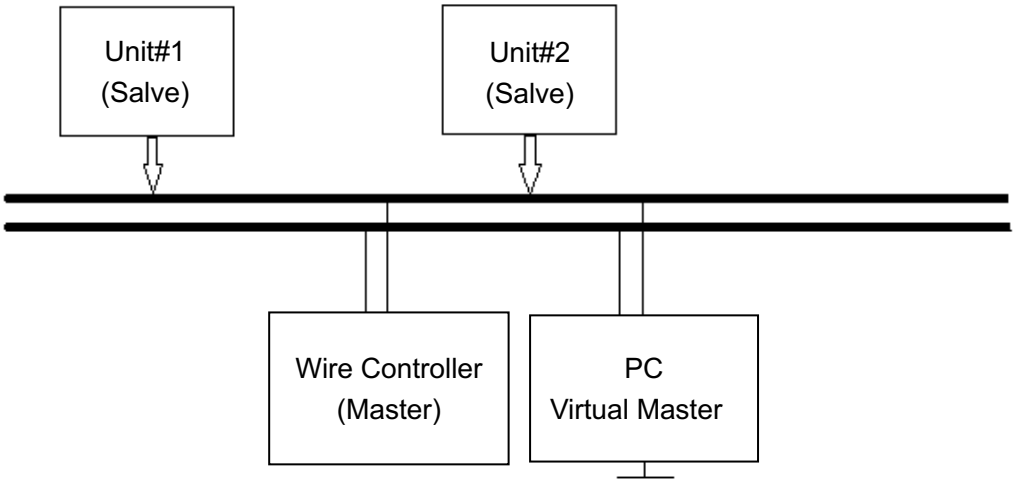
4.4 Communication Protocols

4.4.1 Communication Way

The wire controller, PC and external unit are connected by RS485 bus, the wire controller, PC is the communication master, and the external unit is the communication slave, the communication topology is as follows.



Address convention: range 1-255

Address 0: broadcast address, use broadcast command to send data, all units receive data but do not reply.

4.4.2 Communication Sequence

This communication adopts master-slave answering half-duplex asynchronous serial communication mode, and the external machine works in the slave state. After the slave receives the command from the host, it waits for 100ms after the end of communication for the next transmission, and each time the access address is not more than 100; since the PC and the line controller are the same as the host, the communication time must be staggered, and it can be used to take turns to send.

4.4.3 Communication Address

1. Communication using RS485 bus, asynchronous serial signal 1 start bit, 8 data bits, 1 end bit, no parity, baud rate 9600.

2. In line with the standard MODBUS RTU protocol, 16-bit data structure, 16-bit CRC checksum, low byte in front of the high byte in the back.

3. The state temperature and set temperature all X10 processing, such as 255, representing 25.5

4.There are three commands used for master-slave communication:

4.1. Command 03H (query 1 or more registers)

Send command: [device address] + [command number 03H] + [start register address high 8 bits] + [low 8 bits] + [read the number of registers high 8 bits] + [low 8 bits] + [low 8 bits of the CRC checksum] + [high 8 bits of the CRC checksum]

Device response: [Device address] + [Command number 03H] + [Number of bytes returned] + [Data 1 high 8 bits] + [Data 1 high low bits] +... + [Data n] + [Lower 8 bits of CRC checksum] + [Higher 8 bits of CRC checksum]

4.2. Command 06H (Modify single register)

Send Command: [Device Address] + [Command No. 06H] + [Register address to be lowered high 8 bits] + [low 8 bits] + [Data to be lowered high 8 bits] + [low 8 bits] + [Low 8 bits] + [Low 8 bits of CRC check] + [High 8 bits of CRC check]

Device response: if successful, return the command sent by the computer as it is, otherwise, do not respond.

