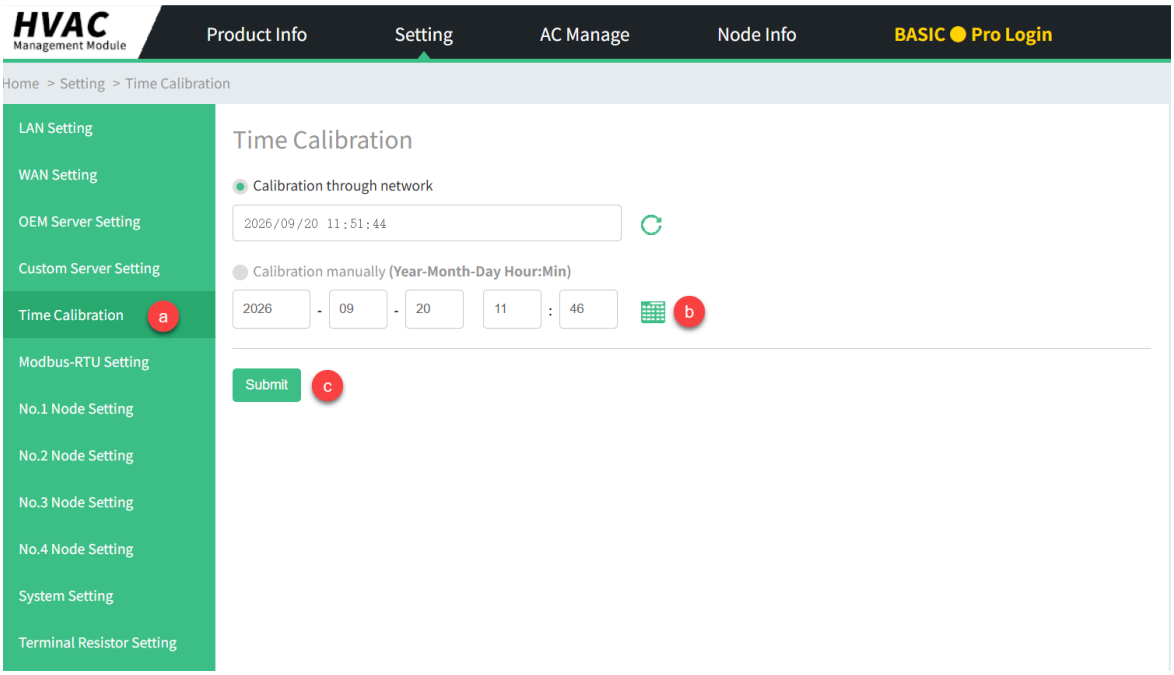


Step 3. Calibrate the Device Time

To ensure data accuracy, it is recommended to manually calibrate the time after logging in.

1. Enter the **Time Calibration** interface under the **Setting** menu.
2. Select **Calibration Manually**, then enter the time manually.

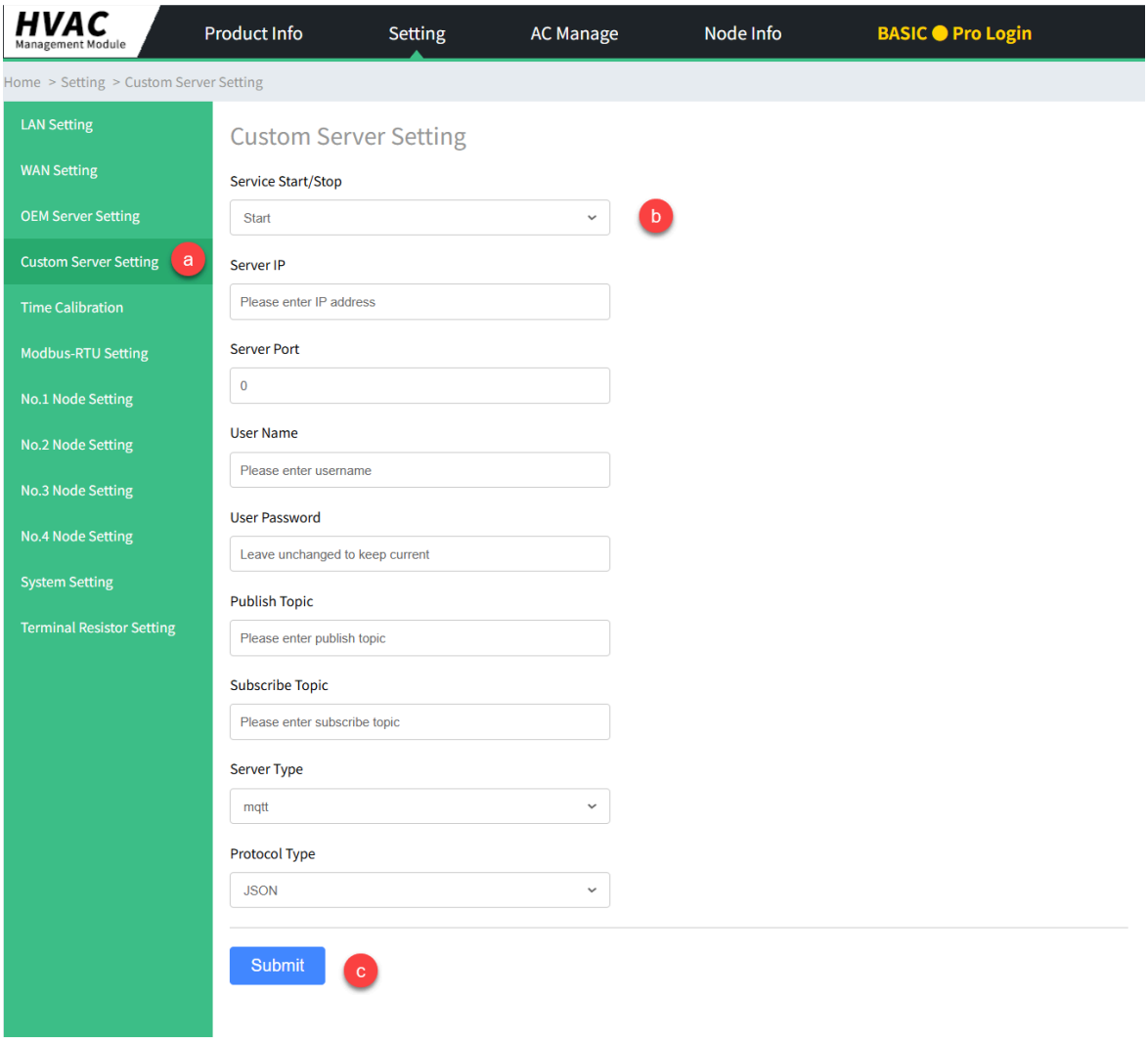
3. Click **Submit** to apply the changes.



Step 4. Configure the Customer Server Setting

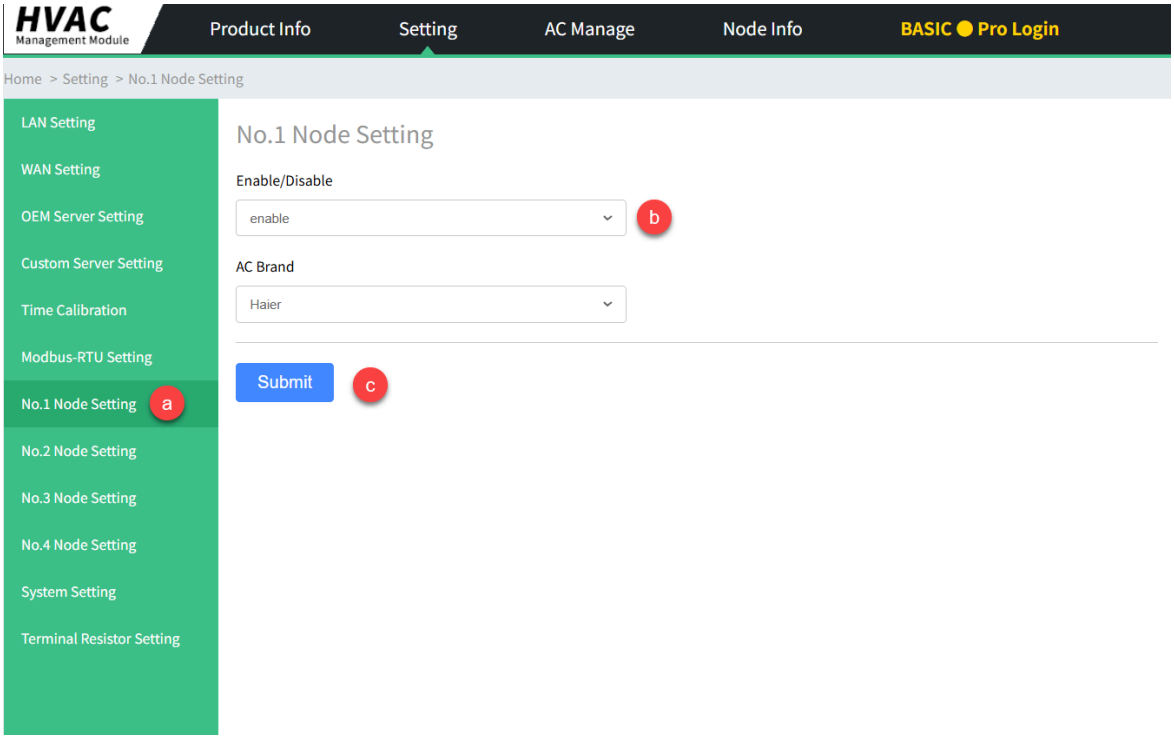
1. Navigate to the **Custom Server Setting** interface under the **Setting** menu.
2. Enter the relevant configuration details provided by the server.

3. After configuration is complete, click **Submit**.



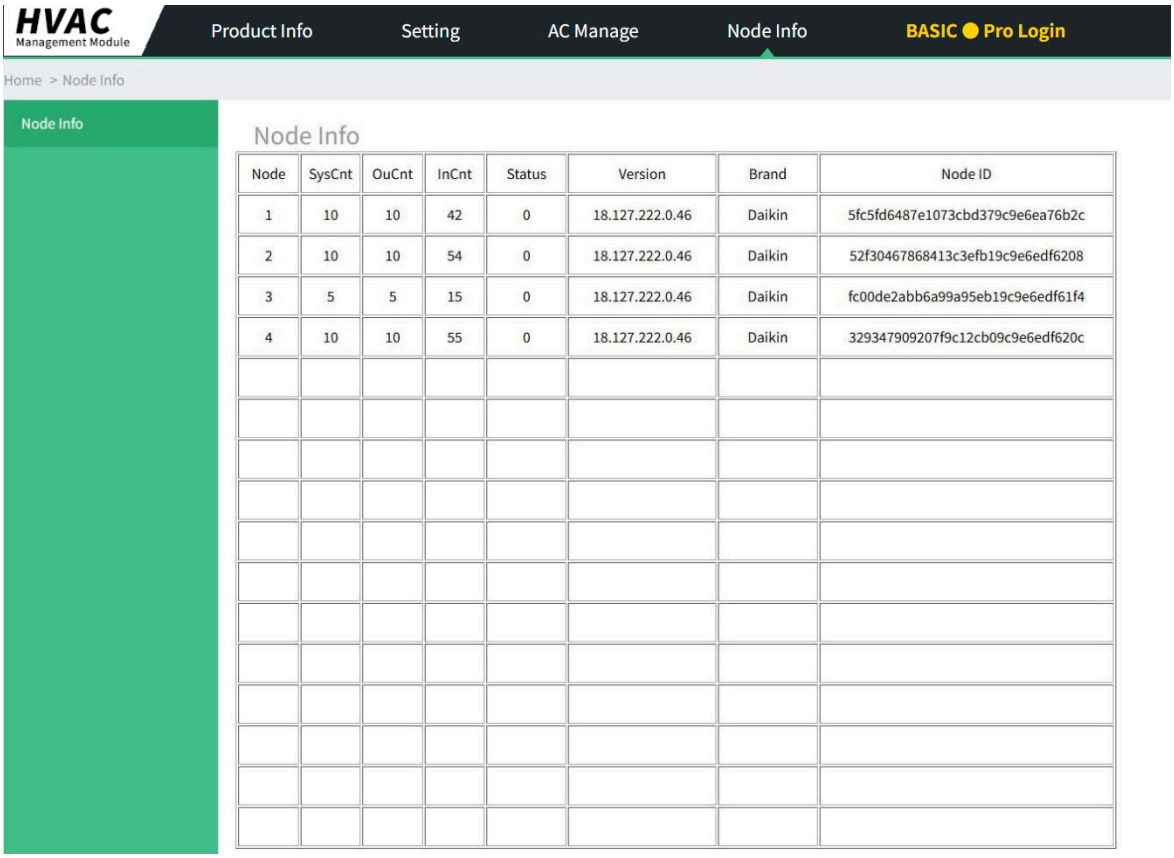
Step 5. Set the Air Conditioner Brand

1. Click **Setting > No.x Node Setting** to access the configuration page.
2. Enable the channel.
3. In the **AC Brand** field, select the actual brand of the air conditioner.
4. After confirming the selection, click **Submit** to apply the change.



5. Go to the **Node Info** interface to check if the brand under corresponding channel has been successfully changed.
6. Restore power to the air conditioner's outdoor unit.

