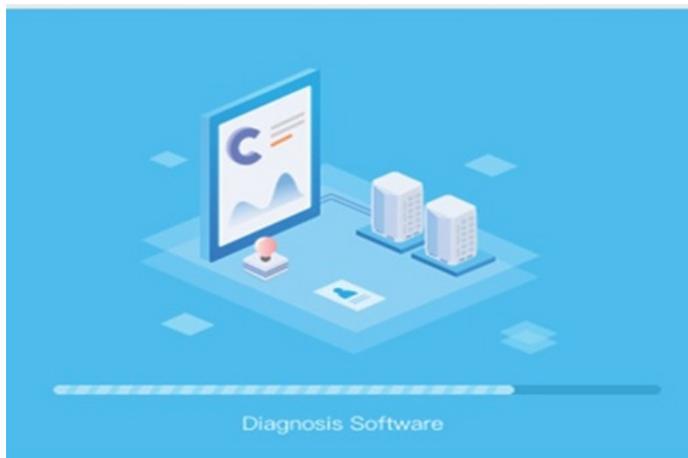


VRF DIAGNOSIS SOFTWARE (MDT)

Operation Manual



Model Numbers

MSW-DIACS

IMPORTANT NOTE:

Please read this manual carefully before installing or operating your air conditioning unit.



ActronAir

- This manual gives detailed description of the precautions that should be brought to your attention during operation.
- In order to ensure correct service of the diagnosis software please read this manual carefully before using the unit.
- For convenience of future reference, keep this manual after reading it.

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1 SOFTWARE RUNNING ENVIRONMENT AND INSTALLATION

1.1 SOFTWARE RUNNING ENVIRONMENT

Operating system: WINDOWS7 or above.

Screen resolution: 1366*768 or more.

Computer settings: The computer DPI must be adjusted to 100% to ensure that the software is displayed normally.

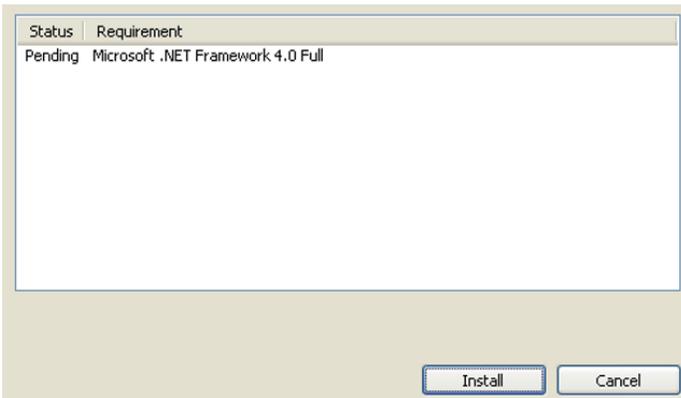
1.2 INSTALLATION PROCEDURE

1.2.1 Before Installation

Before you install diagnosis software in Windows system, you may need to install "Microsoft .NET Framework 4.7.2" first.



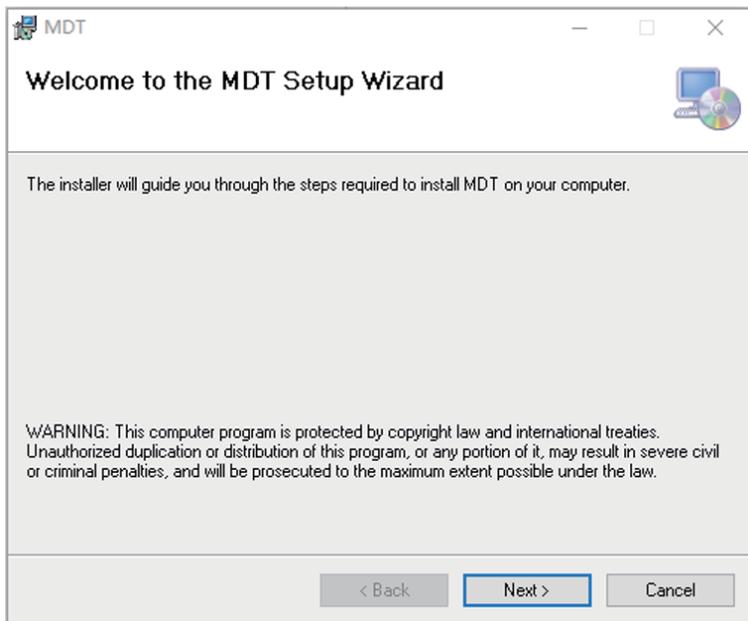
Right click **InstallSetup**, and select "Run as administrator". You will receive a prompt if "Microsoft .NET Framework 4.7.2" is missing. Click "Install" to automatically go to the Microsoft's official website to download and install Microsoft. Please ensure that the computer is connected to the Internet at all times. You can also go to Microsoft's official website to download and install the "Microsoft .NET Framework 4.7.2".



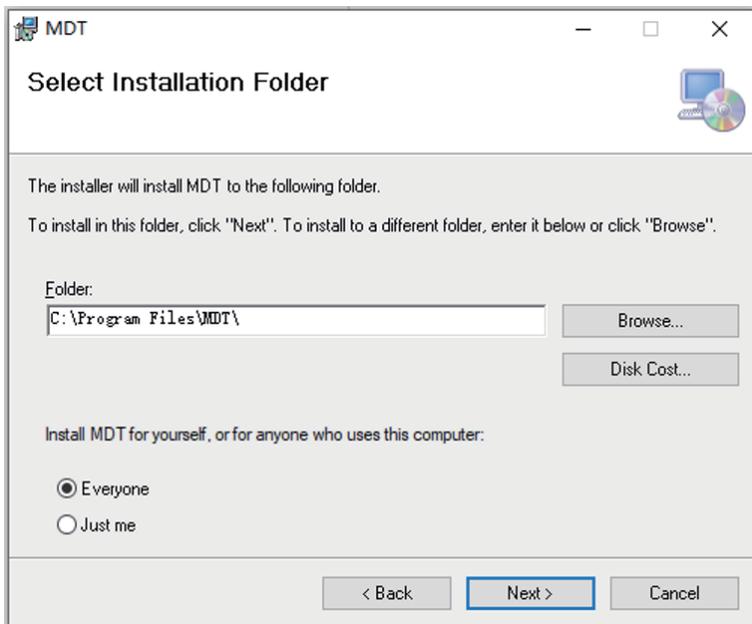
1.2.2 Installation



Right click **InstallSetup**, and select "Run as administrator". Wait until the following window appears, and click "Next".



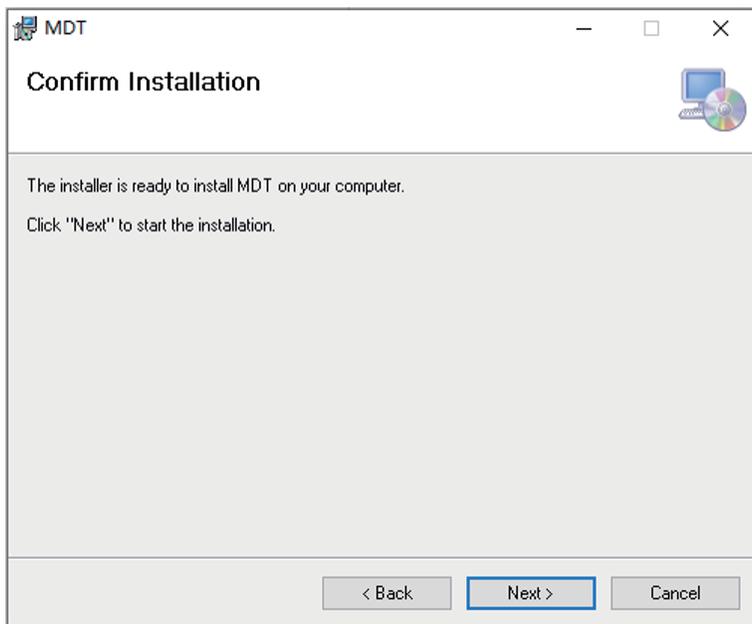
Click "Next" to enter the installation wizard of selecting a folder.



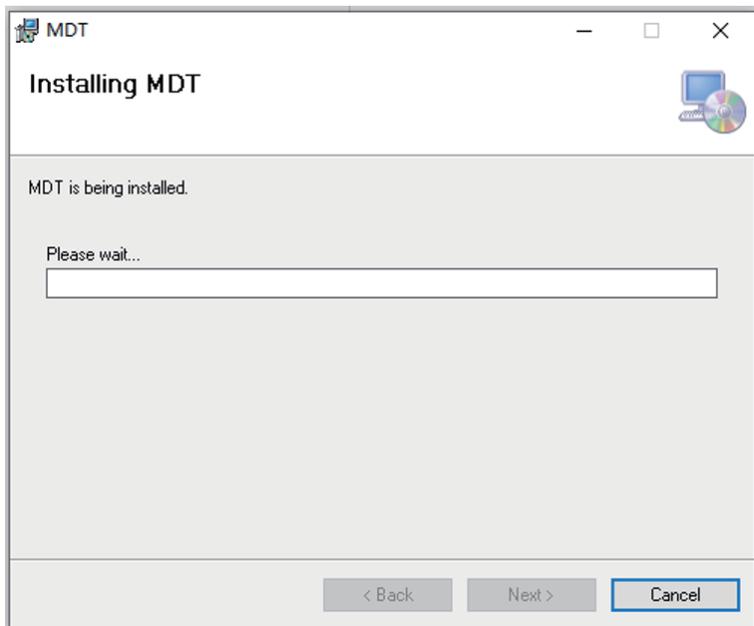
Select the installation folder and user of the software, then click “Next”.