4.3. Command 10H (modify multiple registers)

Send command: [device address] + [command number 10H] + [start register address high 8 bits] + [low 8 bits] + [number of registers high 8 bits] + [low 8 bits] + [number of register bytes] + [data 1 high 8 bits] + [low 8 bits] + ... + [Data N high 8 bits] + [low 8 bits] + [low 8 bits of CRC checksum] + [high 8 bits of CRC checksum]

Device response: [Device address] + [Command number 10H] + [Start register address high 8 bits] + [Low 8 bits] + [Number of registers high 8 bits] + [Low 8 bits] + [Low 8 bits] + [Low 8 bits of CRC check] + [High 8 bits of CRC check.

4.4. Command 01H (Query 1 or more coils) (valid for communication protocol ⩾130)

Send command: [Device address] + [Command No. 01H] + [Start coil address high 8 bits] + [Low 8 bits] + [Read coil number high 8 bits] + [Low 8 bits] + [Low 8 bits] + [Low 8 bits of CRC check] + [High 8 bits of CRC check

Device response: [Device address] + [Command number 01H] + [Number of bytes returned] + [Data 1] + [Data 2] + ... + [Data n] + [Lower 8 bits of CRC checksum] + [Higher 8 bits of CRC checksum]

Note: A single data contains the values of 8 coils.

4.5. Command 05H (Modify single coil) (valid for communication protocol ⩾ 130)

Send command: [Device address] + [Command No. 05H] + [High 8 bits of coil address to be placed] + [Low 8 bits] + [High 8 bits of data to be placed] + [Low 8 bits] + [Low 8 bits] + [Low 8 bits of CRC check] + [High 8 bits of CRC check]

Device response: if successful return the command sent by the computer as is, otherwise no response

Note: If the lower data is zero, the coil is set to zero; if the lower data is not zero, the coil is set to one;

4.6. Sending other commands is invalid, and does not respond to the data

No.	Name	Address Ranges	Read-Write	Note
1	Real-time status and faults	0x0000～0x003F	R	64Bit
2	Real-time data	0x0040～0x00FF	R	192Bit
3	System Parameters P	0x0100～0x02FF	RW	512Bit
4	User Parameters	0x0300～0x032F	RW	48Bit
5	User Commands	0x0330～0x035F	RW	48Bit
6	Version Information	0x0360～0x036F	R	16Bit
7	System Parameters L	0x0800～0x083F	RW	64Bit
8	Bit operation commands	0x1000～0x10FF	RW	256Bit

1. Real-time data 0x0000～0x03F Includes: Data on switch ports, relays, dip switches, faults, etc.					
Adress	**Name**	**Address Ranges**	**Default Value**	**Read-Write**	**Note**
0x0000	Running Status 1	Bit Definitions		R	
0x0001	Running Status 2	Bit Definitions		R	
0x0002	Error Status 1	Bit Definitions		R	
0x0003	Error Status 2	Bit Definitions		R	
0x0004	Error Status 3	Bit Definitions		R	
0x0005	System 1 Error Status 1	Bit Definitions		R	
0x0006	System 1 Error Status 2	Bit Definitions		R	
0x0007	System 1 Driver Error Status 1	Bit Definitions		R	
0x0008	System 1 Driver Error Status 2	Bit Definitions		R	
0x0009	System 1 Driver Error Status 3	Bit Definitions		R	
0x000A	System 2 Error Status 1	Bit Definitions		R	Refer to 0x0005
0x000B	System 2 Error Status 2	Bit Definitions		R	Refer to 0x0006
0x000C	System 2 Driver Error Status 1	Bit Definitions		R	Refer to 0x0007
0x000D	System 2 Driver Error Status 2	Bit Definitions		R	Refer to 0x0008
0x000E	System 2 Driver Error Status 3	Bit Definitions		R	Refer to 0x0009
0x000F		Bit Definitions		R	Refer to 0x0005
0x0010		Bit Definitions		R	Refer to 0x0006
0x0011		Bit Definitions		R	Refer to 0x0007
0x0012		Bit Definitions		R	Refer to 0x0008
0x0013		Bit Definitions		R	Refer to 0x0009
0x0014		Bit Definitions		R	Refer to 0x0005
0x0015		Bit Definitions		R	Refer to 0x0006
0x0016		Bit Definitions		R	Refer to 0x0007
0x0017		Bit Definitions		R	Refer to 0x0008
0x0018		Bit Definitions		R	Refer to 0x0009
0x0019	Relay Output Status 1	Bit Definitions		R	
0x001A	Relay Output Status 2	Bit Definitions		R	
0x001B	Relay Output Status 3	Bit Definitions		R	
0x001C	Relay Output Status 4	Bit Definitions		R	
0x001D	Switch Port Status 1	Bit Definitions		R	
0x001E	Switch Port Status 2	Bit Definitions		R	
0x001F	Switch Port Status 3	Bit Definitions		R	
0x0020	Switch Port Status 4	Bit Definitions		R	
0x0021		Real Value		R	
0x0022		Real Value		R	
0x0023		Real Value		R	
0x0024	Current Unit Tool Number	Real Value		R	
0x0025		Real Value		R	
0x0026		Real Value		R	
0x0027	Compressor 1Target Frequency	Real Value		R	
0x0028	Compressor 2 Target Frequency	Real Value		R	
.....				R	
0x003F	Reserve				