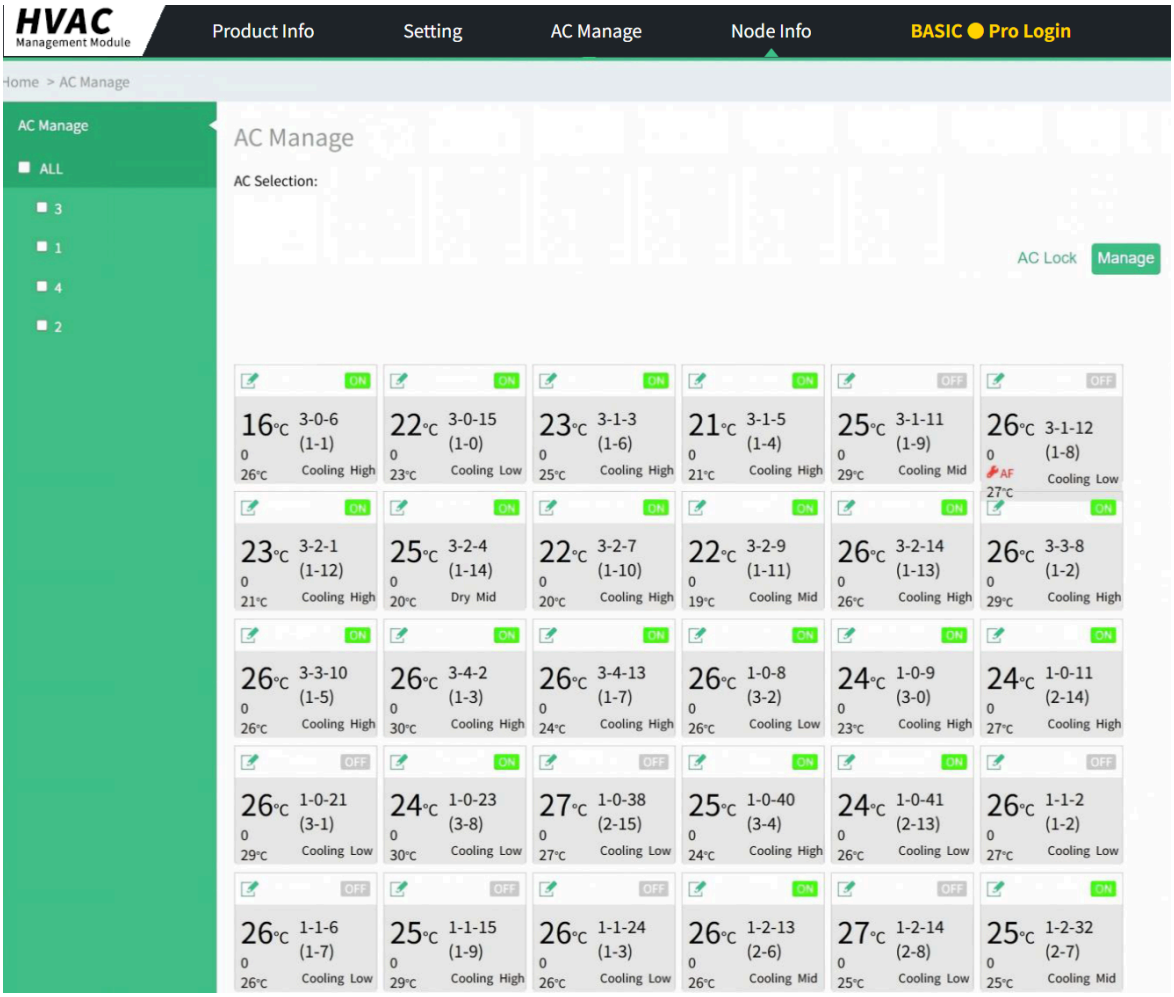
7. Wait for the device to automatically search for the indoor air conditioning units



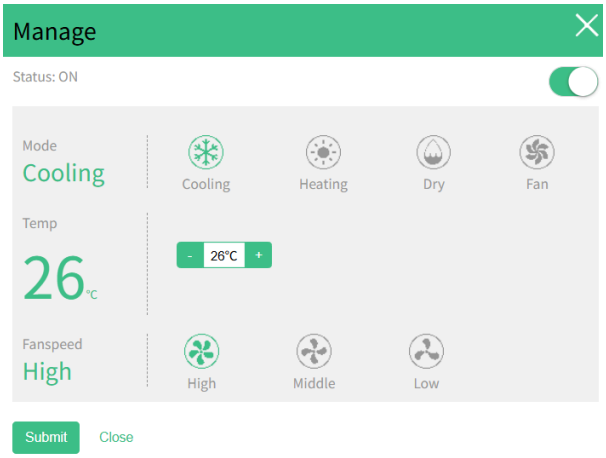
Node	SysCnt	OuCnt	InCnt	Status	Version	Brand	Node ID
1	10	10	42	0	18.127.222.0.46	Daikin	5fc5fd6487e1073cbd379c9e6ea76b2c
2	10	10	54	0	18.127.222.0.46	Daikin	52f30467868413c3efb19c9e6edf6208
3	5	5	15	0	18.127.222.0.46	Daikin	fc00de2abb6a99a95eb19c9e6edf61f4
4	10	10	55	0	18.127.222.0.46	Daikin	329347909207f9c12cb09c9e6edf620c

Step 6. Air Conditioner Management - Control the Air Conditioners

1. Enter the **AC Manage** interface to view the air conditioners that have been discovered.



2. Click on the corresponding air conditioner cards to select multiple units. Selected air conditioners will be displayed in the **AC Selection** bar at the top. You can also directly select all air conditioners under a single channel by using options 1, 2, 3, or 4 in the left-side **AC Manage** panel.
3. Click **Manage**. In the new interface that appears, configure the desired settings. After completing your selections, click **Submit**.



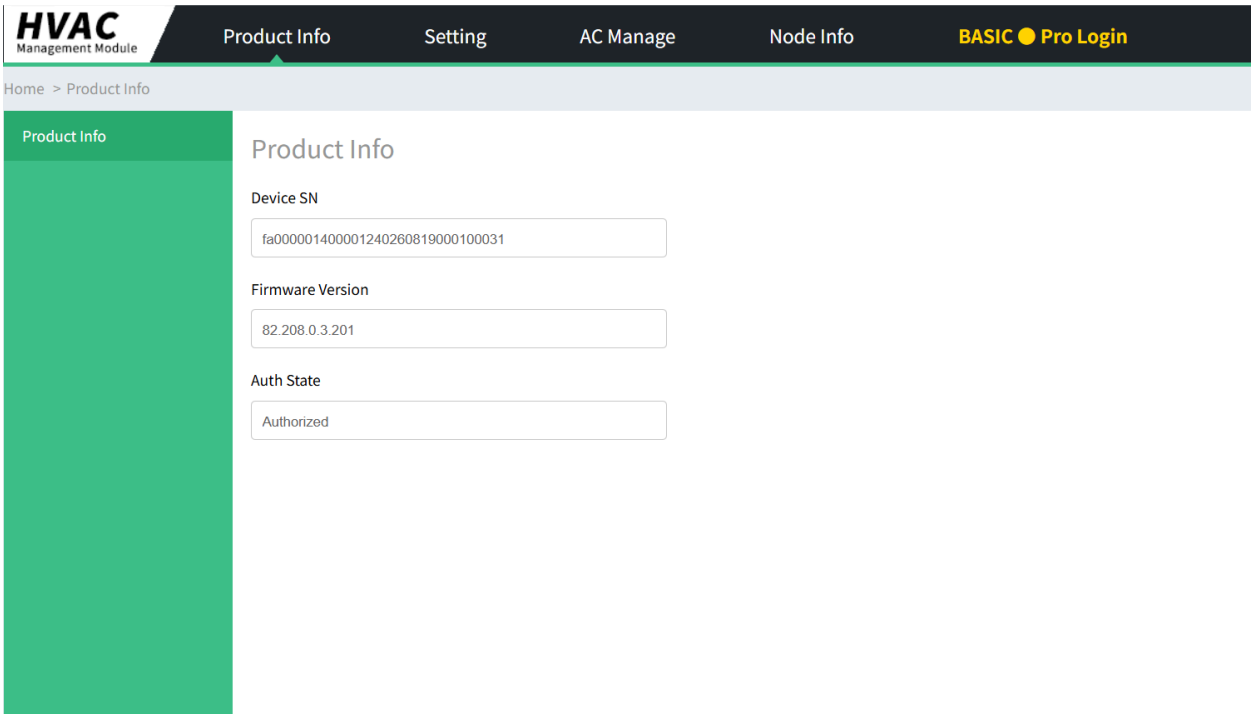
4. After a control command is successfully sent, wait briefly for the air conditioner card information to sync and update.

Step 7. AC Location Record

1. Physically change the temperature setting on an indoor unit on site, then look for which device in the management interface reflects the change, and make a note of the association between that the address of indoor unit and its physical location.
2. Repeat the above steps until the spatial correspondence (mapping) of all air-conditioning units has been confirmed.

Chapter 4. Operation Guide

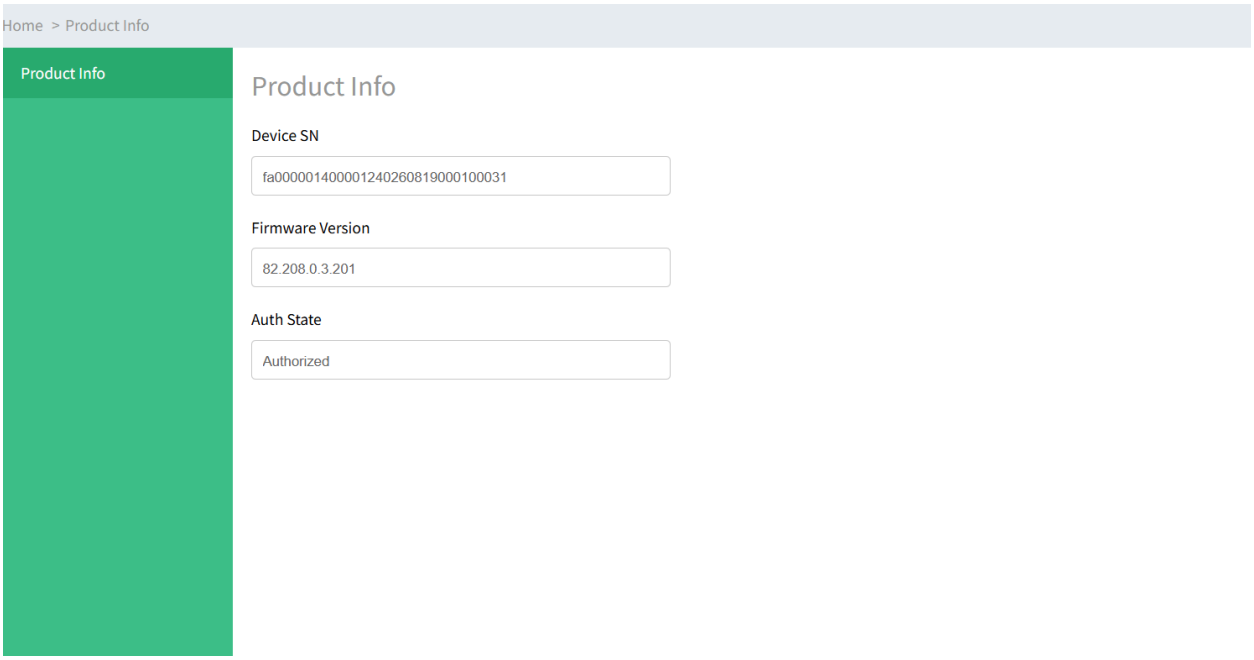
After you log in successfully, the following information is displayed.



Page	Description
Product Info	Display the controller basic information.
Setting	Configure server settings, air conditioner brands, and other parameters.
AC Manage	Manage the connected indoor units.
Node info	Displays air conditioner information for each channel.
Por Login	Reserved.

Device Information

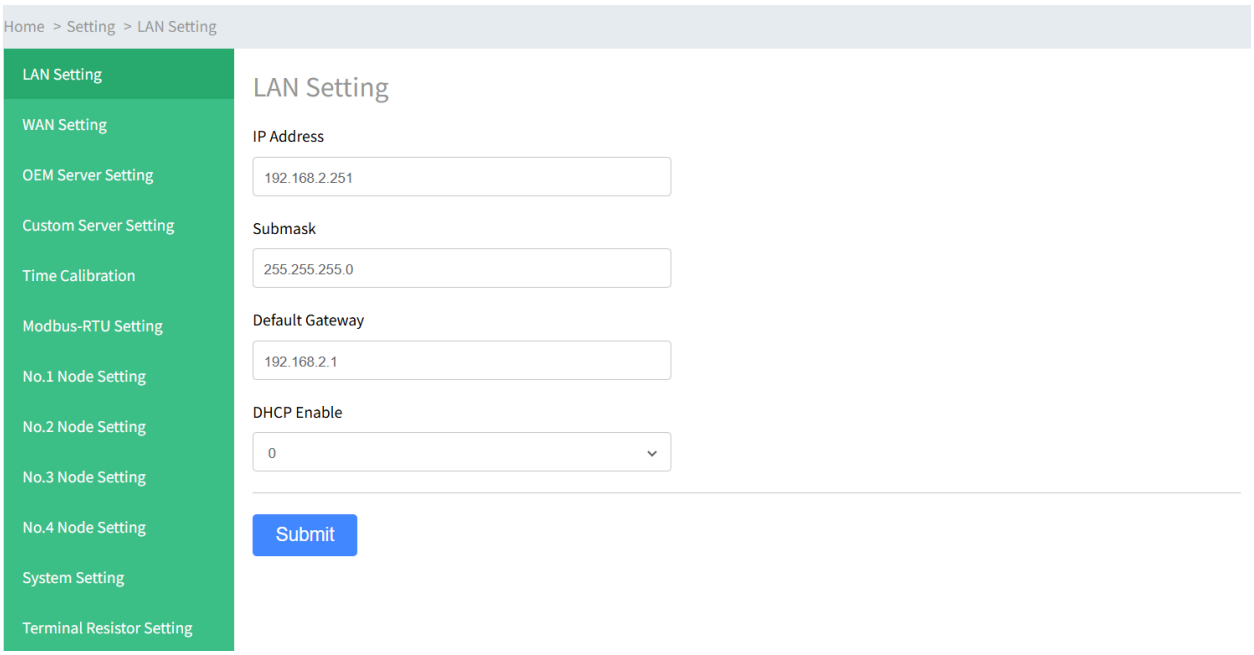
On the **Product Information** page, you can check the device hardware information,which includes device sn, firmware version and the auth state.



Device Settings

LAN Settings

On this page, you can view and configure the LAN port settings of the device. The values shown in the figure are the default settings.

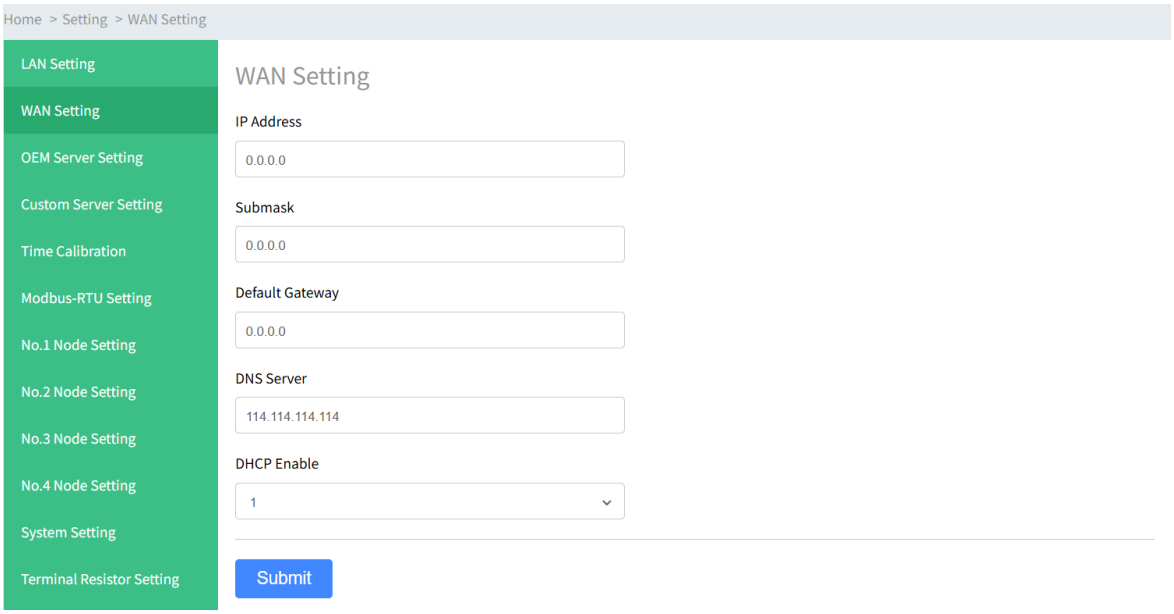


WAN Settings

This section describes how to configure the WAN setting.