 **NOTE**

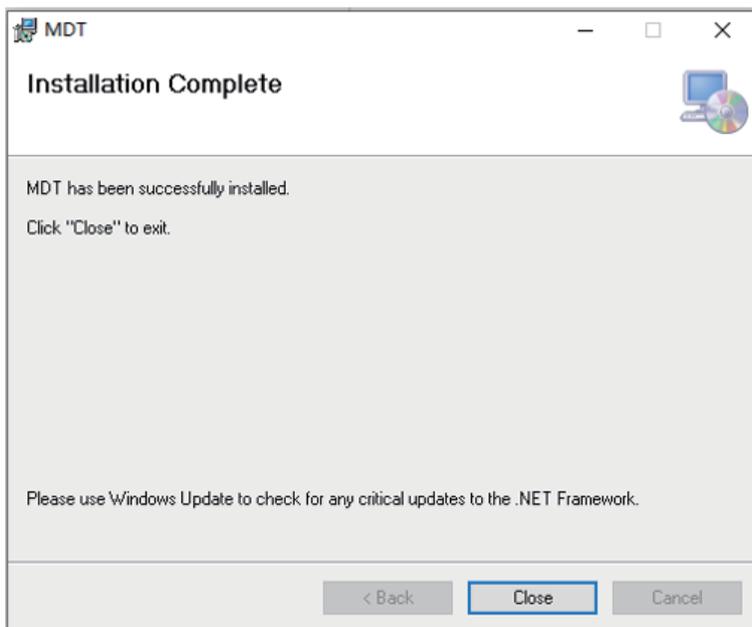
To ensure normal running of the software, you must install it to a non-system disk. Otherwise, you may encounter errors like exceptions due to system permissions. You need administrator privileges to install and run the software. Contact your IT Department if any issues occur with installation



Click "Next" and wait until the MDT is installed.



Click "Close" when the following window appears.

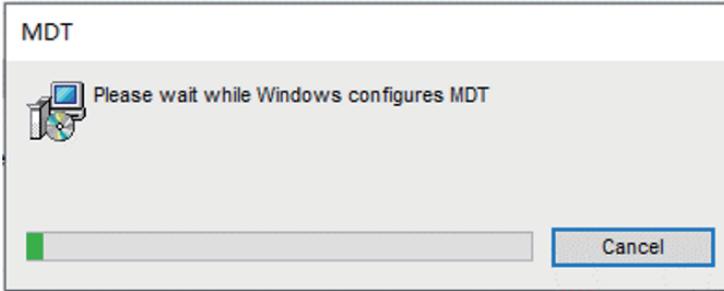


1.2.3 Uninstallation

Choose "Control Panel" > "Programs" > "MDT" > "Uninstall", then click on confirm.

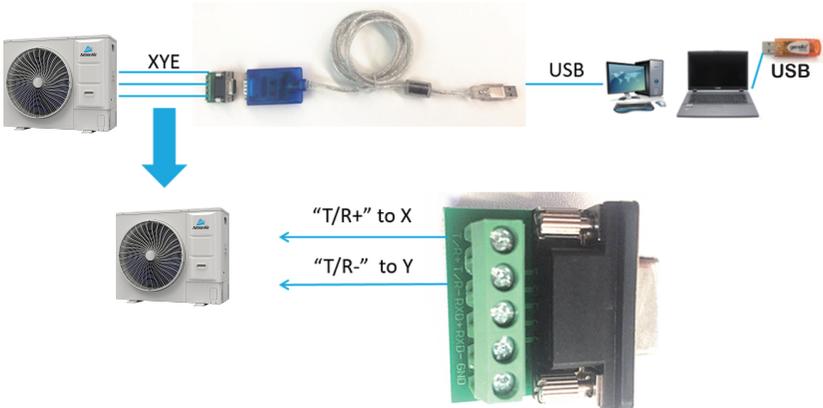


Wait until the program has been uninstalled.



Once the MDT program has been uninstalled, delete the installation folder manually. If you need the data that has been used by the program, save the corresponding database file. The database storage path defaults to the installation path\Database folder.

1.2.4 Connections



Adopt the USB serial port converter to connect the XYE port to implement connection between the software and the devices, where X connects to RS485A, Y connects to RS485B.

NOTE

Please refer to RS485 serial port to USB mode for USB serial port converter, which customers need to purchase it separately.

2 USING THE MDT

2.1 RUNNING THE MDT



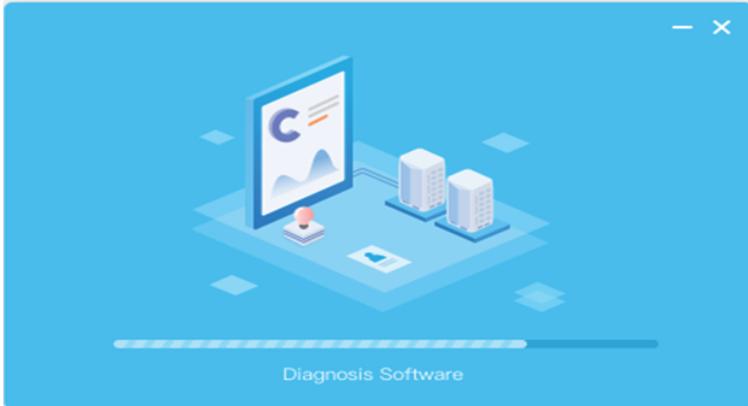
After the MDT is installed, a shortcut  is created on the desktop. You can also execute the corresponding "MDT.exe" program directly from the installation path.

NOTE

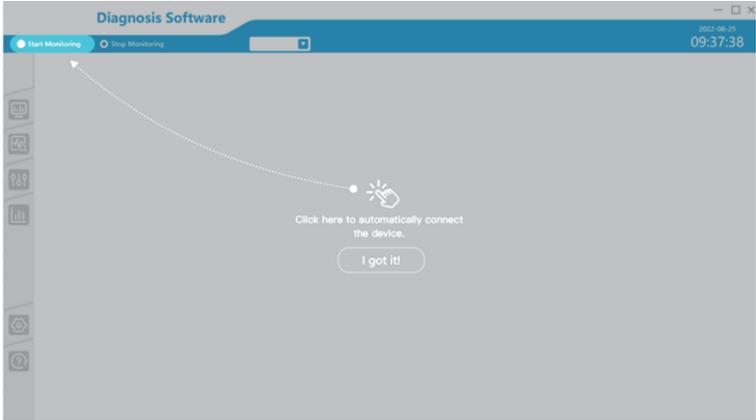
- This version of the diagnosis software currently only supports V8 system.
- MDT starts to monitor the system parameters only when the system operation is stable. Otherwise, the equipment search may be incomplete or wrong. It is recommended that you start the MDT fifteen minutes after the refrigerant system is powered on.

2.2 LOGIN

Login with dongle is required. Before login, you need to insert a dongle. The login interface is as follows.

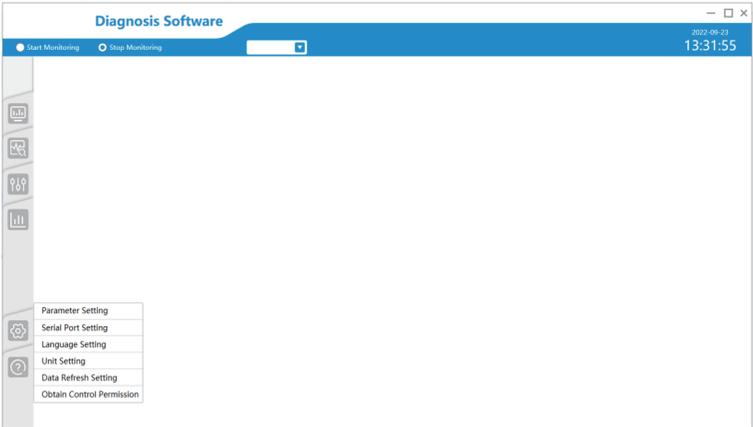


After login, enter the following page. The user should click the "start monitoring" button to start monitoring the device.



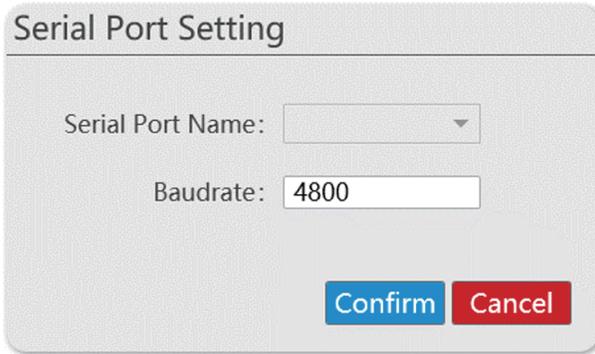
2.2.1 System Setting

When clicking the system setting icon , menu list of system setting will be displayed as follows, including parameter settings, communication settings, language settings, unit settings, data refresh settings, get control permissions and other function menu settings.