2. Real-time data 0x0040～0x00FF Includes: temperature, voltage, pressure, expansion valve opening and other data					
Adress	**Name**	**Address Ranges**	**Default Value**	**Read-Write**	**Note**

0x0040	Compressor Running Frequency	Real Value	Real Value	R	
0x0041	Fan Running Speed	Real Value	Real Value	R	
0x0042	EEV Open Step	Real Value	Real Value	R	
0x0043	EVI Valve Open Step	Real Value	Real Value	R	
0x0044	AC Input Voltage	Real Value	Real Value	R	
0x0045	AC Input Current	Real Value	Real Value	R	Display Value = Real Value/10
0x0046	Compressor Phase Current	Real Value	Real Value	R	Display Value = Real Value/10
0x0047	Compressor IPM Temp.	Real Value	Real Value	R	
0x0048	High Pressure Saturation Temp.	Real Value	Real Value	R	
0x0049	Low Pressure Saturation Temp.	Real Value	Real Value	R	
0x004A	Ambient Temp. T1	Real Value	Real Value	R	
0x004B	Temp. T2	Real Value	Real Value	R	
0x004C	Inner Coil Temp. T3	Real Value	Real Value	R	
0x004D	Suction Temp. T4	Real Value	Real Value	R	
0x004E	Exhaust Temp. T5	Real Value	Real Value	R	
0x004F	Water Inlet Temp. T6	Real Value	Real Value	R	
0x0050	Water Outlet Temp. T7	Real Value	Real Value	R	
0x0051	Economizer Inlet Temp. T8	Real Value	Real Value	R	
0x0052	Economizer Outlet Temp. T9	Real Value	Real Value	R	
0x0053	Current Unit Tool Number	Real Value	Real Value	R	
0x0054	DHW Tank Temp.	Real Value	Real Value	R	
0x0055	Plate Heat Exchanger Exhaust Temp.	Real Value	Real Value	R	
0x0056	Driver Manufacturer	Real Value	Real Value	R	
0x0057	Water Pump Speed PWM	Real Value	Real Value	R	
0x0058	Water Flow	Real Value	Real Value	R	
0x0059	DHW Return Water Temp.	Real Value	Real Value	R	
0x005A	Unit Input Voltage	Real Value	Real Value	R	
0x005B	Unit Input Current	Real Value	Real Value	R	Display Value = Real Value/100
0x005C	Unit Input Power / kw	Real Value	Real Value	R	Display Value = Real Value/100
0x005D	Unit Power Consumption / kwh	Real Value	Real Value	R	
0x005E	System 2 Compressor Running Frequency				
0x005F	System 2 Fan Running Speed				
0x0060	System 2 EEV Open Step				
0x0061	System 2 EVI Valve Open Step				
0x0062	System 2 AC Input Voltage				
0x0063	System 2 AC Input Current				Display Value = Real Value/10
0x0064	System 2 Compressor Phase Current				Display Value = Real Value/10
0x0065	System 2 Compressor IPM Temp.				
0x0066	System 2 High Pressure Saturation Temp.				
0x0067	System 2 Low Pressure Saturation Temp.				
0x0068	System 2 Outer Coil Temp.				
0x0069	System 2 Inner Coil Temp.				
0x006A	System 2 Suction Temp.				
0x006B	System 2 Exhaust Temp.				
0x006C	System 2 Economizer Inlet Temp.				
0x006D	System 2 Economizer Outlet Temp.				
0x0072	Solar Water Heater Temp.	Real Value	Real Value	R	