Steps:

1. Click **Setting > WAN Setting** to access the configuration page.



2. Enter the related parameters and click **Submit** to save configuration.

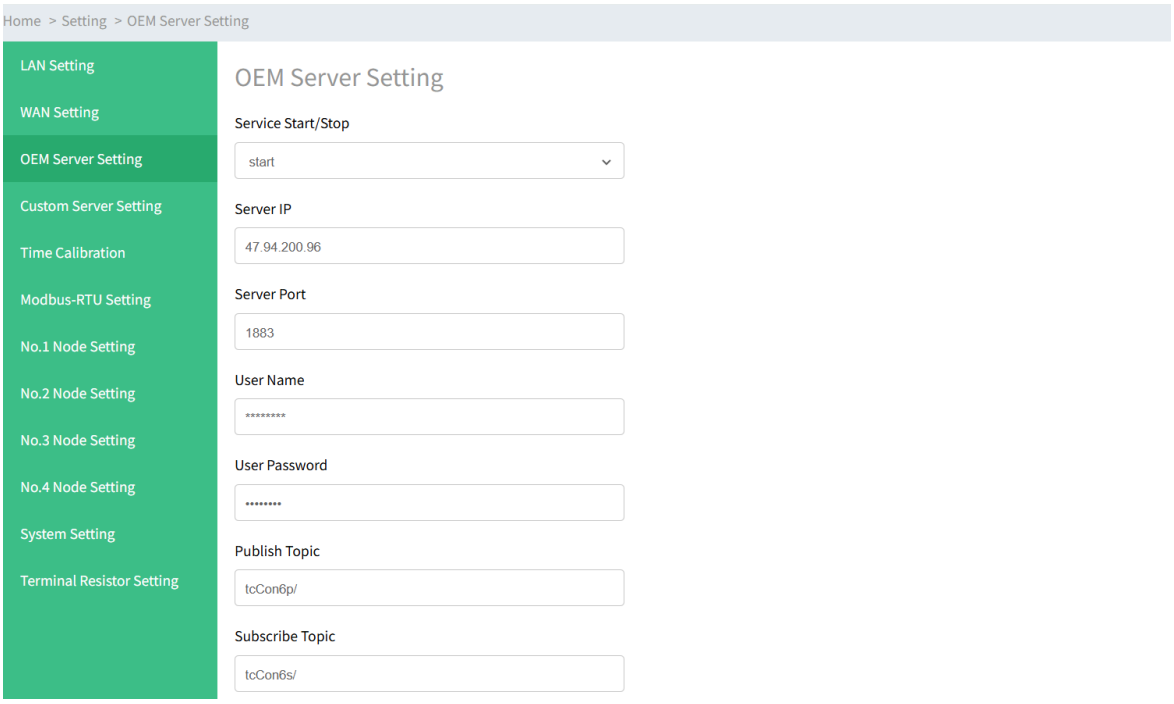
Parameter	Description
IP Address	The IPv4 address of this interface. The address must be in the same subnet as the gateway address
Submask	The IPv4 netmask of this interface.
Default Gateway	The IPv4 gateway address of this WAN port.
DNS Server	The DNS server address.
DHCP Enable	Enable the DHCP server to assign IP address to connected client devices auto matically. If disabled, the client devices are required to configure their own IP ad dresses.

OEM Server Setting

This section describes how to configure the OEM server to enable remote diagnostics and support for customers.

Steps:

1. Navigate to the **OEM Server Setting** interface under the **Setting** menu.



2. Configure the relevant OEM server parameters.

parameters	Description
Service Start/Stop	Enable or disable the server.
Server IP	IP address of the server.
Server Port	Communication port of the server.
User Name	User name used for authentication.
User Password	User password used for authentication.
Publish Topic	Topic name of the data type used for publishing.
Subscribe Topic	Topic name of the data type used for subscribing.
Server Type	**Option**: TCP or MQTT

parameters	Description
Protocol Type	**Option**: JSON or Modbus

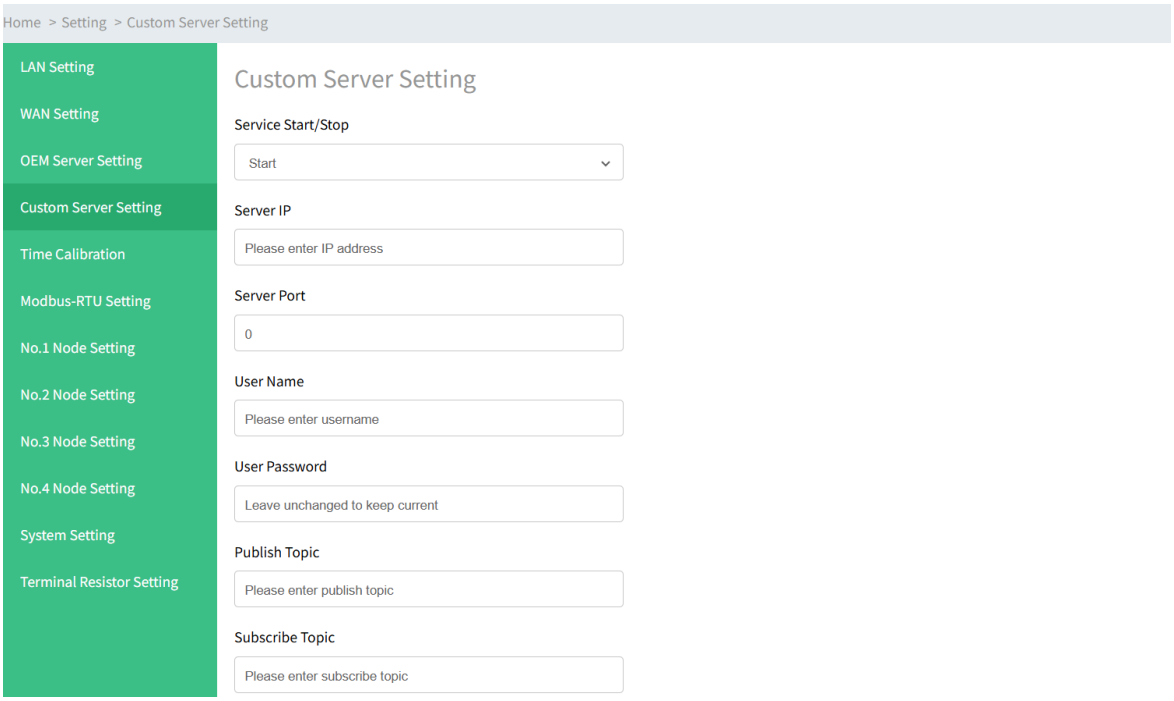
3. After configuration is complete, click **Submit**.

Custom Server Setting

This section describes how to configure the customer server to remotely retrieve air conditioner status and control the air conditioners.

Steps:

1. Got to the **Custom Server Setting** interface under the **Setting** menu.



2. Configure the relevant parameters.

parameters	Description
Service Start/Stop	Enable or disable the server.
Server IP	IP address of the server.
Server Port	Communication port of the server.
User Name	User name used for authentication.

parameters	Description
User Password	User password used for authentication.
Publish Topic	Topic name of the data type used for publishing.
Subscribe Topic	Topic name of the data type used for subscribing.
Server Type	**Option**: TCP or MQTT
Protocol Type	**Option**: JSON or Modbus

3. After configuration is complete, click **Submit**.

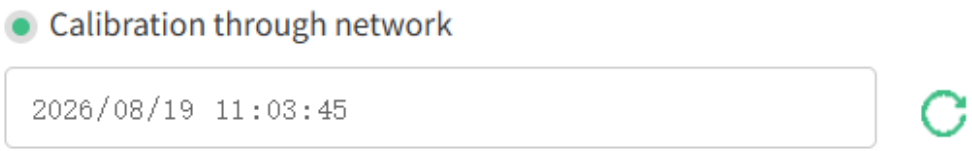
Calibrate the Device Time

This section describes how to calibrate the device time.

Calibration Through Network

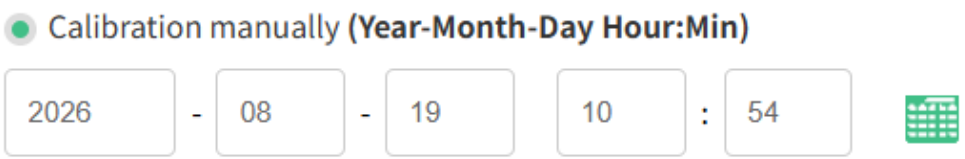
Prerequisite: The device is connected to the server.

1. Enter the **Time Calibration** interface under the **Setting** menu.
2. Select the **Calibration through network**.
3. Click  to synchronize the time.
4. Click **Submit** to apply the setting.



Calibration Manually

1. Enter the **Time Calibration** interface under the **Setting** menu.
2. Select the **Calibration manually**.
3. Click **Submit** to apply the setting.

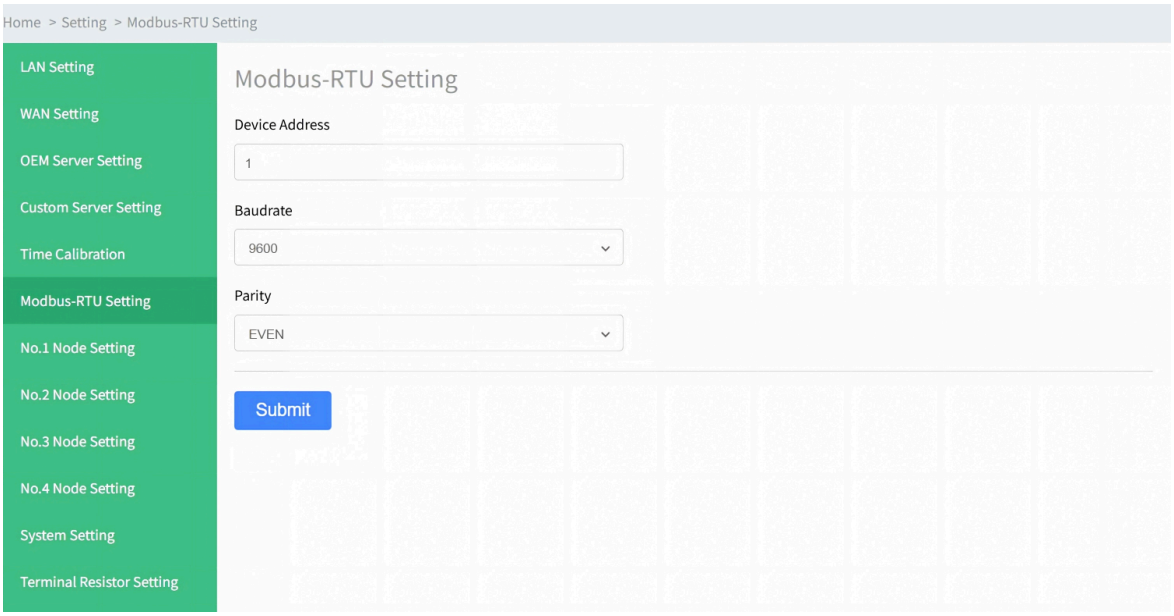


Modbus-RTU Setting

This section describes how to configure Modbus RTU for the device.

Steps:

1. Enter the **Modbus-RTU Setting** interface under the **Setting** menu.



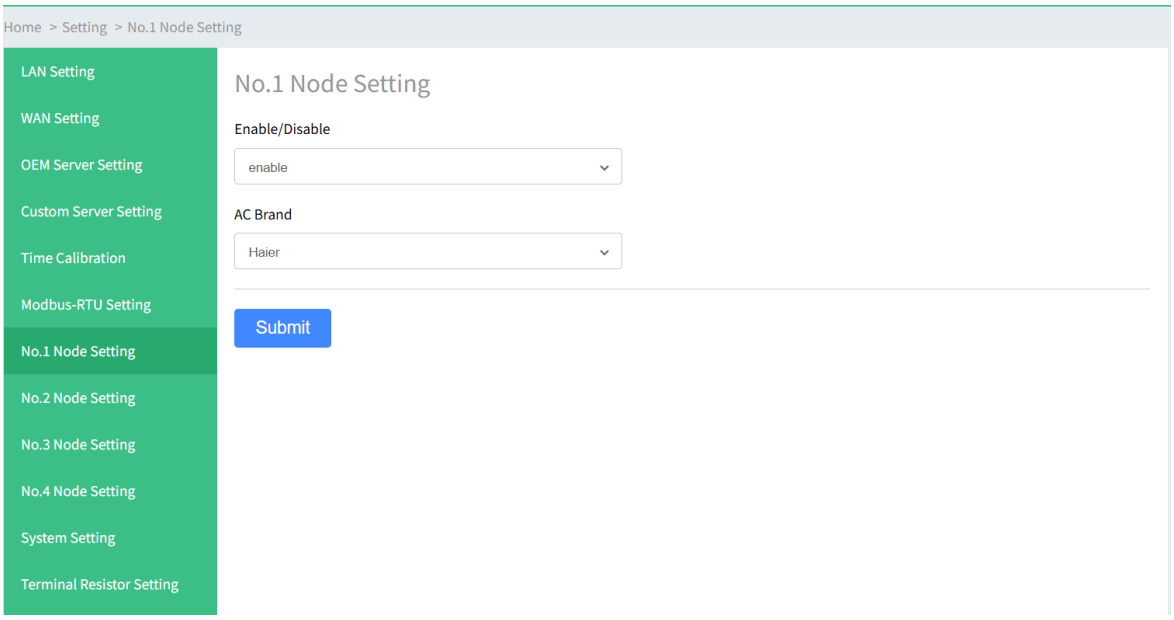
2. Enter the **Device Address**.
3. Configure the **Baud Rate** and **Parity**.
4. Click **Submit** to apply the changes.

AC Channel Setting

This section describes how to set the channel configuration.