2.2.1.1 Serial Port Setting

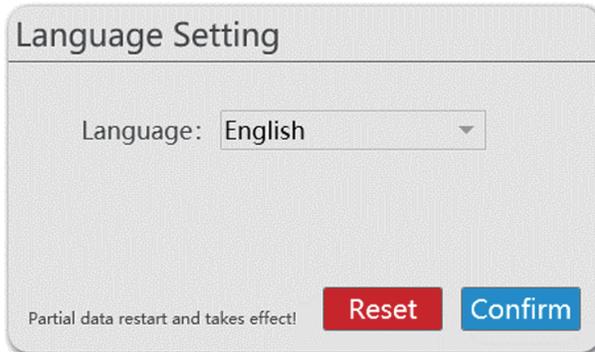
In the system settings menu, click "Serial Port Setting" to pop up the serial port settings window, and name the connected serial port. The baud rate is 4800 by default and does not need to be changed.



The image shows a dialog box titled "Serial Port Setting". It contains two input fields: "Serial Port Name:" with a dropdown arrow, and "Baudrate:" with a text box containing "4800". At the bottom right, there are two buttons: "Confirm" (blue) and "Cancel" (red).

2.2.1.2 Language Setting

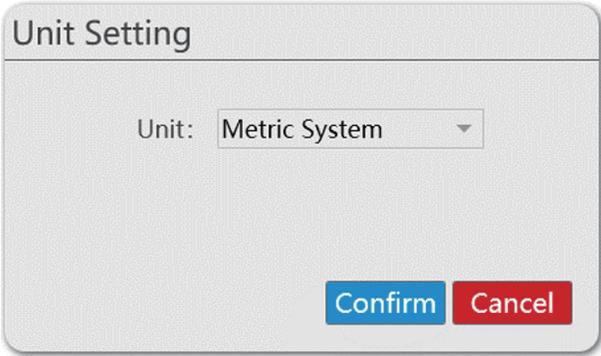
In the system setting function menu, click "Language Setting" to pop up the language setting window. It should be noted that restart is needed for some data displays after language switching.



The image shows a dialog box titled "Language Setting". It contains one input field: "Language:" with a dropdown menu showing "English". At the bottom left, there is a warning message: "Partial data restart and takes effect!". At the bottom right, there are two buttons: "Reset" (red) and "Confirm" (blue).

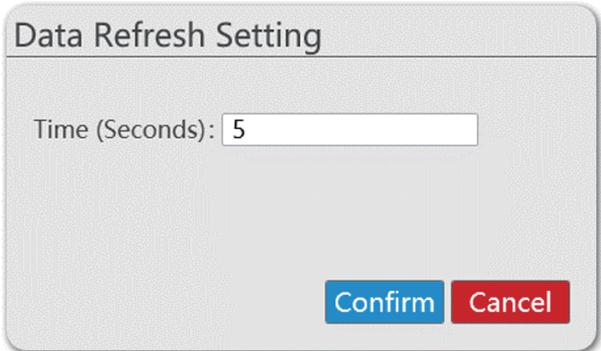
2.2.1.3 Unit Setting

In the system setting function menu, click "Unit Setting" to pop up the unit setting window. Currently, metric and English system switching is supported. The default unit is metric.



2.2.1.4 Data Refresh Setting

In the system setting function menu, click "Data Refresh Setting" to pop up the data refresh rate setting window. The default refresh rate is 5 seconds.



2.2.1.5 Parameter Setting

In the system setting function menu, click "Parameter Setting" to pop up the setting window, set the system, indoor unit, outdoor unit and other device parameter properties to be displayed. Then parameter list will dynamically display the corresponding selected parameter attributes name and parameter values.

System Parameter	ODU Parameter	IDU Parameter
Parameter Name		Is Visible
Run Mode		<input checked="" type="checkbox"/>
Special Mode		<input checked="" type="checkbox"/>
Special Mode Steps		<input checked="" type="checkbox"/>
Special Mode Type		<input checked="" type="checkbox"/>
ODU No. 0 Is Online		<input type="checkbox"/>
ODU No. 1 Is Online		<input type="checkbox"/>
ODU No. 2 Is Online		<input type="checkbox"/>
ODU No. 3 Is Online		<input type="checkbox"/>
System Failure		<input checked="" type="checkbox"/>
System Heat Exchanger Status		<input checked="" type="checkbox"/>
Actual of No. Unit		<input checked="" type="checkbox"/>
Mode Priority Enable Sign		<input checked="" type="checkbox"/>
Mode Prohibit		<input checked="" type="checkbox"/>
Mode Priority		<input checked="" type="checkbox"/>
Fallback Requirements Are Not Met		<input type="checkbox"/>
Clear Current Fault		<input type="checkbox"/>
IDU Shows the ODU Failure		<input type="checkbox"/>
Communication Type		<input checked="" type="checkbox"/>
Capability Sign		<input checked="" type="checkbox"/>
Forced Start-Stop Sign		<input type="checkbox"/>
Over High Voltage		<input checked="" type="checkbox"/>

2.2.1.6 Obtain Control Permission

In the system setting function menu, click "Obtain Control Permission" to pop up the setting window, then enter the random verification code, and get the corresponding advanced control and developer control function authority.

Obtain Control Permission

Verification Code:

Confirm

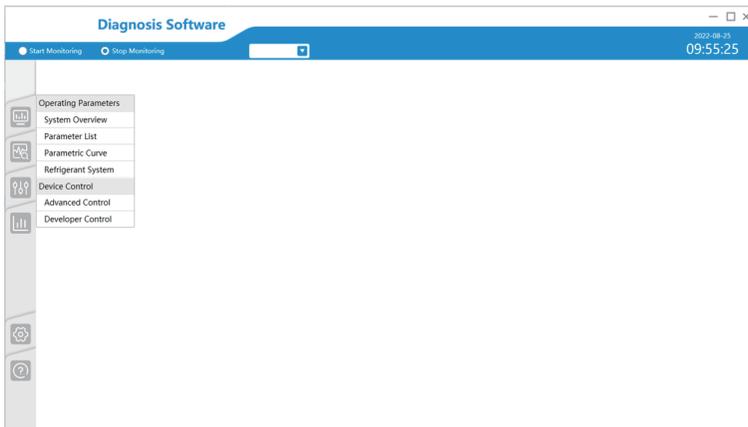
Cancel

NOTE

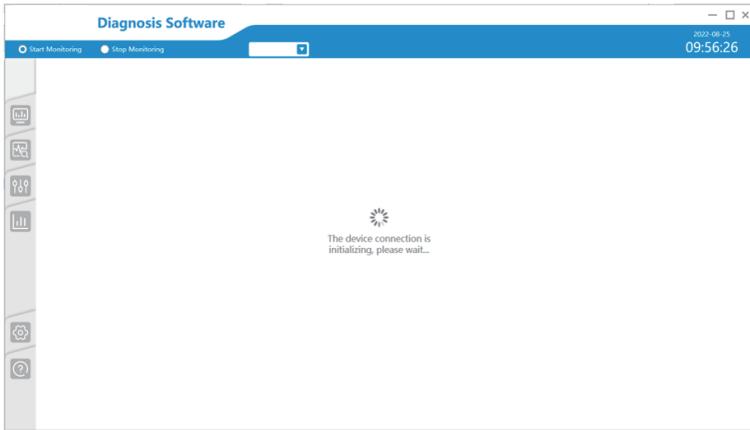
The random verification code should be provided by the market technical personnel separately.

2.2.2 Device Monitor

When clicking on the “Device Monitor” button you can view operating parameters and device control menu items on the following interface. The operating parameter menu includes function menus such as system overview, parameter list, parameter curve, refrigerant system, etc., and device control includes advanced control and developer controls and other function menus.



Once you click “Start Monitoring”, you will enter the interface as shown below.



During the initialization of the connected device, the software will automatically search for the information of the refrigerant system. If the specified serial port is not set for communication, the software will automatically poll all the serial ports until it finds a serial port that can be connected to the device. If there is a designated serial port to connect to the device for communication, the software will directly connect to the device through the designated serial port.

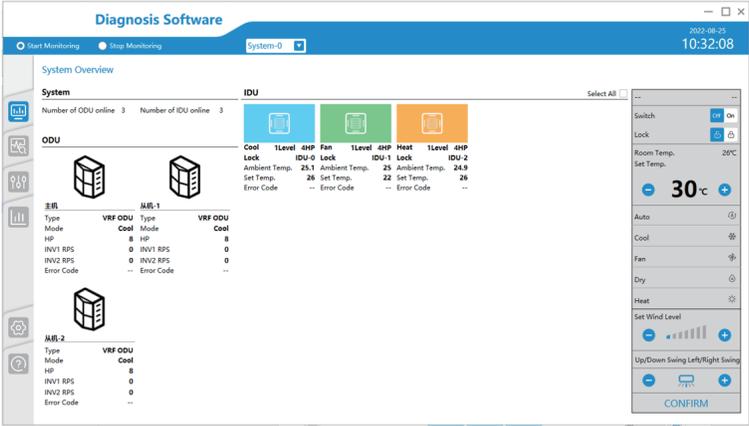
If the serial port cannot be connected normally, or the device protocol is not yet supported (currently only V8 protocol is supported), the following prompt will appear to guide the user to set the serial port communication, and inform the connection device failure. The interface is as follows.