0x0073	Zone 2 Temp.	Real Value	Real Value	R	
0x0074	Butter Tank Temp.	Real Value	Real Value	R	
0x0075	Total Water Outlet Temp.	Real Value	Real Value	R	
0x0076	Unit B Phase Input Voltage	Real Value	Real Value	R	
0x0077	Unit B Phase Input Current	Real Value	Real Value	R	显示=实测/100
0x0078	Unit C Phase Input Voltage	Real Value	Real Value	R	
0x0079	Unit C Phase Input Current	Real Value	Real Value	R	显示=实测/100
0x007A	Smart Grid Status	Real Value	Real Value	R	
0x007B	Zone 2 Mixing Valve Opening	Real Value	Real Value	R	
0x007C	Zone 1 Mixing Temp.	Real Value	Real Value	R	
0x007D	Zone 1 Mixing Valve Opening	Real Value	Real Value	R	
0x00F0					
0x00F1					
0x00F2					
0x00F3					
0x00F4					
0x00F5					
0x00F6					
0x00F7					
0x00F8					
0x00F9					
0x00FA	Upper Limit of underfloor heating/heating Set Temp.	Real Value	Real Value	R	
0x00FB	Lower Limit of underfloor heating/heating Set Temp.	Real Value	Real Value	R	
0x00FC	Upper Limit of DHW Set Temp.	Real Value	Real Value	R	
0x00FD	Upper Limit of DHW Set Temp.	Real Value	Real Value	R	
0x00FE	Upper Limit of Cooling Set Temp.	Real Value	Real Value	R	
0x00FF	Upper Limit of Cooling Set Temp.	Real Value	Real Value	R	

Name	Bit	Status Valve		Name	Bit	Status Valve
Running Status 1 (1: Enable) (0: Disable)	Bit0	Refrigerant Recovery		**Running Status 2 (1: Enable) (0: Disable)**	Bit0	Sterilization
	Bit1	Primary Anti-freeze			Bit1	Sterilization and Insulation
	Bit2	Secondary Anti-freeze			Bit2	
	Bit3	Fault Alarm			Bit3	
	Bit4	System oil return			Bit4	
	Bit5				Bit5	
	Bit6				Bit6	
	Bit7				Bit7	
	Bit8	System Frosting			Bit8	
	Bit9				Bit9	
	Bit10				Bit10	Wire Controller Control on/off
	Bit11				Bit11	
	Bit12	Shutdown after Reaching Temp.			Bit12	
	Bit13	Shutdown after Unit Failure			Bit13	
	Bit14	Unit Operation			Bit14	
	Bit15	Unit Waiting for Operation			Bit15	

Name	Bit	Status Valve		Name	Bit	Status Valve
Error Status 1 0x0002 **(1: Error Enable)** **(0: Error Disable)**	Bit0	Wrong Phase		Error Status 2	Bit0	Ambient Temp. Too Low
	Bit1	Missing Phase			Bit1	
	Bit2	Water Flow Failure			Bit2	
	Bit3	Communication Failure			Bit3	
	Bit4	Emergency Failure			Bit4	
	Bit5	Out of Use Time			Bit5	
	Bit6	Water Tank Temp. Sensor Failure			Bit6	Indoor Ambient Humidity Failure
	Bit7	Water Inlet Temp. Sensor Failure			Bit7	
	Bit8	Indoor Ambient Temp. Sensor Failure			Bit8	
	Bit9	Outdoor Ambient Temp. Sensor Failure			Bit9	
	Bit10	DHW Return Water Temp. Sensor Failure			Bit10	
	Bit11	Water Outlet Temp. Too Low in Cooling Mode			Bit11	Phase Sequence Dip Switch Error
	Bit12	Water Level Switch Failure			Bit12	
	Bit13	Water Outlet Temp. Sensor Failure			Bit13	Water Pump 1 Failure
	Bit14	Water Outlet Temp. Too High in Heating Mode			Bit14	Water Pump 2 Failure
	Bit15	Large Temp. Difference between Water Inlet and Outlet			Bit15	Low Water Flow