Steps:

1. Click **Setting > No.x Node Setting** to access the configuration page.



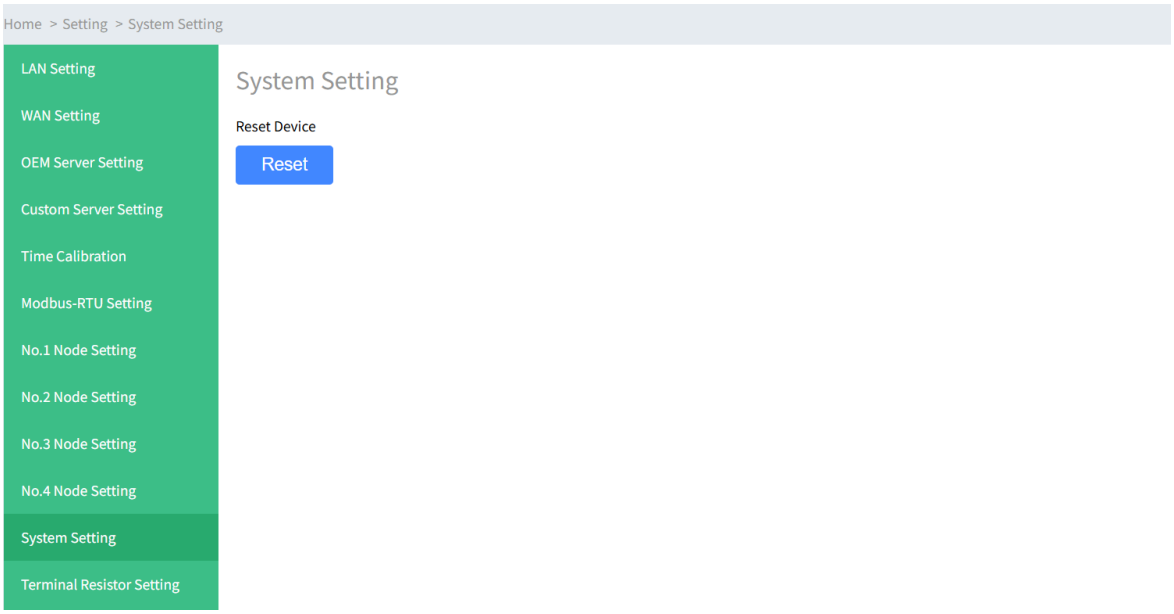
2. Enable the channel.
3. In the **AC Brand** field, select the actual brand of the air conditioner.
4. After confirming the selection, click **Submit** to apply the change.

Reset the Device

This section describes how to reset the device.

Steps:

1. Enter the **System Setting** interface under the **Setting** menu.
2. Click **Reset** to reset the device.



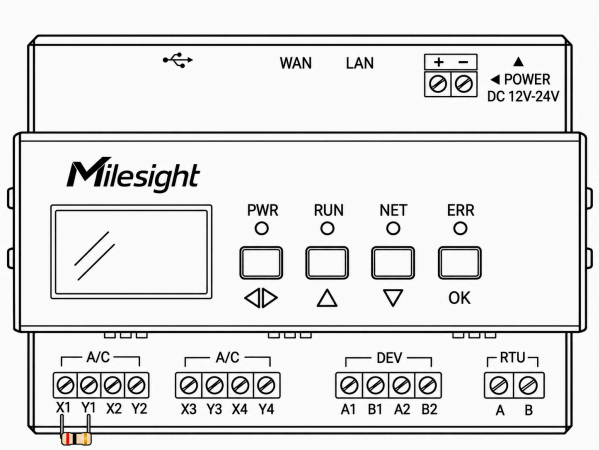
Terminal Resistor Setting

If the controller cannot detect an indoor unit, or if the indoor unit cannot be controlled properly, an external resistor can be connected to the corresponding channel terminal.

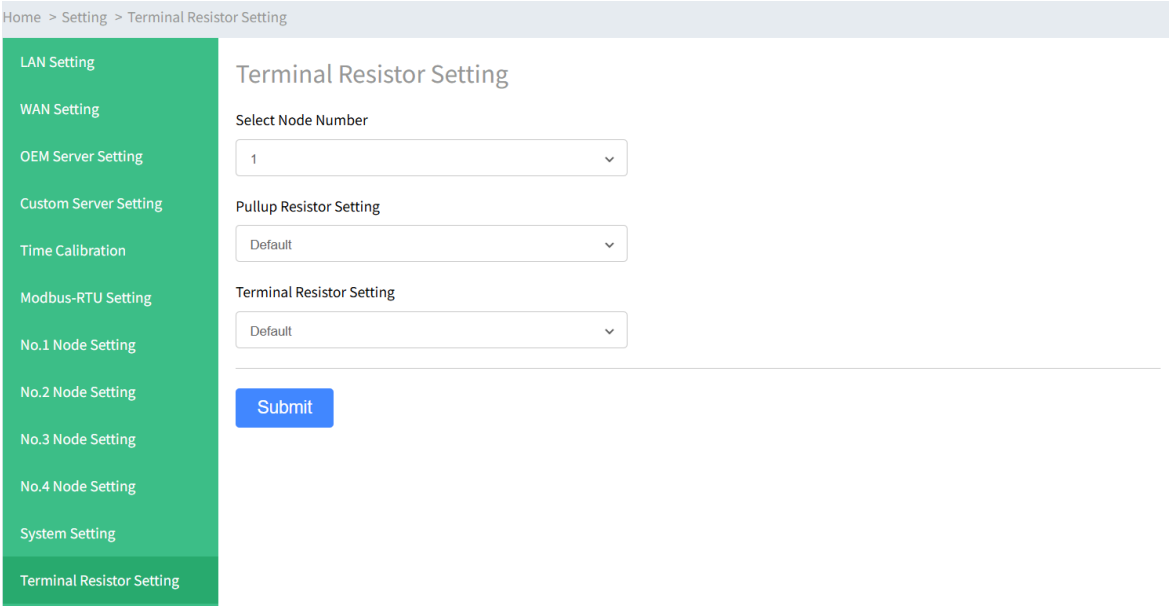
Attention:
For **Daikin, Panasonic, and Mitsubishi Electric**, both the **pull-up resistor** and **color-coded resistor** settings **must be disabled**.

Steps:

1. Loosen the screws on the air-conditioning channel terminal. Bend both leads of the resistor and connect them to the channel terminal together with the communication wires.



2. Go to **Setting > Terminal Resistor Setting**.



3. Select the node number where the resistor is connected, then enable **Terminal Resistor Setting**.
4. Click **Submit** to apply the changes.

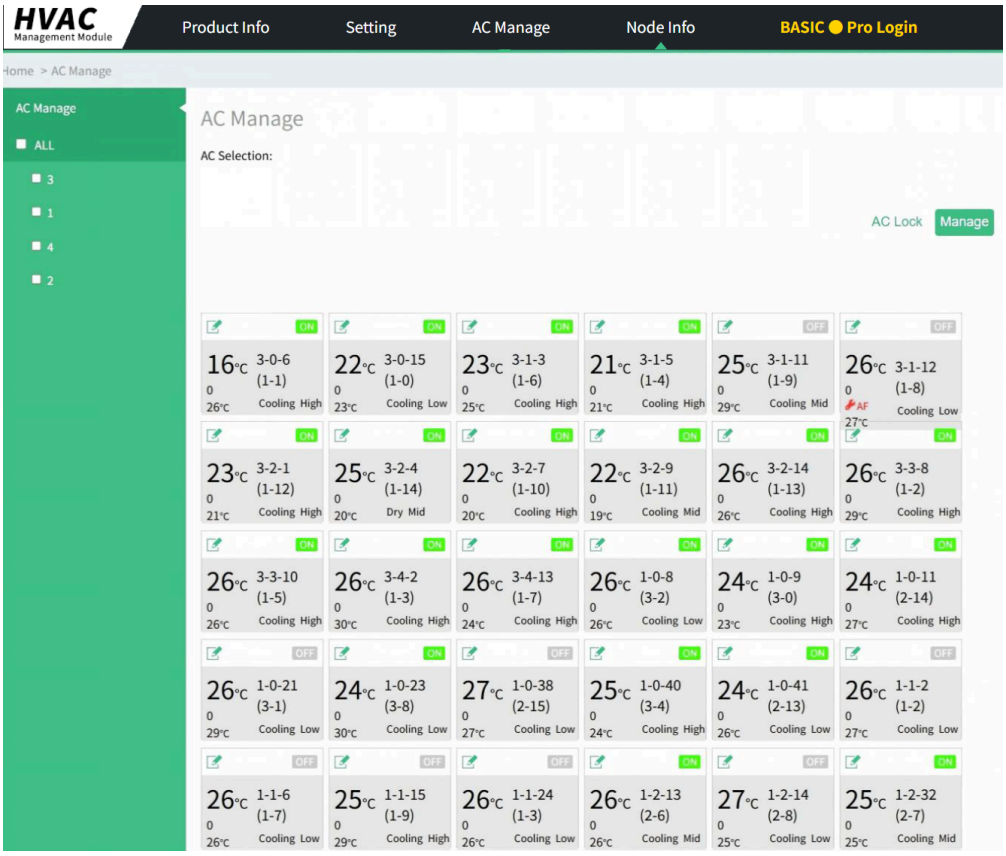
AC Manage

Control the Air Conditioners

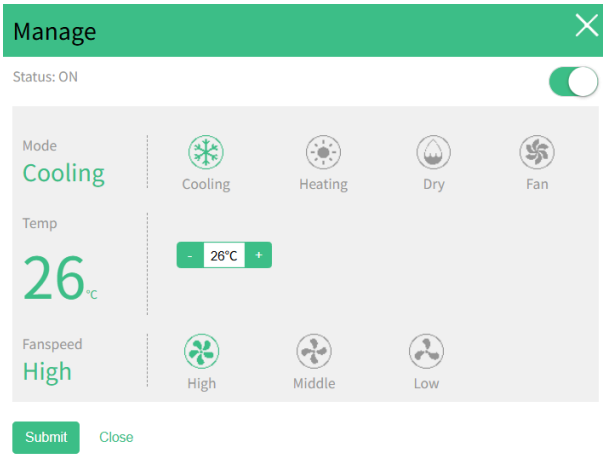
On the **Air Conditioner Management** page, you can view and control air conditioner status, including p ower on/off, working mode, set temperature, and more.

Steps:

1. Click **AC Manage** at the left of the page to view all air conditioner indoor units.



2. Click on the corresponding air conditioner cards to select multiple units. Selected air conditioners will be displayed in the **AC Selection** bar at the top. You can also directly select all air conditioners under a single channel by using options 1, 2, 3, or 4 in the left-side **AC Manage** panel.
3. Click **Manage**. In the new interface that appears, configure the desired settings. After completing your selections, click **Submit**.



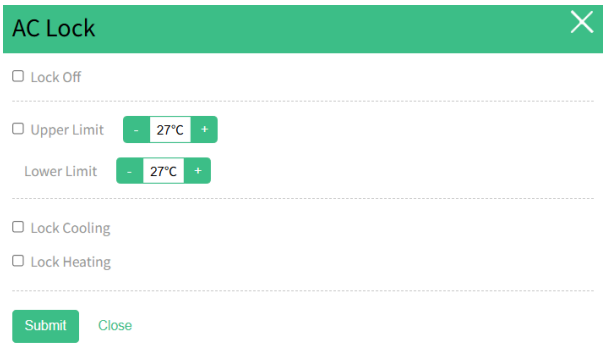
4. After a control command is successfully sent, wait briefly for the air conditioner card information to sync and update.

Lock the Air Conditioners

If you need to apply restrictions to specific air conditioners, use the **AC Lock** function.

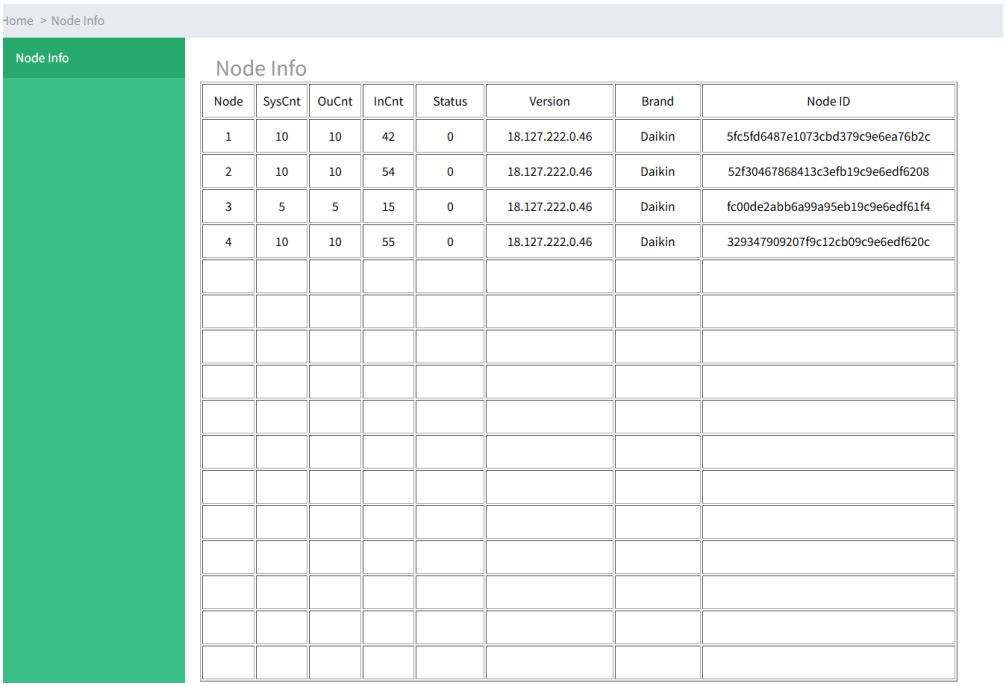
Steps:

1. Select the air conditioners you want to lock, then click **AC Lock**.
2. In the pop-up window, configure the required lock settings. After completing the settings, click **Submit**.



Channel Information

Once the controller has successfully established communication with the outdoor unit, it will automatically detect the air conditioning unit and display it on the **Node Information** page.



Node	SysCnt	OuCnt	InCnt	Status	Version	Brand	Node ID
1	10	10	42	0	18.127.222.0.46	Daikin	5fc5fd6487e1073cbd379c9e6ea76b2c
2	10	10	54	0	18.127.222.0.46	Daikin	52f30467868413c3efb19c9e6edf6208
3	5	5	15	0	18.127.222.0.46	Daikin	fc00de2abb6a99a95eb19c9e6edf61f4
4	10	10	55	0	18.127.222.0.46	Daikin	329347909207f9c12cb09c9e6edf620c

Parameter	Description
Node	Air-conditioning channel
SysCnt	Refrigeration systems number connected to this channel
OuCnt	Outdoor units number in the refrigeration systems connected to this channel
InCnt	Iutdoor units number in the refrigeration systems connected to this channel
Status	Air-conditioning channel status: • 0: Search completed • 2: Upgrading • 10: data not found • 16: Searching • 255: Initialising the air conditioning channel and controller
Version	AC firmware version connected to this channel
Brand	AC system brand connected to this channel
Node ID	AiC channel ID

Chapter 5. JSON Protocol Reference

The following section describes the protocol profile of JSON.

General Request Format

```
{
   "sn": 0, // Send message sequence number
   "cmd": " ", // Command name
   "uuid": "fa000001400001240220118000101513 4", // Unique device identifier
   "body": {
         //Add contents when method is POST or PUT
        }
}
```

General Response Format

```
{
   "sn": 0,  //Receive message sequence number
   "cmd": " ", //Command name
   "uuid": "fa000001400001240220118000101513 4", // Unique device identifier
   "body": {
         // Different contents depending on features
        }
}
```

Controller Initialization Interface

Controller Online Report

Command	Direction	Description
online	Controller → Server	After connecting to the server, the controller periodically sends an Online Message until it receives an air conditioner status query command. Default interval: 200 s.