If more than one refrigerant system is found, the following window will pop up for you to select one of the refrigerant systems, and the diagnosis software will only monitor one refrigerant system. After selecting the monitoring refrigerant system, user now can also switch the refrigerant system on the monitoring menu. If not selected, the first refrigerant system will be used for monitoring by default.



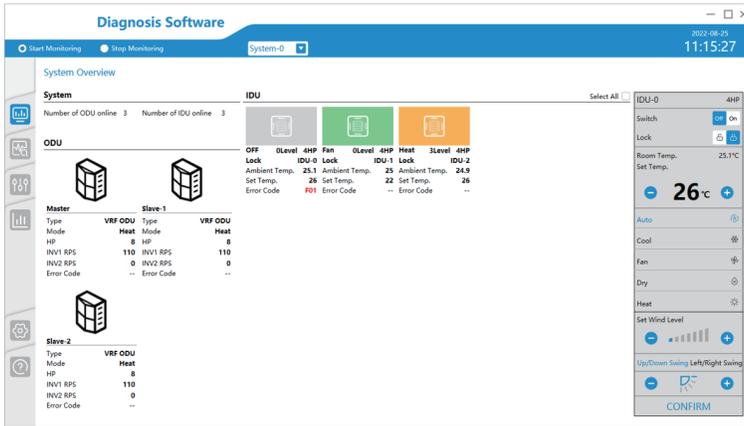
After selecting the system, you can query the quantity of indoor units and outdoor units the selected refrigerant system has. When the software works normally, it will stay on the system overview menu of the main interface, the icon is highlighted with the blue background and the device list is displayed. The interface is as follows.



2.2.2.1 Operating Parameters

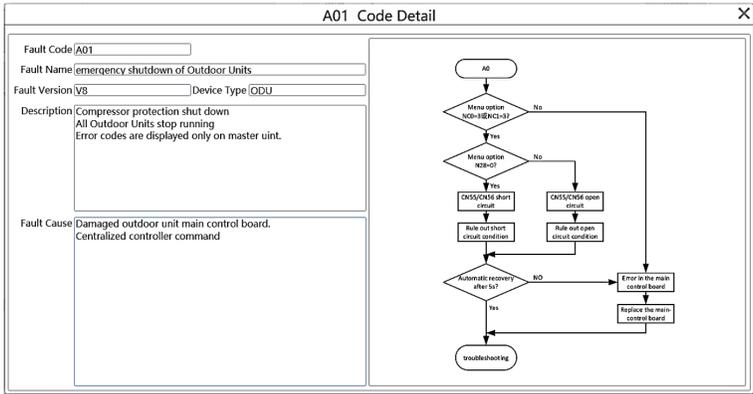
2.2.2.1.1 System Overview

After initializing and searching for the device, the main interface of the system overview is displayed by default, including the connected device status of the current system (number of online devices), the list of indoor and outdoor units, and the control panel on the right side of the indoor unit. The number of the currently monitored system is also displayed on the above menu. When there are multiple systems, user can also select another system to monitor.



On the right of the system overview interface, there is a simple indoor unit control panel which can set functions such as on/off, temperature, mode, wind level, swing, and lock for the selected indoor unit. The "locked" status on the right panel means remote control and the wired remote are both locked. But as either of two is locked, status shown on the device card will display as locked. When selecting a device, click the "Select All button in the upper right corner of the indoor unit list to select all devices, or click the device card to select and unselect. When selected, the icon "" will appear to indicate the selection is implemented, realizing flexible device control. When only one device is selected, the right control panel will synchronize the states of the device to the control panel. When multiple selections are made, the first device state is displayed by default.

When the system fails, the error code marked in red will appear on the device card. User can click on the error code to pop up the code detail in the following window, and click the "X" button in the upper right corner to close the code detail.



NOTE

For certain models, the error code shown on the MDT may not be consistent with the error code on the unit. When this happens, refer to the error code on the unit itself. When there is no error code, it is displayed as "--" on the diagnosis software.

Parameters of Outdoor Units :

Type	Outdoor unit
Mode	The operation mode of the outdoor unit: mainly includes shutdown, cooling, heating, fan and other modes.
HP	Outdoor unit HP
Compressor 1 frequency	ODU Compressor 1 frequency
Compressor 2 frequency	ODU Compressor 2 frequency
Error ode	Outdoor unit error code

Parameters of Indoor Units :

	Left	Middle	Right
Line 1	Mode	Wind Level	HP
Line 2	Remote control locked, wired control locked. "Lock" when either the remote or wired controller is locked. Otherwise, it is "Unlock".	Blank	IDU Address
Line 3	Ambient Temperature		
Line 4	Set Temperature		
Line 5	Error Code		

The image of the indoor unit of various model type are different as shown below

Wall mounted type Abbr: WALL	
Medium duct type Abbr: M-DUCT	
Slim duct - low pressure duct type Abbr: L-DUCT	
Duct type Abbr: VERT	
High static pressure duct type Abbr: H-DUCT	
Compact 4 way cassette Abbr: COMPACT	
Ceiling & Floor Abbr: C&F	
Floor Standing (Concealed) Abbr: FS	
Fresh air processing unit Abbr: FAPU	
Heat Reclaim Ventilation Abbr: HRV	

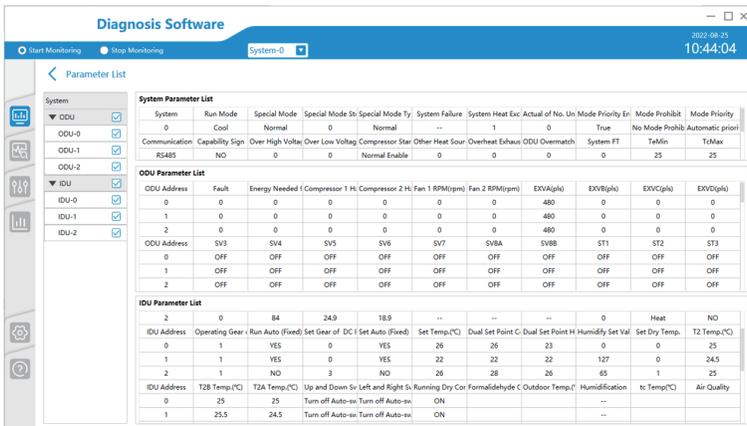
NOTE

The models are distinguished according to the protocol. If the actual packet is not within the valid range, it will be displayed as icon of the normal size 4 way cassette by default. The old type indoor unit will not be recognized, it will be displayed as icon of the normal size 4 way cassette by default.

2.2.2.1.2 Parameter List

On click the device monitoring icon  , click the "Parameter List" button to enter the parameter list interface as follows: including the navigation title "parameter list", the back arrow "<" beside the title which allows user to return to the system overview page; The left side is the list of online indoor and outdoor units, and the right side includes the system parameter list, the outdoor unit parameter list, and the indoor unit parameter list. The system parameter list is always displayed by default. Only when the outdoor unit is selected, the parameter list will display the corresponding indoor and outdoor unit parameter list, enabling flexible viewing of device parameters.

The following is the parameter display of the default settings of the system. If more parameters need to be viewed, user can select the parameter properties to be viewed by parameter setting function in system setting. For detailed operations, please refer to the parameter setting function in the system settings.



System	Run Mode	Special Mode	Special Mode St	Special Mode Ty	System Failure	System Heat Exc	Actual of No. Un	Mode Priority En	Mode Prohibit	Mode Priority
0	Cool	Normal	0	Normal	1	0	True	No Mode Prohibit	Automatic priori	
RS485	Communication	Capability Sign	Over High Voltage	Over Low Voltage	Compressor Star	Other Heat Sour	Overheat Exhaust	ODU Overmatch	System ST	TalkEn
0	NO	0	0	Normal	Enable	0	0	0	0	25

ODU Address	Fault	Energy Needed	Compressor 1 H	Compressor 2 H	Fan 1 RPM(rpm)	Fan 2 RPM(rpm)	EXVA(g/h)	EXVB(g/h)	EXVC(g/h)	EXVD(g/h)
0	0	0	0	0	0	0	480	0	0	0
1	0	0	0	0	0	0	480	0	0	0
2	0	0	0	0	0	0	480	0	0	0
ODU Address	SV3	SV4	SV5	SV6	SV7	SV8A	SV8B	ST1	ST2	ST3
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

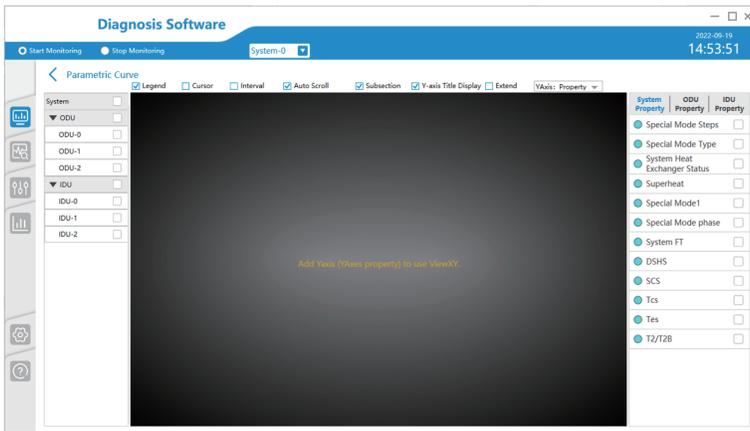
IDU Address	Operating Gear	Run Auto (Fixed)	Set Gear of DC F	Set Auto (Fixed)	Set Temp.(°C)	Dual Set Point C	Dual Set Point H	Humidity Set Val	Set Dry Temp.	T2 Temp.(°C)
0	1	YES	0	YES	26	26	23	0	0	25
1	1	YES	0	YES	22	22	22	127	0	24.5
2	1	NO	3	NO	26	28	26	65	1	25
IDU Address	T2B Temp.(°C)	T2A Temp.(°C)	Up and Down Sv	Left and Right Sv	Running Dry Coi	Formaldehyde C	Outdoor Temp.(°C)	Humidification	tc Temp(°C)	Air Quality
0	25	25	Turn off Auto-sv	Turn off Auto-sv	ON	---	---	---	---	---
1	25.5	24.5	Turn off Auto-sv	Turn off Auto-sv	ON	---	---	---	---	---