Name	Bit	Status Valve
Error Status 3	Bit0	Phase Sequence Disconnected
	Bit1	Expansion Board Communication Failure
	Bit2	Plate Heat Exchanger Temp. Sensor Failure
	Bit3	Fan Board 1 Communication Failure
	Bit4	Fan Board 2 Communication Failure
	Bit5	Cascade Model Mismatch
	Bit6	Solar Water Heater Temp. Sensor Failure
	Bit7	AHS Temp. Sensor Failure
	Bit8	Buffer Tank Temp. Sensor Failure
	Bit9	Total Water Outlet Temp. Sensor Failure
	Bit10	Reserve
	Bit11	Reserve
	Bit12	Zone 1 Temp. Sensor Failure
	Bit13	Reserve
	Bit14	Reserve
	Bit15	Reserve

Name	Bit	Status Valve
System 1 Error Status 1	Bit0	High Pressure Switch Failure
	Bit1	Low Pressure Switch Failure
	Bit2	High Pressure Too High
	Bit3	High Pressure Too Low
	Bit4	Exhaust Pressure Too High
	Bit5	Current Protection
	Bit6	Coil Pressure Too High
	Bit7	Coil Temp. Sensor Failure
	Bit8	Suction Temp. Sensor Failure
	Bit9	Exhaust Temp. Sensor Failure
	Bit10	Economizer Inlet Temp. Sensor Failure
	Bit11	Economizer Outlet Temp. Sensor Failure
	Bit12	Fan Drive Board Communication Failure
	Bit13	Fan Failure
	Bit14	Cooling Coil Temp. Sensor Failure
	Bit15	Reserve

Name	Bit	Status Valve
System 1 Error Status 2	Bit0	High Pressure Sensor Failure
	Bit1	Low Pressure Sensor Failure
	Bit2	Middle Pressure Switch Failure
	Bit3	Coil Temp. Too High
	Bit4	Compressor Drive Board Communication Failure
	Bit5	
	Bit6	
	Bit7	
	Bit8	
	Bit9	
	Bit10	
	Bit11	
	Bit12	
	Bit13	
	Bit14	
	Bit15	

Name	Bit	Status Valve
System 1 Driver Board Error Status 1	Bit0	IPM Overcurrent/IPM Module Protection
	Bit1	Compressor Driver Failure
	Bit2	Compressor Overcurrent
	Bit3	Input Voltage Missing Phase
	Bit4	IPM Current Sampling Failure
	Bit5	Power Component Overheating and Shutdown
	Bit6	Pre-charge Failure
	Bit7	DC Bus Overvoltage
	Bit8	DC Bus Undervoltage
	Bit9	AC Input Undervoltage
	Bit10	AC Input Overvoltage
	Bit11	Input Voltage Sampling Failure

Name	Bit	Status Valve
System 1 Driver Board Error Status 2	Bit0	Compressor Overcurrent Alarm
	Bit1	Compressor Weak Magnetic Protection Alarm
	Bit2	PIM Overheat Alarm
	Bit3	PFC Overheat Alarm
	Bit4	AC Input Overcurrent Alarm
	Bit5	EEPROM Error Alarm
	Bit6	N/A
	Bit7	EEPROM Refresh Complete
	Bit8	Temperature Sensing Failure Limit
	Bit9	AC Undervoltage Frequency Limit Protection Alarm；
	Bit10	N/A
	Bit11	N/A