Response Example

```
{
   "sn": 0,
```

```
  "cmd": "online",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
        "t":1700789219,
        "date":"2023-11-24 09:26:59",
        }
}
```


Response Fields

Name	Description
t	Unix timestamp
date	Current time

Query Controller General Information

Commend	Direction	Description
general_read	Server → Controller	Query the basic information about the controller.

Request Example


```
{
  "sn": 2,
  "cmd": "general_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
  }
}
```


Response Example


```
{
  "sn": 2,
  "cmd": "general_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "rtc": {
      "date": "2023-11-24 09:26:59"
```

```
    },
    "ver": "81.207.0.0.90",
    "protocol_ver": "2.15",
    "dbt": 2500,
    "dbu": 56,
    "auth": 1,
    "concentrator_id": 1,
    "watch": 0,
    "watcht": 1000
  }
}
```


Response Filed

Name	Description
date	Controller time
ver	Controller firmware version
protocol_ver	JSON protocol version
dbt	Total database capacity
dbu	Percentage of database capacity used
auth	Authorization status: 0 = Unauthorized, 1 = Authorized
concentrator_id	Controller index, used as the first segment of the four-part air conditioner address
watch	Long-running operation monitoring: 0 = Disabled, 1 = Enabled. Disabled by Default: disable.
watcht	Power off the air conditioner when the continuous operating time exceeds the specified time. Unit: min.

Configure Controller General Information

Command	Direction	Description
general_write	Server → Controller	Configure basic controller information on the server

Request Example

```
{
  "sn": 3,
  "cmd": "general_write",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "concentrator_id": 1,
    "rtc": {
      "date": "2023-11-24 09:26:59"
      },
    "restart": 500,
    "watch": 0,
    "watcht": 1000
  }
}
```


Response Example


```
{
  "sn": 3,
  "cmd": "general_write",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "errorCode": 0
  }
}
```


Parameters

Name	Description
concentrator_id	Controller index, used as the first segment of the four-part air conditioner address
rtc.date	Time synchronization via severs.
restart	Restarts the controller after the specified delay. Unit: ms.
watch	Long-running operation monitoring: 0 = Disabled, 1 = Enabled. Disabled by Default: disable.
watcht	Power off the air conditioner when the continuous operating time exceeds the specified time. Unit: min.

Response Fields

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Query AC Channel Information

Command	Direction	Description
node_online	Server → Controller	Qurry the current air condition channel information.

Request Example

```
{
  "sn": 4,
  "cmd": "node_online",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
  }
}
```

Response Example

```
{
  "sn": 4,
  "cmd": "node_online",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "nodes": [
      {
        "i": "1",
        "v": "18.127.222.0.09",
        "t": "2023-11-24 09:26:59",
        "r": "98",
        "s": "0",
        "b": "1"
        "sys_num": 10,
        "ou_num" : 14,
        "iu_num" : 160
```

```
        },
        {
          "i": "3",
          "v": "18.127.222.0.09",
          "t": "2023-11-24 09:26:59",
          "r": "98",
          "s": "4",
          "b": "1"
          "sys_num": 10,
          "ou_num" : 14,
          "iu_num" : 160
        },
        {
          "i": "9",
          "v": "18.127.222.0.09",
          "t": "2023-11-24 09:26:59",
          "r": "98",
          "s": "4",
          "b": "1"
          "sys_num": 10,
          "ou_num" : 14,
          "iu_num" : 160
        }
      ]
    }
}
```


Response Fields

Field	Description
nodes[].i	AC channel ID
nodes[].v	Channel Firmware version
nodes[].t	Current channel time
nodes[].r	Running time since the current power-on
nodes[].s	Channel status.

Field	Description
	• 0 = Normal / Search completed • 2 = Upgrading • 16 = Searching • 255 = Initializing
nodes[].b	AC brand code
nodes[].sys_num	Number of refrigeration systems
nodes[].ou_num	Number of outdoor units
nodes[].iu_num	Number of indoor units

Query AC Device Information

Command	Direction	Description
property_read	Server → Controller	The server retrieves the address information of all discovered air conditioners or a specified air conditioner.

Request Example

```
{
  "sn": 5,
  "cmd": "property_read",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "inUnitMessages": {
      "addrs": []
    }
  }
}
```

Response Example

```
{
  "sn": 5,
  "cmd": "property_read",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "inUnitMessages": [
```

```
        {
          "addr": "1-1-1-1",
          "power": 35,
          "brand": 1,
          "type": "v"
        },
        {
          "addr": "1-1-1-2",
          "power": 68,
          "brand": 1,
          "type": "v"
        }
      ],
    }
}
```


Parameter

Field	Description
addrs	Leave this field empty to query all outdoor units. To query a specific outdoor unit, enter its address information.

Response Fields

Field	Description
inUnitMessages[]	List of air conditioning units
addr	Four-part air conditioner address
power	Indoor unit capacity, unit: 100 W
brand	Air conditioner brand
type	v: Refrigerant system

Indoor Unit Interface

Status Management

Query the Indoor Unit Status

Command	Direction	Description
status_read	Server → Controller	Query the real-time status of all air conditioners or the air conditioner at the specified address.

Request Example

```
{
  "sn": 6,
  "cmd": "status_read",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "cmd": "addrs",
    "addrs": ["1-1-1-1"]
    }
}
```

Response Example

```
{
  "sn": 6,
  "cmd": "status_read",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "cmd":"addrs",
    "inUnitMessages": [
      {
        "a": "1-1-1-1",
        "o": 1,
        "ts": 24,
        "w": 1,
        "fs": 1,
        "fd": 2,
        "acs": "6608",
        "rt": 22
      }
```

```
    ]
  }
}
```

Parameters

Name	Description
cmd	Read the air conditioner status at a minimum interval of 5 s. • all: all air conditioners. • addrs: specified addresses.
addrs	Specified air condition addresses

Response Fields

Name	Description
cmd	Same as the requested value: all or addrs.
a	Air conditioner address.
o	Power status • 0 = Off • 1 = On
ts	Set temperature, range: 16–31°C.
w	Working mode • 0 = Auto • 1 = Cool • 2 = Heat • 3 = Dehumidification • 4 = Ventilation
fs	Fan speed

Name	Description
	• 0 = Auto • 1 = High • 2 = Medium • 3 = Medium-high • 4 = Low • 5 = Medium-low • 6 = Breeze • 7 = Powerful
fd	Airflow direction. Reserved field.
acs	Alarm code. LOST indicates that the air conditioner is offline; other codes are fault codes reported by the air conditioner.
rt	Room temperature.

Control the Indoor Unit

Commend	Direction	Description
control_write	Server → Controller	Set the operating status of the air conditioner.

Request Example

```
{
  "sn": 7,
  "cmd": "control_write",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "addrs": [
      "1-1-1-1",
      "1-2-1-2"
    ],
    "onOff": 1,
    "tempSet": 24,
    "workMode": 1,
    "fanSpeed": 1,
```

```
    "fanDirect": 1
  }
}
```

Response Example

```
{
  "sn": 7,
  "cmd": "control_write",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "errorCode": 0
  }
}
```

Parameters

Name	Description
addrs	Air conditioner address.
onOff	Power status • 0 = Off • 1 = On
tempSet	Set temperature, range: 16–31°C.
workMode	Working mode • 0 = Auto • 1 = Cool • 2 = Heat • 3 = Ventilation • 4 = Dehumidification
fanSpeed	Fan speed • 0 = Auto • 1 = High • 2 = Medium

Name	Description
	• 3 = Medium-high • 4 = Low • 5 = Medium-low • 6 = Breeze • 7 = Powerful
fanDirect	Airflow direction. Reserved.

Response Filed

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode

Status Automatic Periodic Reporting

Command	Direction	Description
device_report_config	Server → Controller	Enable or disable periodic air conditioner status reporting and configure the reporting interval
status_report	Controller → Server	Periodically reports the status of specified air conditioners based on the configured start time and reporting interval.

Request Example

```
{
  "sn": 10,
  "cmd": "device_report_config",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "act": 1,
    "interval": 1800
  }
}
```

Response Example

```
{
  "sn": 10,
```

```
  "cmd": "device_report_config",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "errorCode": 0
  }
}
```

```
{
  "sn": 0,
  "cmd": "status_report",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
        "cmd":"addrs",
        "inUnitMessages": [
        {
          "a": "1-1-1-1",
          "o": 1,
          "ts": 24,
          "w": 1,
          "fs": 1,
          "fd": 2,
          "acs": "6608",
          "rt": 22
        }
    ]
  }
}
```


Parameters

Name	Description
act	Periodic reporting • 0 = Disabled • 1 = Enabled
interval	Reporting interval, Unit: s. Defaults: 1800s.

Response Fields

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode

Query Periodic Reporting Configuration

Command	Direction	Description
device_report_-config_read	Server → Controller	Query the periodic reporting configuration.

Request Example

```
{
  "sn": 11,
  "cmd": "device_report_config_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
  }
}
```

Response Example

```
{
  "sn": 11,
  "cmd": "device_report_config_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
        "act": 0,
        "interval": 300,
        "errorCode":0
  }
}
```

Response Fields

Field	Description
act	0 = Disabled, 1 = Enabled
interval	Reporting interval, Unit: s.
errorCode	0: Command received successfully. For other values, see ErrorCode

Status Change Automatic reporting

Command	Direction	Description
device_update_config	Server → Controller	Enable or disable automatic reporting of air conditioner status changes.
status_report	Controller → Server	When any air conditioner status item changes, the controller reports the updated information.

Request Example

```
{
  "sn": 12,
  "cmd": "device_update_config",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "auto": 1,
  }
}
```

Response Example

```
{
  "sn": 12,
  "cmd": "device_update_config",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "errorCode": 0
  }
}
```

```
{
  "sn": 0,
  "cmd": "status_report",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "cmd":"addrs",
    "inUnitMessages": [
      {
        "a": "1-1-1-1",
        "o": 1,
```

```
            "ts": 24,
            "w": 1,
            "fs": 1,
            "fd": 2,
            "acs": "6608",
            "rt": 22
        }
    ]
  }
}
```


Parameters

Name	Description
auto	0 = Disabled, 1 = Enabled (default)

Response Fields

Field	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Query Status Change Reporting Configuration

Command	Direction	Description
device_update_-config_read	Server → Controller	Check whether automatic reporting of air conditioner status changes is enabled.

Request Example


```
{
  "sn": 13,
  "cmd": "device_update_config_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
  }
}
```


Response Example

```
{
  "sn": 13,
  "cmd": "device_update_config_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
        "auto": 1,
        "errorCode":0
        }
}
```


Response Fields

Field	Description
auto	0 = Disabled, 1 = Enabled
errorCode	0: Command received successfully. For other values, see ErrorCode.

Extended Function Interfaces

Configure the Locks Status

Command	Direction	Description
lock_write	Server → Controller	Enable air conditioning parameter lock.

Request Example


```
{
  "sn": 14,
  "cmd": "lock_write",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "addrs": [
      "16-1-1-1",
      "16-1-2-1"
    ],
    "onOffLock": 1,
    "onOff": 1,
    "modeLock": 1,
```

```
    "workMode": 1,
    "tempLock": 1,
    "tempSetLo": 24,
    "tempSetHi": 26,
    "fanSpeedLock": 1,
    "fanSpeed": 0,
    "fanDirectLock": 1,
    "fanDirect": 0
  }
}
```


Response Example


```
{
  "sn": 14,
  "cmd": "lock_write",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "errorCode": 0
  }
}
```


Parameters

Name	Description
addrs	Target air conditioner address.
onOffLock	Power lock: 0 = Not locked; 1 = Lock
onOff	Power status to be locked.
modeLock	Mode lock: 0 = Not locked; 1 = Lock
workMode	Working mode(s) to be locked • 1 = Cool • 2 = Heat • 3 = Ventilation • 4 = Dehumidification • 10 = Heat/Ventilation • 11 = Cool/Ventilation

Name	Description
	• 12 = Cool/Dehumidification • 13 = Cool/Dehumidification/Ventilation • 14 = Dehumidification/Ventilation
tempLock	Temperature lock: 0 = Not locked; 1 = Lock
tempSetLo	Minimum set temperature, range: 16–31°C.
tempSetHi	Maximum set temperature, range: 16–31°C.
fanSpeedLock	Fan speed lock. Reserved.
fanSpeed	Fan speed value.
fanDirectLock	Airflow direction lock. Reserved.
fanDirect	Airflow direction value.

Response Filed

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Query the Lock Status

Command	Direction	Description
lock_status_read	Server → Controller	Query the air conditioning lock status. • all: All air conditioning • addrs: Specified air conditioning

Request Example

```
{
  "sn": 15,
  "cmd": "lock_status_read",
  "uuid": "fa0000014000012402201180001015134",
  "body": {
    "cmd": "all"
```

```
  }
}
```

Response Example

```
{
  "sn": 15,
  "cmd": "lock_status_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "cmd": "all",
    "inUnitMessages": [
      {
        "a": "1-1-1-1",
        "ol": 0,
        "onOff": 1,
        "ml": 0,
        "workMode": 1,
        "tl": 0,
        "tsl": 24,
        "tsh": 26,
        "t": 1
      },
    ],
  }
}
```

Parameters

Name	Description
cmd	all or addrs.
addrs	Specified air conditioning addrs.

Response Filed

Name	Description
a	Air conditioner address.

Name	Description
ol	Power lock status.
onOff	Locked power status.
ml	Mode lock status.
workMode	Locked working mode.
tl	Temperature lock status.
tsl	Minimum set temperature.
tsh	Maximum set temperature.
t	Scheduled status: 0 = No, 1 = Yes.

Configure Automatic Reporting of Lock Status

Command	Direction	Description
lock_re-port_config	Server → Controller	Enable or disable periodic reporting of air conditioner lock status and configures the reporting interval.

Request Example


```
{
  "sn": 16,
  "cmd": "lock_report_config",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "act": 0,
    "interval": 300
  }
}
```


Response Example


```
{
  "sn": 16,
  "cmd": "lock_report_config",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
```

```
    "errorCode": 0
  }
}
```

```
{
    "sn": 0,
    "cmd": "lock_status_report",
    "uuid": "fa000001400001240220118000101513 4",
    "body": {
        "cmd":"addrs",
        "inUnitMessages": [
        {
          "a": "1-1-1-1",
          "ol": 0,
          "ml": 0,
          "tl": 0,
          "tsl": 24,
          "tsh": 26,
          "fsl": 0,
          "fdl": 0,
        }
      ]
  }
}
```


Parameters

Name	Description
act	0 = Disabled (default), 1 = Enabled.
interval	Reporting interval, Unit: s. Default: 300s.