NOTE

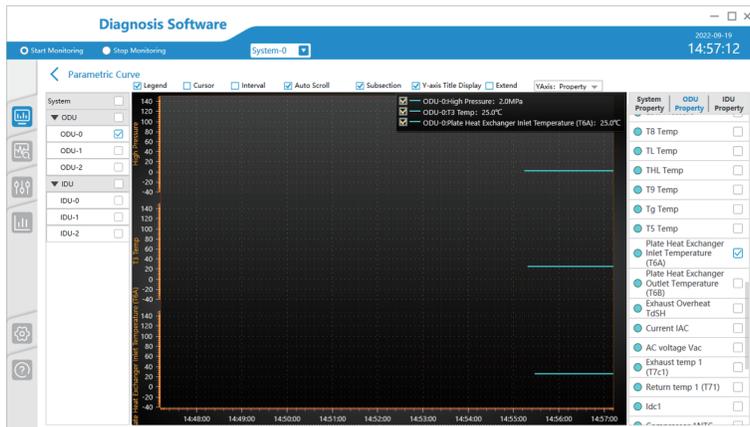
If the parameter is not reported, or the reported value is invalid, "--" will be displayed by default, and when the mouse is positioned on the parameter, the complete content of the current parameter will be displayed in a bubble form.

2.2.2.1.3 Parameter Curve

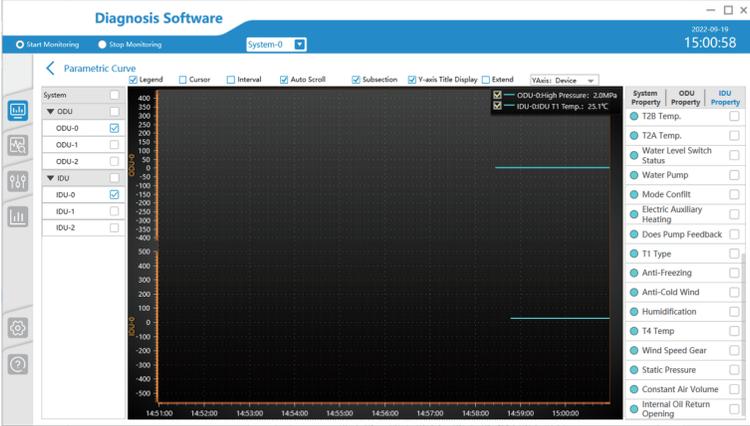
On click the icon  of the device monitoring, you can click the "Parameter Curve" button to enter the parameter curve function page as follows. The page includes the navigation title "parameter curve", and the navigation title back arrow " ".  User can click this arrow to return to the system overview home page. The left side of the page shows the device that are online; the middle is the curve part, including the legend, cursor, interval, automatic scroll, segment, Y-axis title display, expansion, Y-axis properties and other function buttons. Legend, automatic scrolling, segmentation, Y-axis title display, Y-axis attributes and other functions are selected by default where segmentation refers to whether the Y-axis is displayed in a segmented manner or a separate Y-axis; on the right is attributes list including system attributes, outdoor unit attributes and indoor unit attributes.



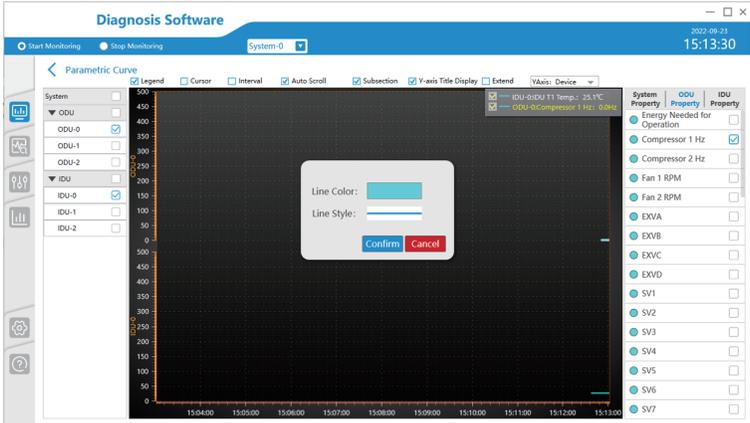
- When the device attributes is used as the Y-axis division, the number of segmented Y-axes will appear as many as the attributes is selected. This is the default method. After the device and device attributes data are selected, the interface is shown as follows.



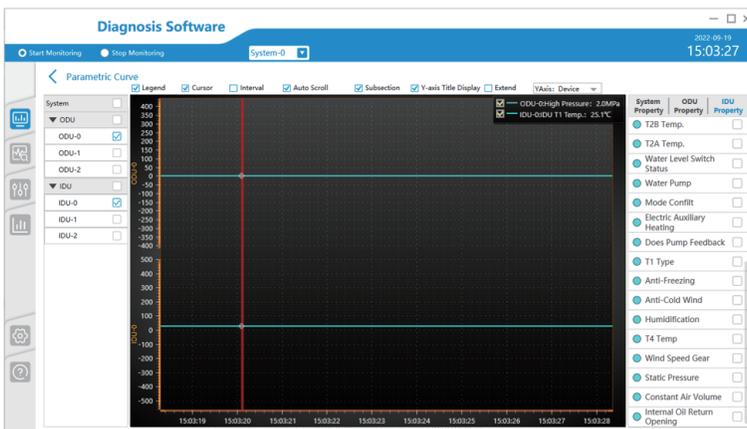
- When the device is used as the Y-axis division, the number of segmented Y-axes will appear as many as the device is selected. Then select the device attributes and it will appear on the corresponding device. The interface is as follows.



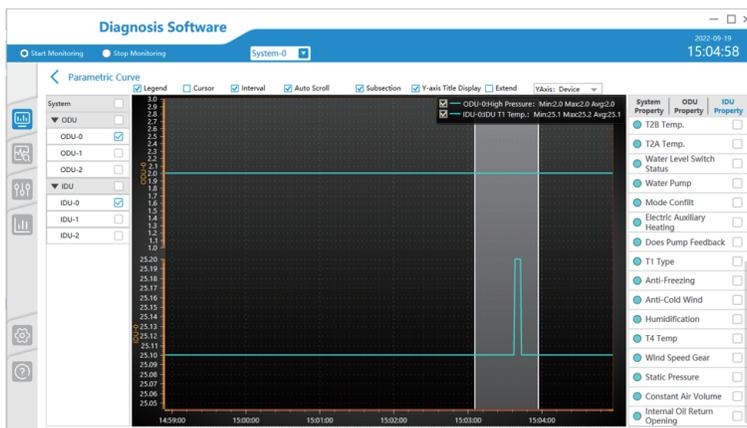
- When the mouse is positioned on the curve, rolling the mouse can zoom in and out of the X axis and Y axis. The curves and legends shown above can also be selected by double clicking to set the following curve color and curve style.



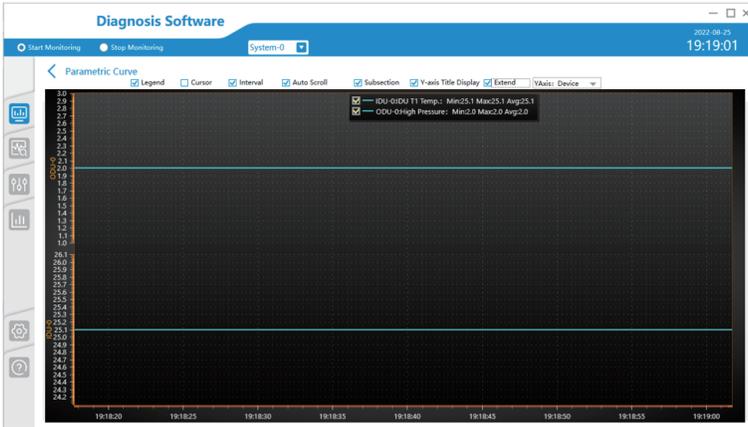
- When the mouse is positioned at both ends of the Y-axis, the up and down direction icon "↕" appears, and the scaling of the properties of the Y-axis can be zoom in and zoom out. When the mouse is positioned on the left side of the Y-axis, and the gesture icon "👉" appears, the scrolling of the curve and the Y-axis scale can be realized. The same is true for the X-axis, but this time the direction icon changes to the left and right direction "↔", which can realize the change of time.
- When the mouse is positioned on the color of the attributes list on the right, it is also possible to set the current attributes color. The curve color, attributes color and curve style are only valid in the current session, and the default settings will be restored after the software is closed.
- When the cursor is checked, a red vertical line appears, and the cursor can be dragged by the mouse. When the cursor is released, the value of the parameter where the cursor is currently displayed is showed on the legend.