	Bit12	DSP and PFC Communication Failure			Bit12	N/A
	Bit13	Board Radiator Temp. Sensor Failure			Bit13	N/A
	Bit14	DSP and Communicate Board Communication Failure			Bit14	N/A
	Bit15	Communication Failure with Motherboard			Bit15	N/A

Name	Bit	Status Valve
System 1 Driver Board Error Status 3	Bit0	IPM Module Overheat and Shutdown
	Bit1	Compressor Missing Phase
	Bit2	Compressor Overload
	Bit3	Input Current Sampling Failure
	Bit4	PIM Supply Voltage Failure
	Bit5	Pre-charge Circuit Voltage Failure
	Bit6	EEPROM Failure
	Bit7	AC Input Overvoltage Failure
	Bit8	Microelectronics Failure
	Bit9	Compressor Type Code Failure
	Bit10	Current Sampling Signal Overcurrent
	Bit11	N/A
	Bit12	N/A
	Bit13	N/A
	Bit14	N/A
	Bit15	N/A

Name	Bit	Status Valve		Name	Bit	Status Valve
System 2 Error Status 1	Bit0	High Pressure Switch 2 Failure		**System 2** Error Status 2	Bit0	High Pressure Sensor 2 Failure
	Bit1	Low Pressure Switch 2 Failure			Bit1	Low Pressure Sensor 2 Failure
	Bit2	High Pressure 2 Too High			Bit2	Middle Pressure Switch 2 Failure
	Bit3	High Pressure 2 Too Low			Bit3	Coil Temp. 2 Too High
	Bit4	Exhaust Pressure 2 Too High			Bit4	Compressor Drive Board 2 Communication Failure
	Bit5	Current 2 Protection			Bit5	
	Bit6	Coil 2 Pressure Too High			Bit6	
	Bit7	Coil 2 Temp. Sensor Failure			Bit7	
	Bit8	Suction 2 Temp. Sensor Failure			Bit8	
	Bit9	Exhaust 2 Temp. Sensor Failure			Bit9	

	Bit10	Economizer 2 Inlet Temp. Sensor Failure			Bit10	
	Bit11	Economizer 2 Outlet Temp. Sensor Failure			Bit11	
	Bit12	Fan Drive 2 Board Communication Failure			Bit12	
	Bit13	Fan 2 Failure			Bit13	
	Bit14	Cooling 2 Coil Temp. Sensor Failure			Bit14	
	Bit15	Reserve			Bit15	

Name	Bit	Status Valve		Name	Bit	Status Valve
System 2 Driver Board Error Status 1	Bit0	IPM Overcurrent/IPM Module Protection		**System 2** Driver Board Error Status 2	Bit0	Compressor Overcurrent Alarm
	Bit1	Compressor Driver Failure			Bit1	Compressor Weak Magnetic Protection Alarm
	Bit2	Compressor Overcurrent			Bit2	PIM Overheat Alarm
	Bit3	Input Voltage Missing Phase			Bit3	PFC Overheat Alarm
	Bit4	IPM Current Sampling Failure			Bit4	AC Input Overcurrent Alarm
	Bit5	Power Component Overheating and Shutdown			Bit5	EEPROM Error Alarm
	Bit6	Pre-charge Failure			Bit6	N/A
	Bit7	DC Bus Overvoltage			Bit7	EEPROM Refresh Complete
	Bit8	DC Bus Undervoltage			Bit8	Temperature Sensing Failure Limit
	Bit9	AC Input Undervoltage			Bit9	AC Undervoltage Frequency Limit Protection Alarm；
	Bit10	AC Input Overvoltage			Bit10	N/A
	Bit11	Input Voltage Sampling Failure			Bit11	N/A
	Bit12	DSP and PFC Communication Failure			Bit12	N/A
	Bit13	Board Radiator Temp. Sensor Failure			Bit13	N/A
	Bit14	DSP and Communicate Board Communication Failure			Bit14	N/A
	Bit15	Communication Failure with Motherboard			Bit15	N/A