Response Filed

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Query Periodic Lock Status Reporting Configuration

Command	Direction	Description
lock_report_-config_read	Server → Controller	Query whether periodic lock status reporting is enabled and the reporting interval.

Request Example

```
{
  "sn": 17,
  "cmd": "lock_report_config_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
  }
}
```

Response Example

```
{
  "sn": 17,
  "cmd": "lock_report_config_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
        "act": 0,
        "interval": 300
        "errorCode":0
        }
}
```

Response Filed

Name	Description
act	0 = Disabled, 1 = Enabled.
interval	Reporting interval, Unit: s.
errorCode	0: Command received successfully. For other values, see ErrorCode.

Configure Automatic Reporting of Lock Status Changes

Command	Direction	Description
lock_update_config	Server → Controller	Enable or disable automatic reporting of lock status changes.
lock_status_report	Controller → Server	Report air conditioner lock status changes.

Request Example

```
{
  "sn": 18,
  "cmd": "lock_update_config",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "auto": 1,
  }
}
```

Response Example

```
{
  "sn": 18,
  "cmd": "lock_update_config",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "errorCode": 0
  }
}
```

```
{
    "sn": 0,
    "cmd": "lock_status_report",
    "uuid": "fa000001400001240220118000101513 4",
    "body": {
        "cmd":"addrs",
        "inUnitMessages": [
        {
          "a": "1-1-1-1",
```

```
            "ol": 0,
            "ml": 0,
            "tl": 0,
            "tsl": 24,
            "tsh": 26,
            "fsl": 0,
            "fdl": 0,
        }
    ]
  }
}
```


Parameters

Name	Description
auto	0 = Disabled, 1 = Enabled (default).

Response Filed

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Query Automatic Reporting of Lock Status Changes

Command	Direction	Description
lock_update_-config_read	Server → Controller	Query whether automatic reporting of lock status changes is enabled.

Request Example


```
{
  "sn": 19,
  "cmd": "lock_update_config_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
  }
}
```

Response Example


```
{
   "sn": 19,
   "cmd": "lock_update_config_read",
   "uuid": "fa000001400001240220118000101513 4",
   "body": {
         "auto": 1,
         "errorCode":0
         }
}
```


Response Filed

Name	Description
auto	0 = Disabled, 1 = Enabled.
errorCode	0: Command received successfully. For other values, see ErrorCode.

Configure Batch Lock Status

Command	Direction	Description
lock_write_batch	Server → Controller	Batch configure the lock status of air conditioners.

Request Example


```
{
   "sn": 42,
   "cmd": "lock_write_batch",
   "uuid": "fa000001400001240220118000101513 4",
   "body": {
      “batchCmd”: [
                  {
                  "addrs": "16-1-1-1",
                        "onOffLock": 0,
                        "onOff": 1,
                        "modeLock": 0,
                        "workMode": 1,
                        "tempLock": 0,
```

```
                    "tempSetLo": 24,
                    "tempSetHi": 26,
                    "fanSpeedLock": 0,
                    "fanSpeed": 0,
                    "fanDirectLock": 0,
                    "fanDirect": 0
                },
                {
                "addrs": "16-1-1-2",
                    "onOffLock": 0,
                    "onOff": 1,
                    "modeLock": 0,
                    "workMode": 1,
                    "tempLock": 0,
                    "tempSetLo": 24,
                    "tempSetHi": 26,
                    "fanSpeedLock": 0,
                    "fanSpeed": 0,
                    "fanDirectLock": 0,
                    "fanDirect": 0
                }
            ]
        }
}
```


Response Example


```
{
   "sn": 42,
   "cmd": "lock_write_batch",
   "uuid": "fa000001400001240220118000101513 4",
   "body": {
        "errorCode": 0
   }
}
```


Parameters

Name	Description
batchCmd	Multiple Lock Commands
addrs	Target air conditioner address.
onOffLock	Power lock: 0 = Not locked; 1 = Lock
onOff	Power status to be locked.
modeLock	Mode lock: 0 = Not locked; 1 = Lock
workMode	Working mode(s) to be locked • 1 = Cool • 2 = Heat • 3 = Ventilation • 4 = Dehumidification • 10 = Heat/Ventilation • 11 = Cool/Ventilation • 12 = Cool/Dehumidification • 13 = Cool/Dehumidification/Ventilation • 14 = Dehumidification/Ventilation
tempLock	Temperature lock: 0 = Not locked; 1 = Lock
tempSetLo	Minimum set temperature, range: 16–31°C.
tempSetHi	Maximum set temperature, range: 16–31°C.
fanSpeedLock	Fan speed lock. Reserved.
fanSpeed	Fan speed value.
fanDirectLock	Airflow direction lock. Reserved.
fanDirect	Airflow direction value.

Response Fields

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Create a Schedule

Command	Detection	Description
schedule_write	Server → Controller	Writes scheduled tasks. Supports up to 64 tasks.

Request Example


```
{
  "sn": 20,
  "cmd": "schedule_write",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "schNo": 1,
    "addrs": [
      "1-1-1-1",
      "1-1-1-2"
    ],
    "pointTime": "7:30",
    "startDate": "2021-04-01",
    "endDate": "2021-04-10",
    "exclDate": [
      "2021-04-03",
      "2021-04-05"
    ],
    "scheInfo": {
      "action": 1,
      "onOff": 1,
      "tempSet": 24,
      "workMode": 1,
      "fanSpeed": 1,
      "fanDirect": 1,
      "onOffLock": 1,
      "modeLock": 1,
      "tempLock": 1,
      "tempSetLo": 24,
      "tempSetHi": 26,
      "fanSpeedLock": 0,
      "fanDirectLock": 0
```

```
    }
  }
}
```

Response Example

```
{
  "sn": 20,
  "cmd": "schedule_write",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "errorCode": 0
  }
}
```

Parameters

Name	Description
schNo	Scheduled ID.
addrs	Target air conditioner address.
pointTime	Execution time.
startDate / endDate	Effective date range.
exclDate	List of excluded dates.
scheInfo.action	• 0 = Power off • 1 = Power on • 2 = Power off and lock • 3 = Unlock power control • 4 = Unlock and power on • 7 = Apply lock settings
scheInfo.Control	Used when action = 1. Includes onOff, tempSet, workMode, fanSpeed, and fanDirect.
scheInfo.Lock	Used when action = 7. Includes onOffLock, modeLock, tempLock, tempSetLo/Hi, etc.

Name	Description
	Note: When enabling the lock function, adjust any non-compliant settings first. For example, to lock the air conditioner in the off state, turn it off before applying the lock.

Response Filed

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Query the Schedule

Command	Detection	Description
schedule_read	Server → Controller	Query the air conditioner schedule information.

Request Example

```
{
  "sn": 23,
  "cmd": "schedule_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "schNos": [1],
  }
}
```

Response Example

```
{
  "sn": 23,
  "cmd": "schedule_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "items": [
      {
        "schNo": 1,
```

```
            "addrs": [
              "1-1-1-1",
              "1-1-1-2"
            ],
            "type": "v",
            "pointTime": "7:30",
            "startDate": "2021-04-01",
            "endDate": "2021-04-10",
            "scheInfo": {
              "action": 1,
              "onOff": 1,
              "tempSet": 24,
              "workMode": 1,
              "fanSpeed": 1,
              "fanDirect": 1,
              "onOffLock": 1,
              "modeLock": 1,
              "tempLock": 1,
              "tempSetLo": 24,
              "tempSetHi": 26
            }
          },
        ]
      }
}
```


Parameters

Name	Description
schNos	Scheduled task ID. Empty array queries all scheduled tasks.

Response Filed

Name	Description
schNo	Scheduled task ID
addrs	Air conditioner address
type	v: Refrigerant-system air conditioner

Name	Description
pointTime	Execution time.
startDate/endDate	Effective date range.
scheInfo	Scheduled action parameters.

Delete a Schedule

Command	Detection	Description
schedule_delete	Server → Controller	Delete the air conditioning schedule.

Request Example

```
{
  "sn": 24,
  "cmd": "schedule_delete",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "schNos": [1],
  }
}
```

Response Example

```
{
  "sn": 24,
  "cmd": "schedule_delete",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "errorCode": 0
  }
}
```

Parameters

Name	Description
schNos	Scheduled task ID. Empty array queries all scheduled tasks.

Response Filed

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Query the Runtime

Command	Direction	Description
energy_read	Server → Controller	Query the accumulated working time within the specified time range.

Request Example

```
{
  "sn": 27,
  "cmd": "energy_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
      "runtime": {
        "timeRange": "202102031800~202102032000",
        "addrs": [
          "1-1-8-9",
          "1-1-8-10"
      ],
       "si":"s"
    }
  }
}
```

Response Example

```
{
  "sn": 27,
  "cmd": "energy_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "sn": "a",
    "timeRange": "202102031800~202102032000",
    "runtime": [
```

```
      {
        "a": "1-1-8-9",
        "i": [
          {
          "r":"20"
          }
          ],
        "C":"71"
      },
      {
        "a": "1-1-8-10",
        "i": [
          {
          "r":"20"
          }
          ],
        "C":"71"
      }
    ]
  }
}
```

Parameters

Name	Description
timeRange	Query time range. The start and end times must be on the hour.
addrs	Indoor unit address. An empty array queries all indoor units.
si	Equivalent flag bit. Include this field in the first request packet only. Continue sending read commands until the final packet is received. Do not include `"si":"s"` in subsequent requests.

Response Fields

Name	Description
sn	Packet sequence flag for segmented transmission. `"a"` indicates a non-final packet; `"e"` indicates the final packet.

Name	Description
timeRange	Query time range.
a	Indoor unit address.
r	Accumulated operating time within the specified period, Unit; min.
C	Indoor unit capacity.

Query the Equivalent Data

Command	Key	Direction	Description
energy_read	shareE-quivalents	Server → Controller	Query equivalent value information for air conditioners within the specified time range.

Request Example

```
{
  "sn": 28,
  "cmd": "energy_read",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "shareEquivalents": {
      "timeRange": "202102031800~202102032000",
      "addrs": [
        "1-1-8-9",
        "1-1-8-10"
      ],
      "si":"s"
    }
  }
}
```

Response Example

```
{
  "sn": 28,
  "cmd": "energy_read",
  "uuid": "fa00000140000124022011800010151 34",
  "body": {
    "sn": "a",
```

```
    "timeRange": "202102031800~202102032000",
    "shareEquivalents": [
      {
        "a": "1-1-8-9",
        "i": [
          {
            "t": "202102032000",
            "X": "8.6"
          }
        ],
        "C":"71"
      },
      {
        "a": "1-1-8-10",
        "i": [
          {
            "t": "202102032000",
            "X": "65.2"
          }
        ],
        "C":"71"
      }
    ]
  }
}
```


Parameters

Name	Description
timeRange	Query time range. The start and end times must be on the hour.
addrs	Indoor unit address. An empty array queries all indoor units.
si	Equivalent flag bit. Include this field in the first request packet only. Continue sending read commands until the final packet is received. Do not include `"si":"s"` in subsequent requests.

Response Fields

Name	Description
sn	Packet sequence flag for segmented transmission. `"a"` indicates a non-final packet; `"e"` indicates the final packet.
timeRange	Query time range.
a	Indoor unit address.
t	Query end time.
X	Sum of equivalent values within the specified time range.
C	Indoor unit capacity.

Query the Operation Logs

Command	Direction	Description
energy_read	Server → Controller	Query the air conditioner operation records.

Request Example

```
{
  "sn": 35,
  "cmd": "energy_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
      "operateLogs": {
      "timeRange": "202102031800~202102031900",
      "addrs": [
          "1-1-8-9",
          "1-1-8-10"
      ]
    }
  }
}
```

Response Example

```
{
  "sn": 35,
  "cmd": "energy_read",
```

```
"uuid": "fa000001400001240220118000101513 4",
"body": {
"timeRange": "202102031800~202102031900",
  "operateLogs": [
    {
      "a": "1-1-8-9",
      "i": [
        {
          "t": "202102031800",
          "o": 1,
          "ts": 24,
          "w": 1,
          "fs": 1,
          "fd": 1,
          "a": ""
        },
        {
          "t": "202102031805",
          "o": 1,
          "ts": 24,
          "w": 1,
          "fs": 1,
          "fd": 1,
          "a": "LOST"
        }
      ]
    },
    {
      "a": "1-1-8-10",
      "i": [
        {
          "t": "202102031800",
          "o": 1,
          "ts": 24,
          "w": 1,
          "fs": 1,
          "fd": 1,
```

```
            "a": "U5"
          },
          {
            "t": "20210203180110",
            "o": 1,
            "ts": 24,
            "w": 1,
            "fs": 1,
            "fd": 1,
            "a": "6686"
          }
        ]
      }
    ]
  }
}
```


Parameters

Name	Description
timeRange	Query time range. The start and end times must be on the hour.
addrs	Indoor unit address. An empty array queries all indoor units.

Response Fields

Name	Description
timeRange	Query time range.
a	Indoor unit address.
t	Timestamp.
o	Power status.
ts	Set temperature.
w	Working mode.
fs	Fan speed.
fd	Airflow direction.

Name	Description
a	Fault code. Empty indicates no fault, **LOST** indicates offline or not discovered.

Start Load Regulation

Command	Direction	Description
start_regulate	Server → Controller	Enable load control mode.

Request Example


```
{
        "sn": 38,
        "cmd": "start_regulate",
        "uuid": "fa000001400001240220118000101 5134",
        "body": {
        "addrs": [
        "1-1-1-1",
        "1-2-1-2"
        ],
        "end":"2023-11-24 09:26:59",
        "trempCtl": 0,
        "modelCtl": 0,
        "onOffCtl": 0
        }
        }
```


Response Example


```
{
            "sn": 38,
            "cmd": "start_regulate",
            "uuid": "fa000001400001240220118000101 5134",
            "body": {
            "errorCode":0
            }
            }
```


Parameters

Name	Description
addrs	Target air conditioner address. An empty array applies to all air conditioners.
end	Load control end time.
trempCtl	User temperature control: 0 = Allowed, 1 = Not allowed.
modelCtl	User mode control: 0 = Allowed, 1 = Not allowed.
onOffCtl	User power control: 0 = Allowed, 1 = Not allowed.

Response Fields

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

End Load Regulation

Command	Direction	Description
end_regulate	Server → Controller	Disable load control mode.

Request Example

```
{
        "sn": 39,
        "cmd": "end_regulate",
        "uuid": "fa00000140000124022011800010151 34",
        "body": {
        }
        }
```

Response Example

```
{
            "sn": 39,
            "cmd": "end_regulate",
            "uuid": "fa00000140000124022011800010151 34",
            "body": {
            "errorCode":0
            }
            }
```

Response Fields

Name	Description
errorCode	0: Command received successfully. For other values, see ErrorCode.

Outdoor Unit Interface

Note:
This feature is only applicable to Daikin, Gree, Hitachi, Haier, Hisense, Midea, Mitsubishi Heavy Industries, Toshiba, and Qingdao YORK. Please contact Milesight Sales Support before use.