- When the upper range is checked, a gray rectangular area (double cursor function) appears. Drag it to the left and right, and the legend will automatically calculate and display the maximum, minimum, average and other parameters in the current area.



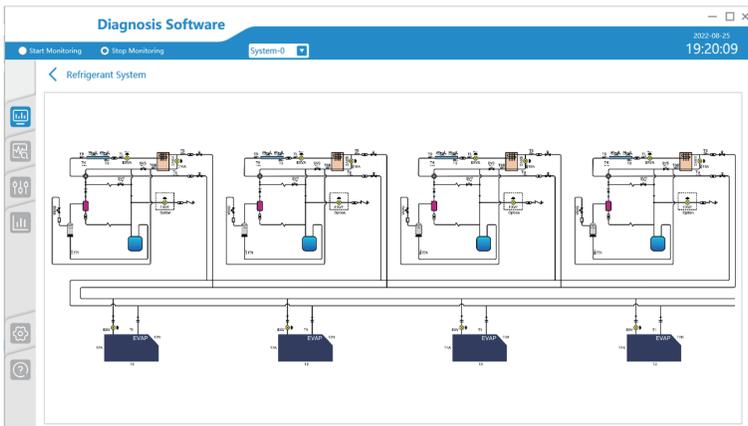
- When you check Expand, the display of the whole curve will be enlarged.



2.2.2.1.4 Refrigerant System

After clicking the device monitoring icon , you can click the "Refrigerant System" menu to enter the refrigerant system function page as shown below.

- When the mouse is positioned on the system diagram, user can scroll the mouse to zoom in and out of the system diagram. Finally, you can press the "ESC" key on the keyboard to reset to the initial state.



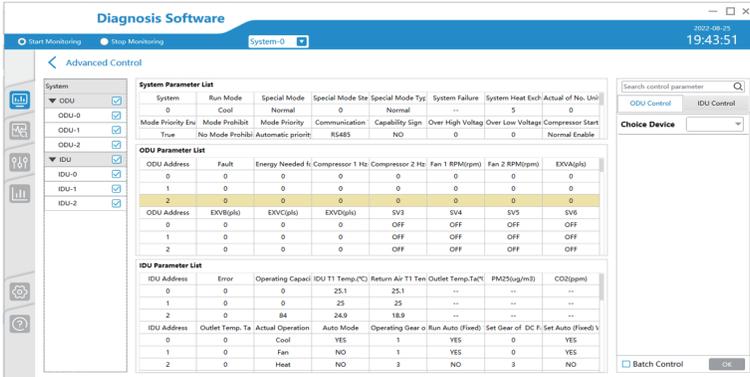
NOTE

The refrigerant system diagram does not show the specific parameters of indoor and outdoor units, but only the operation diagram of outdoor units. The refrigerant system diagram of the outdoor unit only shows the basic operation diagram, and changes of the actual valve body status are not shown in the refrigerant system diagram.

2.2.2.2 Device Control

2.2.2.2.1 Advanced Control

After clicking the device monitoring function icon , click the "Advanced Control" menu to enter the advanced control function as follows. Select "Outdoor unit control parameters", and the parameter control list of the outdoor unit is displayed below; Select "Control parameters of indoor unit", and the parameter control list of indoor unit is displayed below. There is also a parameter search box above for fuzzy search of control parameters.



The screenshot shows the "Advanced Control" interface in the "Diagnosis Software". The "System" is set to "System-0". The "Choice Device" dropdown is set to "IDU Control". The "System Parameter List" table is as follows:

System	Run Mode	Special Mode	Special Mode Sta	Special Mode Typ	System Failure	System Heat Exch	Actual of No. Use
0	Cool	Normal	0	Normal	--	5	0
Mode Priority En	Mode Prohibit	Mode Priority	Communication	Capability Sign	Over High Voltage	Over Low Voltage	Compressor Start
True	No Mode Prohibit	Automatic priority	RS485	NO	NO	0	Normal Enable

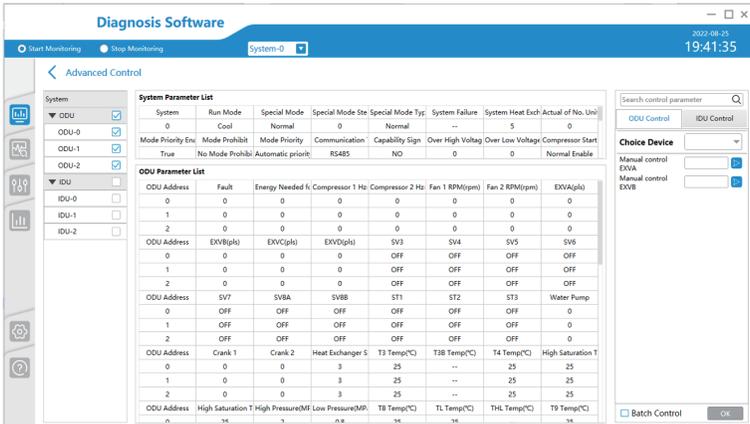
The "ODU Parameter List" table is as follows:

ODU Address	Fault	Energy Needed f	Compressor 1 Hz	Compressor 2 Hz	Fan 1 RPM(rpm)	Fan 2 RPM(rpm)	EXV(A)(g)
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0

The "IDU Parameter List" table is as follows:

IDU Address	Error	Operating Capaci	IDU T1 Temp(°C)	Return Air T1	Ten Outlet Temp(Ta°)	PM2.5(ug/m3)	CO2(ppm)
0	0	0	25.1	25.1	--	--	--
1	0	0	25	25	--	--	--
2	0	84	24.9	18.9	--	--	--

After obtaining control permission, a list of control parameters within the corresponding control permission will appear on the right.



The screenshot shows the "Advanced Control" interface in the "Diagnosis Software". The "System" is set to "System-0". The "Choice Device" dropdown is set to "IDU Control". The "System Parameter List" table is as follows:

System	Run Mode	Special Mode	Special Mode Sta	Special Mode Typ	System Failure	System Heat Exch	Actual of No. Use
0	Cool	Normal	0	Normal	--	5	0
Mode Priority En	Mode Prohibit	Mode Priority	Communication	Capability Sign	Over High Voltage	Over Low Voltage	Compressor Start
True	No Mode Prohibit	Automatic priority	RS485	NO	NO	0	Normal Enable

The "ODU Parameter List" table is as follows:

ODU Address	Fault	Energy Needed f	Compressor 1 Hz	Compressor 2 Hz	Fan 1 RPM(rpm)	Fan 2 RPM(rpm)	EXV(A)(g)
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0

The "IDU Parameter List" table is as follows:

IDU Address	EXV(B)(g)	EXV(C)(g)	EXV(D)(g)	SV3	SV4	SV5	SV6
0	0	0	0	OFF	OFF	OFF	OFF
1	0	0	0	OFF	OFF	OFF	OFF
2	0	0	0	OFF	OFF	OFF	OFF

The "IDU Parameter List" table is as follows:

IDU Address	SV7	SV8A	SV8B	ST1	ST2	ST3	Water Pump
0	OFF	OFF	OFF	OFF	OFF	OFF	0
1	OFF	OFF	OFF	OFF	OFF	OFF	0
2	OFF	OFF	OFF	OFF	OFF	OFF	0

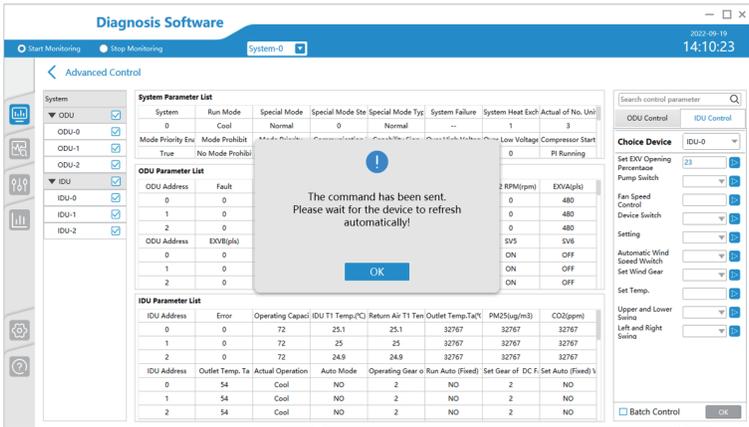
The "IDU Parameter List" table is as follows:

IDU Address	Crank 1	Crank 2	Heat Exchanger S	T3 Temp(°C)	T3B Temp(°C)	T4 Temp(°C)	High Saturation T
0	0	0	3	25	--	25	25
1	0	0	3	25	--	25	25
2	0	0	3	25	--	25	25

The "IDU Parameter List" table is as follows:

IDU Address	High Saturation T	High Pressure(MF)	Low Pressure(MP)	T8 Temp(°C)	T8 Temp(°C)	TL Temp(°C)	THL Temp(°C)	T9 Temp(°C)
0	16	3	19.8	16	16	16	16	16

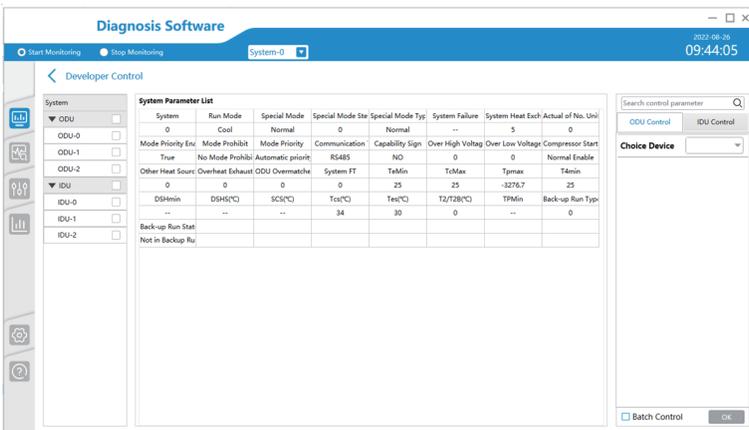
Then select the device from the drop-down list, enter the corresponding control value on the corresponding parameter control item, click the Send button  to send the control command, or click "Batch Control" to send the command for multiple equipment and multiple parameters. After the transmission, a message prompt will pop up as follows.