Name	Bit	Status Valve
System 2 Driver Board Error Status 3	Bit0	IPM Module Overheat and Shutdown
	Bit1	Compressor Missing Phase
	Bit2	Compressor Overload
	Bit3	Input Current Sampling Failure
	Bit4	PIM Supply Voltage Failure
	Bit5	Pre-charge Circuit Voltage Failure
	Bit6	EEPROM Failure
	Bit7	AC Input Overvoltage Failure
	Bit8	Microelectronics Failure
	Bit9	Compressor Type Code Failure
	Bit10	Current Sampling Signal Overcurrent
	Bit11	N/A
	Bit12	N/A
	Bit13	N/A
	Bit14	N/A
	Bit15	N/A

Name	Bit	Status Valve
System 2 Driver Board Error Status 1	Bit0	IPM Overcurrent/IPM Module Protection
	Bit1	Compressor Driver Failure
	Bit2	Compressor Overcurrent
	Bit3	Input Voltage Missing Phase
	Bit4	IPM Current Sampling Failure
	Bit5	Power Component Overheating and Shutdown
	Bit6	Pre-charge Failure
	Bit7	DC Bus Overvoltage
	Bit8	DC Bus Undervoltage
	Bit9	AC Input Undervoltage
	Bit10	AC Input Overvoltage
	Bit11	Input Voltage Sampling Failure
	Bit12	DSP and PFC Communication Failure
	Bit13	Board Radiator Temp. Sensor Failure
	Bit14	DSP and Communicate Board Communication Failure
	Bit15	Communication Failure with Motherboard

Name	Bit	Status Valve
System 2 Driver Board Error Status 2	Bit0	Compressor Overcurrent Alarm
	Bit1	Compressor Weak Magnetic Protection Alarm
	Bit2	PIM Overheat Alarm
	Bit3	PFC Overheat Alarm
	Bit4	AC Input Overcurrent Alarm
	Bit5	EEPROM Error Alarm
	Bit6	N/A
	Bit7	EEPROM Refresh Complete
	Bit8	Temperature Sensing Failure Limit
	Bit9	AC Undervoltage Frequency Limit Protection Alarm；
	Bit10	N/A
	Bit11	N/A
	Bit12	N/A
	Bit13	N/A
	Bit14	N/A
	Bit15	N/A

Name	Bit	Status Valve
Relay Status 1 0x0019	Bit0	DHW Electric Heater
	Bit1	Fan High Wind Level
	Bit2	

Name	Bit	Status Valve
Relay Status 2 0x001A	Bit0	Compressor 1
	Bit1	Liquid Injection Valve 1
	Bit2	EVI EEV 1

(1: Load Enable) (0: Load Disable)	Bit3	Fan Low Wind Level			Bit3	4-Way Valve 1
	Bit4	AC Electric Heater			Bit4	Bypass Valve 1
	Bit5	Underfloor Heating Electric Heater			Bit5	Fan 1
	Bit6	Bulit-in water pump			Bit6	
	Bit7				Bit7	
	Bit8				Bit8	Secondary heating pumps
	Bit9	Crankshaft Heater			Bit9	
	Bit10	Chassis Heater			Bit10	Compressor 2
	Bit11	Return Water Valve/Pump			Bit11	Liquid Injection Valve 2
	Bit12				Bit12	EVI EEV 2
	Bit13				Bit13	Compressor 2
	Bit14	Heating & Cooling 3-way valve			Bit14	Liquid Injection Valve 2
	Bit15	Underfloor heating 3-way valve			Bit15	

Name	Bit	Status Valve		Name	Bit	Status Valve
Relay Status 3	Bit0			Relay Status 4	Bit0	Pipe electric heater 1
	Bit1				Bit1	Pipe electric heater 2
	Bit2				Bit2	Auxiliary Water Pump
	Bit3				Bit3	Zone 2 Water Pump
	Bit4				Bit4	Zone 1 Water Pump
	Bit5				Bit5	
	Bit6	Expansion tank electric heater			Bit6	
	Bit7	Hot water heat source water pump			Bit7	
	Bit8	Heating heat source water pumps			Bit8	
	Bit9	AHS Signal output			Bit9	
	Bit10				Bit10	
	Bit11				Bit11	
	Bit12				Bit12	
	Bit13				Bit13	
	Bit14				Bit14	
	Bit15				Bit15	