Query Operating Parameters

Command	Direction	Description
ou_merge_param	Server → Controller	Queries outdoor unit operating parameters.

Request Example

```
{
   "sn": 37,
   "cmd": "ou_merge_param",
   "uuid": "fa000001400001240220118000101513 4",
   "body": {
         "addrs": [
            "1-1-1",
            "1-2-1"
         ]
   }
}
```

Response Example

```
{
   "sn": 37,
   "cmd": "ou_merge_param",
   "uuid": "fa000001400001240220118000101513 4",
   "body": {
      "iumsg": [
{
```

```
            "addr": "1-1-1-0",
            "ma": 1,
            "model": "MediaV8",
            "cpt": 100,
            "type": "v",
            "wm": 1,
            "cttof": 99,
            "caoff1": 0,
            "caof1": 99,
            "caoff2": 1,
            "caof2": 99,
            "cpsc1": 99,
            "cpsc2": 99,
            "het": 99,
            "dptc1": 99,
            "dptc2": 99,
            "cs1": 99,
            "cs2": 99,
            "at": 99,
            "hp": 99,
            "lp": 99,
            "evaf": 0,
            "eva": 99,
            "fwsf": 99,
            "fws": 99,
            "df": 0,
            "rt": 0,
            "acs": "01"
        }
    ]
  }
}
```


Parameters

Name	Description
addrs	Target indoor unit address. An empty array applies to all indoor units.

Response Fields

Name	Description
addr	Four-part outdoor unit address.
ma	Primary/Secondary. • 1: Primary • 0: Secondary
model	Model.
cpt	Capacity.
type	v: Refrigerant-system air conditioner.
wm	Working mode • 0 = Cool • 1 = Heat • 2 = Standby • 3 = Simultaneous cool and heat
cttof	Total target operating frequency of the compressor, Unit: Hz.
caoff1/2	Unit flag for actual compressor frequency/speed. • 0: frequency (Hz) • 1: speed (rps)
caof1/2	Actual compressor operating frequency/speed.
cpsc1/2	Compressor current, Unit: A.
het	Heat exchanger temperature, Unit: °C.
dptc1/2	Compressor discharge temperature, Unit: °C.
cs1/2	Compressor superheat, Unit: °C.
at	Ambient temperature.
hp/lp	High/low pressure, Unit: MPa.
evaf	Electronic Expansion Valve Opening Unit Flag

Name	Description
	• 0: pls • 1: %
eva	Electronic Expansion Valve Opening
fwsf	Fan Speed Unit Flag • 0: lev • 1: rps
fws	Fan Speed
df	Defrost status • 0: No • 1: Yes
rt	Test run status • 0: No • 1: Yes
acs	Alarm code.

Branch Selector Interface

Note:
Applicable to certain brand only. Please consult Milesight sales support before use.

Query Operating Parameters

Command	Direction	Description
iuparam_read	Server → Controller	Query indoor unit operating parameters.

Request Example

```
{
  "sn": 36,
  "cmd": "iuparam_read",
```

```
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
      "addrs": [
        "1-1-1-1",
        "1-2-1-2"
      ]
  }
}
```


Response Example


```
{
  "sn": 36,
  "cmd": "iuparam_read",
  "uuid": "fa000001400001240220118000101513 4",
  "body": {
    "iumsg": [
{
        "a": "1-1-1-1",
        "acs": "ff",
        "cp": 40,
        "ev": 100,
        "tg": 18,
        "tl": 50,
        "tb": 28,
        "to": 28,
        "ts": 28,
        "of": 1,
        "md": 2,
        "fs": 0,
        "ad": 56,
        "th": 1,
        "mi": 0,
        "mc": 0
      },
      {
        "a": "1-2-1-2",
        "acs": "6608",
        "cp": 40,
```

```
            "ev": 100,
            "tg": 18,
            "tl": 50,
            "tb": 28,
            "to": 28,
            "ts": 28,
            "of": 1,
            "md": 2,
            "fs": 0,
            "ad": 12,
            "th": 1,
            "mi": 1,
            "mc": 0
        }
    ]
  }
}
```


Parameters

Name	Description
addrs	Target indoor unit address. An empty array applies to all indoor units.

Response Fields

Name	Description
a	Indoor unit address.
acs	Alarm code.
cp	Capacity code.
ev	Electronic expansion valve opening.
tg	Gas pipe temperature.
tl	Liquid pipe temperature.
tb	Return air temperature.
to	Supply air temperature.

Name	Description
ts	Set temperature.
of	Power status.
md	Operating mode.
fs	Fan speed.
ad	Centralized control address.
th	Thermostat status: 1 = On, 0 = Off.
mi	Master indoor unit / cooling-heating priority status.
mc	Mode conflict status.

Chapter 6. Modbus Protocol Reference

The following section describes the protocol profile of Modbus.

Module	Address Range	Description
Master Info	D0000 - D0021	Master-only identifiers, firmware, time, protocol version, comm status.
Module A - Channel Info	D0022 - D0725	Per-channel info block.
Module B - Indoor Unit Parameters	D24000 - D34239	Per-indoor-unit parameter block .
Module C - Group Control (per-Ch)	D23581 - D23652	Per-channel single-channel group control block.
Module D - Group Control (All-Ch)	D23885 - D23892	All-channel group control.
System Settings	D65000 - D65005	Time set & device reboot.

Address-Arithmetic Rules

X: Channel ID, U: Indoor Unit ID

Module A: Channel X (1-4): D(22 + (X-1) * 176 +field_offset)

Module B: Channel X (1-4), Unit U (1-160): D(24000 + (X-1) * 2560 + (U-1) * 16 + field_offset)

Module C: Channel X (1-4): D(23581 + (X-1) * 18 + field_offset)

All offsets are in register units: H = B15-B8 (high byte), L = B7-B0 (low byte).

Master Information

Offset	Register Address	Byte/Bit	Field ID	Function Description	Func-tion Code	R/W
+000	D0000	B15-B8 (High)	D0000_H	Master ID Byte 1	0x03	R
+000	D0000	B7-B0 (Low)	D0000_L	Master ID Byte 2	0x03	R
+001	D0001	B15-B8 (High)	D0001_H	Master ID Byte 3	0x03	R

Offset	Register Address	Byte/Bit	Field ID	Function Description	Func-tion Code	R/W
+001	D0001	B7-B0 (Low)	D0001_L	Master ID Byte 4	0x03	R
+002	D0002	B15-B8 (High)	D0002_H	Master ID Byte 5	0x03	R
+002	D0002	B7-B0 (Low)	D0002_L	Master ID Byte 6	0x03	R
+003	D0003	B15-B8 (High)	D0003_H	Master ID Byte 7	0x03	R
+003	D0003	B7-B0 (Low)	D0003_L	Master ID Byte 8	0x03	R
+004	D0004	B15-B8 (High)	D0004_H	Master ID Byte 9	0x03	R
+004	D0004	B7-B0 (Low)	D0004_L	Master ID Byte 10	0x03	R
+005	D0005	B15-B8 (High)	D0005_H	Master ID Byte 11	0x03	R
+005	D0005	B7-B0 (Low)	D0005_L	Master ID Byte 12	0x03	R
+006	D0006	B15-B8 (High)	D0006_H	Master ID Byte 13	0x03	R
+006	D0006	B7-B0 (Low)	D0006_L	Master ID Byte 14	0x03	R
+007	D0007	B15-B8 (High)	D0007_H	Master ID Byte 15	0x03	R
+007	D0007	B7-B0 (Low)	D0007_L	Master ID Byte 16	0x03	R
+008	D0008	B15-B8 (High)	D0008_H	Reserved	0x03	R
+008	D0008	B7-B0 (Low)	D0008_L	Master Firmware Version Byte 1	0x03	R
+009	D0009	B15-B8 (High)	D0009_H	Master Firmware Version Byte 2	0x03	R
+009	D0009	B7-B0 (Low)	D0009_L	Master Firmware Version Byte 3	0x03	R
+010	D0010	B15-B8 (High)	D0010_H	Master Firmware Version Byte 4	0x03	R
+010	D0010	B7-B0 (Low)	D0010_L	Master Firmware Version Byte 5	0x03	R
+011	D0011	B15-B8 (High)	D0011_H	Reserved	0x03	R
+011	D0011	B7-B0 (Low)	D0011_L	Reserved	0x03	R

Offset	Register Address	Byte/Bit	Field ID	Function Description	Function Code	R/W
+012	D0012	B15-B8 (High)	D0012_H	Master Time - Year (increment from 2000)	0x03	R
+012	D0012	B7-B0 (Low)	D0012_L	Master Time - Month	0x03	R
+013	D0013	B15-B8 (High)	D0013_H	Master Time - Day	0x03	R
+013	D0013	B7-B0 (Low)	D0013_L	Master Time - Hour	0x03	R
+014	D0014	B15-B8 (High)	D0014_H	Master Time - Minute	0x03	R
+014	D0014	B7-B0 (Low)	D0014_L	Master Time - Second	0x03	R
+015	D0015	B15-B8 (High)	D0015_H	Reserved	0x03	R
+015	D0015	B7-B0 (Low)	D0015_L	Reserved	0x03	R
+016	D0016	B15-B8 (High)	D0016_H	Master Software Protocol Version Byte 1	0x03	R
+016	D0016	B7-B0 (Low)	D0016_L	Master Software Protocol Version Byte 2	0x03	R
+017	D0017	B15-B8 (High)	D0017_H	Reserved	0x03	R
+017	D0017	B7-B0 (Low)	D0017_L	Reserved	0x03	R
+018	D0018	B15-B8 (High)	D0018_H	Reserved	0x03	R
+018	D0018	B7-B0 (Low)	D0018_L	Reserved	0x03	R
+019	D0019	B15-B8 (High)	D0019_H	Reserved	0x03	R
+019	D0019	B7-B0 (Low)	D0019_L	Reserved	0x03	R
+020	D0020	B15-B8 (High)	D0020_H	Reserved	0x03	R
+020	D0020	B7-B0 (Low)	D0020_L	Reserved	0x03	R
+021	D0021	B15-B8 (High)	D0021_H	Reserved	0x03	R
+021	D0021	B7-B0 (Low)	D0021_L	Channel Communication Status (1=Normal 0=Abnormal)	0x03	R

Example: Read the software protocol version.

Direction	Code
Request	01 03 00 10 00 01 85 CF
Response	01 03 02 02 06 39 26 0x0206 indicates Modbus protocol version 2.6.

Module A: Channel Info Block

Base: D0022

Address rule: Channel X (1-4) → D(22 + (X-1) * 176 +field_offset)

Offset	Register Address	Byte/Bit	Field ID	Function Description	Func-tion Code	R/W
+000	D0022 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0022_H / D0022_L	H: Reserved L: Channel 1 Firmware Version Byte 1	0x03	R
+001	D0023 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0023_H / D0023_L	H: Channel 1 Firmware Version Byte 2 L: Channel 1 Firmware Version Byte 3	0x03	R
+002	D0024 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0024_H / D0024_L	H: Channel 1 Firmware Version Byte 4 L: Channel 1 Firmware Version Byte 5	0x03	R

Offset	Register Address	Byte/Bit	Field ID	Function Description	Function Code	R/W
+003	D0025 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0025_H / D0025_L	H: Channel 1 Time - Year (increment from 2000) L: Channel 1 Time - Month	0x03	R
+004	D0026 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0026_H / D0026_L	H: Channel 1 Time - Day L: Channel 1 Time - Hour	0x03	R
+005	D0027 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0027_H / D0027_L	H: Channel 1 Time - Minute L: Channel 1 Time - Second	0x03	R
+006	D0028 (Ch1)	Whole Register	D0028	Channel 1 Status Code • 0x00: Normal • 0x02 Upgrading • 0x10 Searching • 0xff Initializing	0x03	R
+007	D0029 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0029_H / D0029_L	H: Channel 1 Cumulative Run Time Byte 1 (High) L: Channel 1 Cumulative Run Time Byte 2	0x03	R

Offset	Register Address	Byte/Bit	Field ID	Function Description	Function Code	R/W
+008	D0030 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0030_H / D0030_L	H: Channel 1 Cumulative Run Time Byte 3 L: Channel 1 Cumulative Run Time Byte 4 (Low)	0x03	R
+009	D0031 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0031_H / D0031_L	H: Channel 1 Detected Outdoor Unit System Count L: Channel 1 Detected Indoor Unit Count	0x03	R
+010.. +169	D(base+10 .. base+169)	B15-B8 (High) / B7-B0 (Low)	D####_H / D####_L	Indoor Unit Address Table — 160 units, 1 reg/unit. Unit U -> D(base +10+(U-1)); H=Outdoor Unit Address (0-254), L=Indoor Unit Address (0-254)	0x03	R
+170	D0192 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0192_H / D0192_L	H: Channel 1 Enabled L: Channel 1 AC Brand Code	0x03	R
+171	D0193 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0193_H / D0193_L	H: Reserved L: Reserved	0x03	R
+172	D0194 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0194_H / D0194_L	H: Reserved L: Reserved	0x03	R

Offset	Register Address	Byte/Bit	Field ID	Function Description	Func-tion Code	R/W
+173	D0195 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0195_H / D0195_L	H: Reserved L: Reserved	0x03	R
+174	D0196 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0196_H / D0196_L	H: Reserved L: Reserved	0x03	R
+175	D0197 (Ch1)	B15-B8 (High) / B7-B0 (Low)	D0197_H / D0197_L	H: Reserved L: Reserved	0x03	R

Example 1: Read the number of detected AC units.

Direction	Code
Request	01 03 00 1f 00 01 B5 CC
Response	01 03 02 0E A0 BC 5C 0x0E indicating 14 outdoor unit systems. 0xA0 indicating 160 indoor units detected.

Example 2: Read the address of detected AC units.

Direction	Code
Request	01 03 00 20 00 01 85 C0
Response	01 03 02 01 00 B9 D4 The first detected indoor unit on Channel 1 has outdoor unit address 1 and indoor unit address 0.

Direction	Code
Request	01 03 00 21 00 01 D4 00
Response	01 03 02 01 01 78 14

Direction	Code
	The second detected indoor unit on Channel 1 has outdoor unit address 1 and indoor unit address 1.