Click "OK" to close the message reminder.

2.2.2.2.2 Developer Control

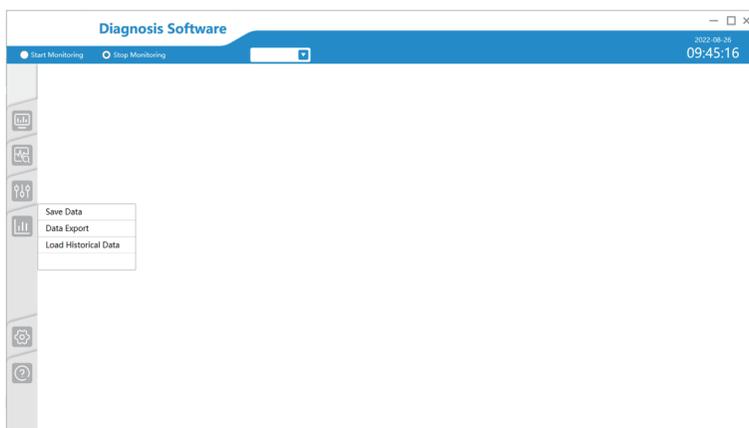
After clicking the device monitoring icon , click the "Developer Control" menu to enter the developer control function interface as follows.



The operation steps are the same as those of the advanced control with the premise that the corresponding parameter control list will appear only after obtaining the control authority, otherwise it will be empty.

2.2.3 Data Processing

On click the data processing icon , the following function menu list will pop up, including a list of functions such as data saving, data export, and historical data loading.

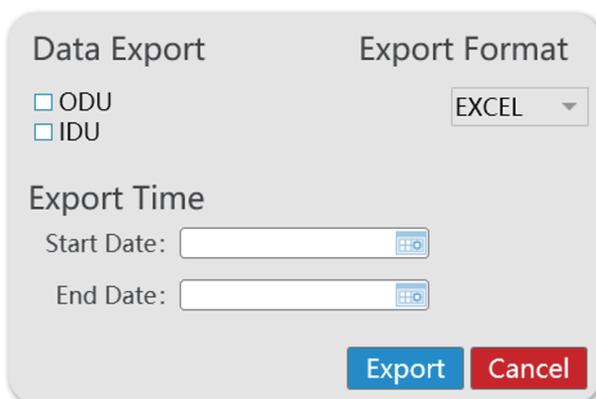


2.2.3.1 Save Data

Click "Save Data", specify the path address of the saved data, edit the file name of the saved data, and then the data will be saved to the file under the specified directory path.

2.2.3.2 Data Export

Click "Data Export", the data saving window will pop up as follows



Select the indoor unit and outdoor unit to be exported, and the exported data format should be EXCEL. Select the export time range, click "Export", and specify the export file path to enter the export data process, then a prompt window will pop up "please wait". Click the software now may cause the software to crash.



The default naming format of the data file is "YYYYMMDD", and then the reminder window pops up as follows.



2.2.3.3 Load Historical Data

When the diagnosis software starts monitoring the device, a database file will be saved under the installation directory\Database folder. Click the "Load Historical Data" menu, and a file window will pop up to select the historical database file to be viewed. After loading, user can enter the historical data. The list interface is as follows.

Diagnosis Software

Start Monitoring Stop Monitoring System-0 2022-09-19 14:13:47

Parameter List

System

System Parameter List

System	Run Mode	Special Mode	Special Mode St	Special Mode Ty	System Failure	System Heat Exc	Actual of No. Un	Mode Priority En	Mode Prohibit	Mode Priority
0	OFF	PumpDown	4	Preheat	--	1	0	True	No Mode Prohib	Automatic prior

Communication Capability Sign Over High Voltag Over Low Voltag Compressor Star Other Heat Sour Overheat Exhaust ODU Overmatch System FF TeMin TdMax

0 0 0 0 0 0 0 0 0 0 25 25

ODU Parameter List

ODU Address	Fault	Energy Needed (Compressor 1 Hc	Compressor 2 Hc	Fan 1 RPM(rpm)	Fan 2 RPM(rpm)	DXN(g/kg)	DXV(g/kg)	DXC(g/kg)	DXD(g/kg)
0	0	0	0	0	0	0	52	0	0	0
1	0	0	0	0	0	0	52	0	0	0
2	0	0	0	0	0	0	52	0	0	0

ODU Address SV3 SV4 SV5 SV6 SV7 SV8 SV8B ST1 ST2 ST3

0	OFF									
1	OFF									
2	OFF									

IDU Parameter List

IDU Address	Error	Operating Capa:	IDU T1 Temp.(°C)	Return Air T1 Te	Outlet Temp.Ta1	PM2.5(ug/m3)	CO2(ppm)	Outlet Temp. Ta	Actual Operator	Auto Mode
0	0	0	25	25	32767	32767	32767	0	Cool	NO
1	0	0	25	25	32767	32767	32767	0	Cool	NO
2	0	0	24	24	32767	32767	32767	0	Cool	NO

IDU Address	Operating Gear	Run Auto (Fixed)	Set Gear of DC 1	Set Auto (Fixed)	Set Temp.(°C)	Dual Set Point C:	Dual Set Point H	Humidity Set Val	Set Dry Temp.	T2 Temp.(°C)
0	1	YES	0	YES	26	26	23	0	0	25
1	1	YES	0	YES	22	22	22	127	0	24
2	1	NO	3	NO	28	28	26	65	1	25

The upper right corner of the interface displays the current data frame number, click the "▶" button to automatically play data, click the "◀◀" button to view the previous data frame, click the "▶▶" button to view the next data frame, or directly input the corresponding frame number "121/663" to jump to the corresponding frame number. If it is being monitored, the historical data cannot be loaded, and the software will also pop up a prompt window for reminder.

2.2.4 Fault Diagnosis

Click the fault diagnosis icon  to pop up the function menu of the fault diagnosis module. The interface is as follows.

Diagnosis Software

Start Monitoring Stop Monitoring 2022-09-19 11:43:27

Fault Code Management

Click the "Fault Code Management" menu to enter the following interface.

Diagnosis Software

Start Monitoring Stop Monitoring System-0 2020-08-26 13:41:54

Fault Code Management

Query: Fault Code: Device Type:

Fault Version	Device Type	Fault Code	Fault Name	Description	Fault Cause	Operation
V8	ODU	A01	emergency shutdown of Outdoor Units	Compressor protection shut down All Outdoor Units stop running Error codes are displayed only on master unit.	Damaged outdoor unit main control board. Centralized controller command	Detail
V8	ODU	xA6	No.x slave unit error	xA6 shows The Outdoor Unit at address X is in error(1,2,3) All Outdoor Units stop running Error code is displayed only on master unit.	Driven machine is in error	Detail
V8	ODU	AAx	Inverter driver board X does not match the	No.x Inverter driver board does not match the main control All units stop running Error code is displayed on the unit with the error.	Model error of Inverter driver board The model of Outdoor Unit is incorrectly set. Main control board is damaged	Detail
V8	ODU	xBS3	No.x Recirculation fan error	No.x Recirculation Fan(1) is in error All units stop running Error code is displayed on the unit with the error	The cable connect Recirculation Fan and Recirculation Fan p The Recirculation Fan is damaged The Recirculation Fan power supply is damaged ODU main control board is damaged	Detail
V8	ODU	CO	Outdoor Unit has no address	Outdoor Unit has no address. The ODU with error can not run.	The ODU's address is not set Outdoor main control board is damaged	Detail
V8	ODU	C13	The address of Outdoor Unit is repeated	The address of Outdoor Unit is repeated. The master outdoor unit cannot communicate with indoor	The ODU's address is not set Damaged outdoor main control board	Detail
V8	ODU	C21	Communication error between IDU and ODU	Communication error between IDU and ODU All units stop running. Error code is only displayed on the master unit	Two or more outdoor units in the Combined system have th Damaged outdoor main control board 1.The three-core shield cable is not in use or the shield layer 2.The communication cable is not tightened or the surface 3.Communication cable is disturbed by strong electromagn 4.The communication cable is disconnected or in bad contact 5.Communication cables are not connected hand in hand or 6.The address of an IDU is incorrect 7.Indoor main control board is damaged. 8.Outdoor main control board is damaged. The three-core shield cable is not in use or the shield layer i The communication cable is not tightened or the surface coi Communication cables are not connected hand in hand or i The communication cable is disconnected or in bad contact Communication cables are not connected hand in hand or if The address of an indoor unit is incorrect Indoor main control board is damaged. Outdoor main control board is damaged	Detail
V8	ODU	C36	Abnormal reduction in the number of indoor	The number of online indoor units is smaller than the config All units stop running. Error code is only displayed on the master unit	The communication cable is not tightened or the surface coi Communication cables are not connected hand in hand or i The communication cable is disconnected or in bad contact Communication cables are not connected hand in hand or if The address of an indoor unit is incorrect Indoor main control board is damaged. Outdoor main control board is damaged	Detail

The page includes a query function, which can query the determined error code information according to the input error code, or enter the device type to query the relevant type of error code list information. On click the "Detail" button, the error code detail window will pop up as follows: User can close the current error code detail window by clicking the " X " button in the upper right corner. When the mouse is positioned on the flow chart, user can zoom in and out by scrolling with the mouse.