Module B: Indoor Unit Parameter Block

Base: D24000

Address rule: Channel x (1-4), Unit U (1-160) -> D(24000 + (X-1) * 2560 + (U-1) * 16 + field_offset)

Offset	Register Address	Byte/Bit	Field ID	Function Description	Function Code	R/W
+00	D24000 (Ch1 U1)	Whole Register	D24000	Indoor Unit U - Outdoor Unit Address (0-254, >254 invalid)	0x03	R
+01	D24001 (Ch1 U1)	Whole Register	D24001	Indoor Unit U - Indoor Unit Address (0-254, >254 invalid)	0x03	R
+02	D24002 (Ch1 U1)	Whole Register	D24002	Indoor Unit U - Lock Bit=1 locked, 0 unlocked	0x03/0x06/0x10	R/W
+03	D24003 (Ch1 U1)	Whole Register	D24003	Indoor Unit U - On/Off (0x00 Off, 0x01 On)	0x03/0x06/0x10	R/W
+04	D24004 (Ch1 U1)	Whole Register	D24004	Indoor Unit U - Set Temperature (16-31°C)	0x03/0x06/0x10	R/W
+05	D24005 (Ch1 U1)	Whole Register	D24005	Indoor Unit U - Mode • 0x00 Auto • 0x01 Cool • 0x02 Dry • 0x04 Fan • 0x08 Heat	0x03/0x06/0x10	R/W

Offset	Register Address	Byte/Bit	Field ID	Function Description	Func-tion Code	R/W
+06	D24006 (Ch1 U1)	Whole Register	D24006	Indoor Unit U - Fan Speed • 0x00 Auto • 0x01 High • 0x02 Medium • 0x03 Medi-um-High • 0x04 Low • 0x05 Medi-um-Low • 0x06 Breeze • 0x07 Turbo	0x03/0x06/ 0x10	R/W
+07	D24007 (Ch1 U1)	Whole Register	D24007	Indoor Unit U - Air Di-rection (Reserved)	0x03/0x06/ 0x10	R/W
+08	D24008 (Ch1 U1)	Whole Register	D24008	Indoor Unit U - Temp Lock - Lower Limit (0=unset, 16-31°C)	0x03/0x06/ 0x10	R/W
+09	D24009 (Ch1 U1)	Whole Register	D24009	Indoor Unit U - Temp Lock - Upper Limit (0=unset, 16-31°C)	0x03/0x06/ 0x10	R/W
+10	D24010 (Ch1 U1)	Whole Register	D24010	Indoor Unit U - Return Air Temperature	0x03	R
+11	D24011 (Ch1 U1)	Whole Register	D24011	Indoor Unit U - Humidi-ty (Reserved)	0x03	R
+12	D24012 (Ch1 U1)	Whole Register	D24012	Indoor Unit U - Indoor Unit Capacity (self-cal-culate if unavailable)	0x03	R
+13	D24013 (Ch1 U1)	Whole Register	D24013	Indoor Unit U - Daily Cumulative Run Time (0-1440 min)	0x03	R

Offset	Register Address	Byte/Bit	Field ID	Function Description	Func-tion Code	R/W
+14	D24014 (Ch1 U1)	B15-B8 (High) / B7-B0 (Low)	D24014_-H / D24014_L	H: Indoor Unit U - Fault Code Character 1 (ASCII) L: Indoor Unit U - Fault Code Character 2 (ASCII)	0x03	R
+15	D24015 (Ch1 U1)	B15-B8 (High) / B7-B0 (Low)	D24015_-H / D24015_L	H: Indoor Unit U - Fault Code Character 3 (ASCII) L: Indoor Unit U - Fault Code Character 4 (ASCII)	0x03	R

Example: Turn on indoor unit 1 of channel 1 and set the temperature to 25°C

Direction	Code
Request	01 10 5D C3 00 02 04 00 01 00 19 8B 73
Response	01 10 5D C3 00 02 A2 58

Module C: Single-Channel Group Control Block

Base: D23581

Address rule: Channel X (1-4) -> D(23581 + (X-1) * 18 + field_offset)

Offset	Register Address	Byte/Bit	Field ID	Function Description	Func-tion Code	R/W
+00..+09	D23581-D23590	Whole Register	-	Single-Channel Group Control - Reserved (D23581-D23590)	-	-

Offset	Register Address	Byte/Bit	Field ID	Function Description	Function Code	R/W
+10	D23591 (Ch1)	Whole Register	D23591	Single-Channel Group Control - Lock (Bit=1 locked)	0x03/0x06/0x10	R/W
+11	D23592 (Ch1)	Whole Register	D23592	Single-Channel Group Control - On/Off (0x00 Off/0x01 On)	0x03/0x06/0x10	R/W
+12	D23593 (Ch1)	Whole Register	D23593	Single-Channel Group Control - Set Temperature (16-31°C)	0x03/0x06/0x10	R/W
+13	D23594 (Ch1)	Whole Register	D23594	Single-Channel Group Control - Mode • 0x01 Cool • 0x02 Dry • 0x04 Fan • 0x08 Heat	0x03/0x06/0x10	R/W
+14	D23595 (Ch1)	Whole Register	D23595	Single-Channel Group Control - Fan Speed • 0x00 Auto • 0x01 High • 0x02 Medium • 0x03 Medium-High • 0x04 Low • 0x05 Medium-Low • 0x06 Breeze • 0x07 Turbo	0x03/0x06/0x10	R/W
+15	D23596 (Ch1)	Whole Register	D23596	Single-Channel Group Control - Air Direction	0x03/0x06/0x10	R/W

Offset	Register Address	Byte/Bit	Field ID	Function Description	Function Code	R/W
+16	D23597 (Ch1)	Whole Register	D23597	Single-Channel Group Control - Temp Lock - Lower Limit (0=unset, 16-31°C)	0x03/0x06/0x10	R/W
+17	D23598 (Ch1)	Whole Register	D23598	Single-Channel Group Control - Temp Lock - Upper Limit (0=unset, 16-31°C)	0x03/0x06/0x10	R/W

Example: Turn On all indoor units on channel 1 and set 25°C

Direction	Code
Request	01 10 5C 28 00 02 04 00 01 00 19 C9 18
Response	01 10 5C 28 00 02 D3 90

Module D: All-Channel Group Control

Base: D23885

Offset	Register Address	Byte/Bit	Field ID	Function Description	Function Code	R/W
+00	D23885	Whole Register	D23885	All-Channel Group Control - Lock (Bit=1 locked)	0x03/0x06/0x10	R/W
+01	D23886	Whole Register	D23886	All-Channel Group Control - On/Off (0x00 Off/0x01 On)	0x03/0x06/0x10	R/W
+02	D23887	Whole Register	D23887	All-Channel Group Control - Set Temperature (16-31°C)	0x03/0x06/0x10	R/W
+03	D23888	Whole Register	D23888	All-Channel Group Control - Mode	0x03/0x06/0x10	R/W

Offset	Register Address	Byte/Bit	Field ID	Function Description	Func-tion Code	R/W
				• 0x01 Cool • 0x02 Dry • 0x04 Fan • 0x08 Heat		
+04	D23889	Whole Register	D23889	All-Channel Group Control - Fan Speed • 0x00 Auto • 0x01 High • 0x02 Medium • 0x03 Medi-um-High • 0x04 Low • 0x05 Medi-um-Low • 0x06 Breeze • 0x07 Turbo	0x03/0x06/ 0x10	R/W
+05	D23890	Whole Register	D23890	All-Channel Group Control - Air Direction	0x03/0x06/ 0x10	R/W
+06	D23891	Whole Register	D23891	All-Channel Group Control - Temp Lock - Lower Limit (0=unset, 16-31°C)	0x03/0x06/ 0x10	R/W
+07	D23892	Whole Register	D23892	All-Channel Group Control - Temp Lock - Upper Limit (0=unset, 16-31°C)	0x03/0x06/ 0x10	R/W

Example: Turn on all indoor units across all channels and Set 25°C.

Direction	Code
Request	01 10 5D 4E 00 02 04 00 01 00 19 42 8A
Response	01 10 5D 4E 00 02 32 73

System Settings

Offset	Register Address	Byte/Bit	Field ID	Function Description	Function Code	R/W
+000	D65000	B15-B8 (High)	D65000_H	Set Master Time - Year (increment from 2000, two digits only)	0x10	W
+000	D65000	B7-B0 (Low)	D65000_L	Set Master Time - Month	0x10	W
+001	D65001	B15-B8 (High)	D65001_H	Set Master Time - Day	0x10	W
+001	D65001	B7-B0 (Low)	D65001_L	Set Master Time - Hour	0x10	W
+002	D65002	B15-B8 (High)	D65002_H	Set Master Time - Minute	0x10	W
+002	D65002	B7-B0 (Low)	D65002_L	Set Master Time - Second	0x10	W
+003	D65003	Whole Register	D65003	Reserved	-	-
+005	D65005	Whole Register	D65005	Device Reboot • 0x0080 Master Reboot • 0x0001-0x0016 Channel Reboot • 0x0040 All Channels Reboot	0x10	W

Note:

1. Each time the system is powered up, the host computer must send a time synchronisation command. The controller will only commence normal operation once the system has successfully synchronised the time.
2. It is recommended that the host computer issue a system time synchronisation command every few hours.

Example 1: Set the controller time to October 1, 2024, 10:08:00.

Direction	Code
Request	01 10 FD E8 00 03 06 18 0A 01 0A 08 00 E6 74
Response	01 10 FD E8 00 03 31 90

Example 2: Reboot the all channels.

Direction	Code
Request	01 10 FD ED 00 01 02 00 40 9C 12
Response	01 10 FD ED 00 01 A0 50

Chapter 7. Appendix

This section provides additional supplementary information.

API Inventory

Type	Name	Function	Recommend
Controller Initialization	online	Heartbeat frame	Required
Controller Initialization	general_read	Query general information	Required
Controller Initialization	general_write	Configure general information	Required
Controller Initialization	node_online	Query air conditioner channel information	Required
Controller Initialization	property_read	Query air conditioner information	Required
AC State Management	status_read	Read air conditioner status	Required
AC State Management	control_write	Configure air conditioner parameters	Required
AC State Management	device_report_config	Configure periodic air conditioner status reporting	Required
AC State Management	device_report_config_read	Query periodic air conditioner status reporting configuration	Required
AC State Management	device_update_config	Configure automatic air conditioner status reporting	Required
AC State Management	device_update_config_read	Query automatic reporting of air conditioner status changes	Required
Extended Function	lock_write	Configure air conditioner parameter locks	Optional

Type	Name	Function	Recommend
Extended Function	lock_status_read	Read air conditioner lock status	Optional
Extended Function	lock_report_config	Configure periodic air conditioner lock status reporting	Optional
Extended Function	lock_report_config_read	Query periodic air conditioner lock status reporting configuration	Optional
Extended Function	lock_update_config	Configure automatic reporting of lock status changes	Optional
Extended Function	lock_update_config_read	Query automatic reporting of air conditioner lock status changes	Optional
Extended Function	schedule_write	Configure air conditioner schedules	Optional
Extended Function	schedule_read	Query air conditioner schedule information	Optional
Extended Function	schedule_delete	Delete air conditioner schedule information	Optional
Extended Function	energy_read（runtime）	Query operating time	Optional
Extended Function	energy_read（shareEquivalents）	Query air conditioner equivalent data	Optional
Extended Function	energy_read	Query operation records	Optional
Extended Function	peak_shaving_read	Query peak-shaving limits	Optional
Extended Function	peak_shaving_write	Configure peak-shaving limits	Optional
Extended Function	electric_relay_read	Query three-way relay status	Optional

Type	Name	Function	Recommend
Extended Function	electric_relay_write	Configure three-way relay status	Optional
Branch Selector	iuparam_read	Query indoor unit operating parameters	Optional
Outdoor Unit	ou_merge_param	Query outdoor unit operating parameters	Optional
Extended Function	start_regulate	Start load control	Optional
Extended Function	end_regulate	End load control	Optional
Extended Function	lock_write_batch	Batch configure air conditioner lock status	Optional

Default Parameter Values

Interface	Parameter	Default	Description
general_write	concentrator_id	1	Required. Smart controller index, corresponding to the first segment of the four-part AC address.
general_write	watch	0	Optional. Enables monitoring of air conditioners running continuously for an extended period. `0` = Disabled, `1` = Enabled.
general_write	watcht	300	Optional. If the continuous operating time exceeds this value (minutes), the smart controller sends a shutdown command to the corresponding air conditioner.
device_report_config	act	0	Required. Enables periodic automatic reporting of AC status. `0` = Disabled, `1` = Enabled.
device_report_config	interval	300	Optional. Interval for periodic AC status reporting, in seconds.

Interface	Parameter	Default	Description
device_update_config	auto	1	Required. Enables automatic reporting when AC status changes. `0` = Disabled, `1` = Enabled.
lock_write	onOffLock	0	Optional. Locks the power on/off status.
lock_write	modeLock	0	Optional. Locks the operating mode.
lock_write	tempLock	0	Optional. Locks the set temperature.
lock_write	fanSpeedLock	0	Optional. Locks the fan speed.
lock_write	fanDirectLock	0	Optional. Locks the airflow direction.
lock_report_config	act	0	Required. Enables periodic automatic reporting of AC lock status. `0` = Disabled, `1` = Enabled.
lock_report_config	interval	300	Optional. Interval for periodic AC lock status reporting, in seconds.
lock_report_config	auto	1	Required. Enables automatic reporting when AC lock status changes. `0` = Disabled, `1` = Enabled.
peak_shaving_write	state	0	Optional, depending on the number of configured channels. Enables peak shaving for Channel 1. `0` = Disabled, `1` = Enabled.
peak_shaving_write	state2	0	Optional, depending on the number of configured channels. Enables peak shaving for Channel 2. `0` = Disabled, `1` = Enabled.
peak_shaving_write	state3	0	Optional, depending on the number of configured channels. Enables peak shaving for Channel 3. `0` = Disabled, `1` = Enabled.
peak_shaving_write	state4	0	Optional, depending on the number of configured channels. Enables peak shav-

Interface	Parameter	Default	Description
			ing for Channel 4. `0` = Disabled, `1` = Enabled.
electric_relay_write	state	0	Optional, depending on the number of configured channels. Controls the relay for Channel 1. `0` = Off, `1` = On.
electric_relay_write	state2	0	Optional, depending on the number of configured channels. Controls the relay for Channel 2. `0` = Off, `1` = On.
electric_relay_write	state3	0	Optional, depending on the number of configured channels. Controls the relay for Channel 3. `0` = Off, `1` = On.
electric_relay_write	state4	0	Optional, depending on the number of configured channels. Controls the relay for Channel 4. `0` = Off, `1` = On.

ErrorCode

Field	Description
0	Normal
1	General error
2	Invalid JSON structure
3	Invalid JSON body
4	Invalid date
5	Storage error
6	Hardware error
7	Invalid address field
8	Mode conflict
9	Unsupported
10	Data not found

Field	Description
11	Authentication failed

AC Brand Codes

Value	Brand
1	HITACHI
2	DAIKIN
3	TOSHIBA
4	MITSUBISHI_H
5	MITSUBISHI_E
6	GREE
7	HISENSE
8	MEDIA
9	HAIER
10	LG
13	SAMSUNG
14	AUX
15	PANASONIC
16	YORK
19	GREE4
21	MCQUAY
24	TCL
25	CHIGO
26	TICA
35	YORK_T8600
36	COOLFAN
37	QDYORK

Value	Brand
38	FUJITSU
39	SAMSUNG_NotNASA_BMS
40	SAMSUNG_NASA_R1R
41	GREE_FG
42	LUKO
101	EMERSON_XMUI
102	CH_MCQUAY
103	TRANE
104	CH_CARRIER
255	EMULATOR