A01 Code Detail

Fault Code: A01

Fault Name: emergency shutdown of Outdoor Units

Fault Version: V8 Device Type: ODU

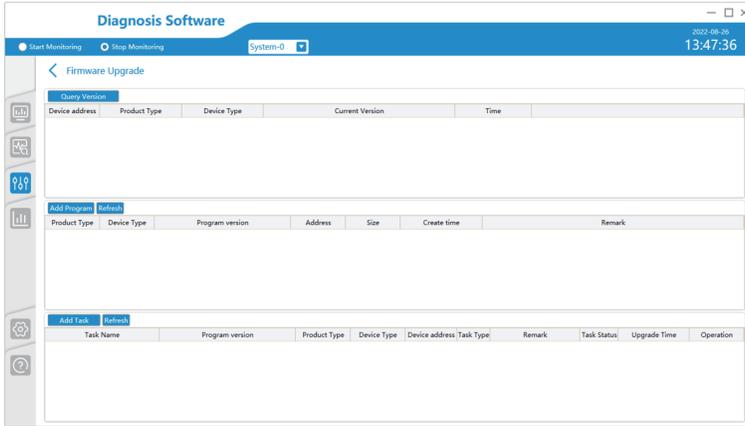
Description: Compressor protection shut down
All Outdoor Units stop running
Error codes are displayed only on master unit.

Fault Cause: Damaged outdoor unit main control board.
Centralized controller command

```

graph TD
    Start([A01]) --> MenuNone1{Menu option: None (BAC+1)}
    MenuNone1 -- No --> ErrorMain[Error in the main control board]
    MenuNone1 -- Yes --> ON5ON6Open[ON5/ON6 open circuit]
    ON5ON6Open --> MenuNone2{Menu option none?}
    MenuNone2 -- No --> RuleNotOpen[Rule not open circuit condition]
    RuleNotOpen --> ErrorMain
    MenuNone2 -- Yes --> ON5ON6Short[ON5/ON6 short circuit]
    ON5ON6Short --> RuleNotShort{Rule not short circuit condition}
    RuleNotShort -- No --> ErrorMain
    RuleNotShort -- Yes --> AutoRecovery{Automatic recovery after 5s?}
    AutoRecovery -- No --> ErrorMain
    AutoRecovery -- Yes --> Troubleshooting((troubleshooting))
  
```

2.2.5 Firmware upgrade

On click the firmware upgrade icon “

Query Version					
Device address	Product Type	Device Type	Current Version	Time	

Add Program						
Product Type	Device Type	Program version	Address	Size	Create time	Remark

Add Task									
Task Name	Program version	Product Type	Device Type	Device address/Task Type	Remark	Task Status	Upgrade Time	Operation	

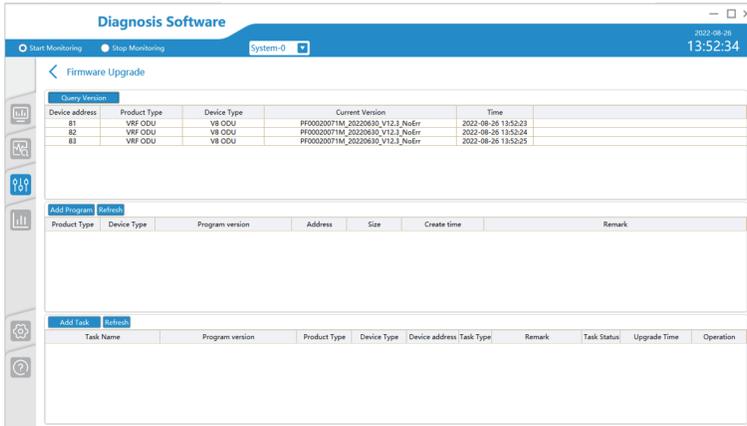
2.2.5.1 Firmware version query

On click the "Firmware Version Query" button, the following window will pop up. Then enter the relevant information such as the main type and subtype corresponding to the device to find the firmware version information of the device.



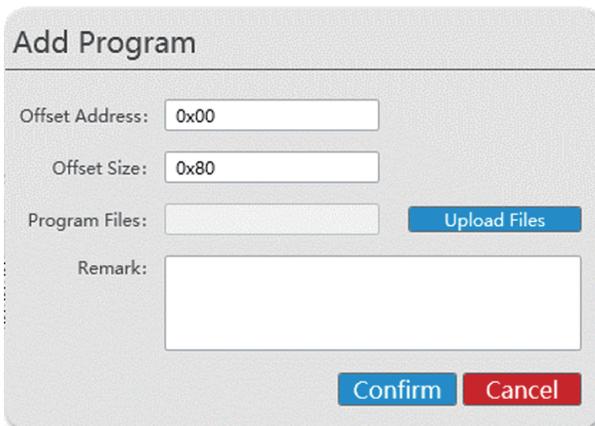
After completion, click the "Confirm" button, and the list of firmware version information of the devices under the current monitoring system will be searched.

When there are many devices, user can check the firmware version information of the corresponding device by pulling down the scroll bar. User can also click the "Cancel" button to cancel the firmware version query.



2.2.5.2 Add program

On click the "Add Program" button in the firmware upgrade page to pop up the add program window, then edit the corresponding information, among which the offset address (default as 0x00) and offset size (default as 0x80) and other information need to be filled in according to the uploaded firmware information.



On click the "Upload Files" button in the add program window, select the upgrade firmware program file to complete the upload.

2.2.5.3 Add Task

On click the "Add Task" button in the firmware upgrade page, the add task window will pop up, then enter the task name and select the upgrade type (execute immediately or deferred execution). If the user chooses execute immediately, then they do not need to set the upgrade time; if the user chooses deferred execution, then they will need to enter the upgrade time, choose the upgrade file and upgrade object. Currently only single-device upgrade and broadcast upgrade are supported. If "broadcast" upgrade is selected, all devices corresponding to the firmware program selected by the current system will be upgraded without selecting the upgrade object.

Add Task

Task Name:

Upgrade Type: Execute Immediately ▼

Upgrade Time: ⌚

Program Files: ▼

Upgrade Objects: ▼

Broadcast

Confirm
Cancel

On click "Confirm" to complete adding task, or click "Cancel" to cancel adding task. The final task list is as follows.

Diagnosis Software
2022-08-26 14:07:25

Start Monitoring
Stop Monitoring
System-0

Firmware Upgrade

Query Version					
Device address	Product Type	Device Type	Current Version	Time	
#1	VBF ODU	VB ODU	PF00020071M_20220630_V12.3_NoEr	2022-08-26 13:52:33	
#2	VBF ODU	VB ODU	PF00020071M_20220630_V12.3_NoEr	2022-08-26 13:52:34	
#3	VBF ODU	VB ODU	PF00020071M_20220630_V12.3_NoEr	2022-08-26 13:52:35	

Add Program Refresh

Product Type	Device Type	Program version	Address	Size	Create time	Remark
IDU_VB	IDU	(Test-NoPCFanEr)PF00021014M220728V5	0	128	2022-08-26 14:06:11	

Add Task Refresh

Task Name	Program version	Product Type	Device Type	Device address	Task Type	Remark	Task Status	Upgrade Time	Operation
Test	(Test-NoPCFanEr)PF00021014M220728V5	IDU_VB	IDU		1	Delayed E	Unexecuted	2022-08-27 14:06:53	Detail Delete

Click the "Delete" button in the task details to delete the task; Click the "Detail" button to enter the detail window which including important information such as device address, upgrade version, upgrade progress, and upgrade status. Click the "Terminate Upgrade" button to terminate the upgrade task, and click the "Query Upgrade Status" button to query the task upgrade status.

Upgrade Details Terminate Upgrade Query Upgrade Status ×				
Device Address	Upgrade Version	Time	Qrogress	Status
0	(Test-NoPQFanErr)PF00021014M220728V51.2	2022-09-19 14:20:07	0%	Upgrading
1	(Test-NoPQFanErr)PF00021014M220728V51.2	2022-09-19 14:20:07	0%	Upgrading
2	(Test-NoPQFanErr)PF00021014M220728V51.2	2022-09-19 14:20:07	0%	Upgrading

2.2.6 Help

Click the help icon  to pop up a window for related information such as software version and copyright. By clicking the " × " button in the upper right corner of the window, user can close the current window.



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