Name	Bit	Status Valve		Name	Bit	Status Valve
Switch Status 1 (1: Closed) (0: Opened)	Bit0	SW1		**Switch Status 2**	Bit0	
	Bit1	SW2			Bit1	
	Bit2	SW3			Bit2	
	Bit3	SW4			Bit3	
	Bit4	SW5			Bit4	
	Bit5	SW6			Bit5	
	Bit6	SW7			Bit6	
	Bit7	SW8			Bit7	High Pressure Switch 1
	Bit8	Water Flow Switch			Bit8	Low Pressure Switch 1

	Bit9				Bit9	Middle Pressure Switch 1
	Bit10	Linkage Switch (Room Thermostat)			Bit10	High Pressure Switch 2
	Bit11	Linkage Switch (DHW AHS)			Bit11	Low Pressure Switch 2
	Bit12	Linkage Switch			Bit12	Middle Pressure Switch 2
	Bit13	Emergency Switch			Bit13	
	Bit14				Bit14	
	Bit15				Bit15	

Name	Bit	Status Valve		Name	Bit	Status Valve
Switch Status 3	Bit0			Switch Status 4	Bit0	
	Bit1				Bit1	
	Bit2				Bit2	
	Bit3				Bit3	
	Bit4				Bit4	
	Bit5	Linkage Switch (Buffer Tank AHS)			Bit5	
	Bit6				Bit6	
	Bit7				Bit7	
	Bit8				Bit8	
	Bit9				Bit9	
	Bit10				Bit10	
	Bit11				Bit11	
	Bit12				Bit12	
	Bit13				Bit13	
	Bit14				Bit14	
	Bit15				Bit15	

3.Factory Parameter 0x0200～0x03FF

Adress	Name	Address Ranges	Default Value	Read-Write
0x0100	T1 Ambient Temperature Sensor	0～10	RW	0-Enable/1-Diasble
0x0101	High pressure switch setting	0～10	RW	0-Enable/1-Diasble
0x0102	Low pressure switch setting	0～10	RW	0-Enable/1-Diasble
0x0103	Water flow switch setting	0～10	RW	0-Enable/1-Diasble
0x0104	Thermal overload protection switches setting	0～10	RW	0-Enable/1-Diasble
0x0105	Linkage switch setting	0～10	RW	0-Enable/1-Diasble /2-Thermostat 3-Heating thermostat
0x0106	Fan motor type setting	0～10	RW	0-Enable/1-Diasble
0x0107	High pressure protection lockout setting	0～10	RW	0-Enable/1-Diasble
0x0108	Low pressure protection lockout setting	0～10	RW	0-Enable/1-Diasble
0x0109	Exhaust protection lockout setting	0～10	RW	0-Enable/1-Diasble
0x010A	Water flow switch protection lockout setting	0～10	RW	0-Enable/1-Diasble
0x010B	High pressure protection value	40～150	RW	℃

0x010C	High pressure frequency limit value	40～150	RW	℃
0x010D	Low pressure protection value	-50～-10	RW	℃
0x010E	Low pressure frequency limit value	-50～-10	RW	℃
0x010F	Exhaust temperature protection value	100～130	RW	℃
0x0110	Exhaust temperature frequency limit value	90～120	RW	℃
0x0111	Fan speed-up value-Cooling	0～60	RW	℃
0x0112	Fan speed-down value-Cooling	0～60	RW	℃
0x0113	Fan speed-down value-Heating	0～60	RW	℃
0x0114	Fan speed-up value-Heating	0～60	RW	℃
0x0115	Ambient temperature value- Unit no starting	-40～-10	RW	℃
0x0116	Ambient temperature value- Allow electric heater to start	-15～40	RW	℃
0x0117	Overprotection value- Inlet and outlet water temperature differential	10～30	RW	℃
0x0118	Compensation value-Return water temperature	-10～10℃	RW	℃
0x0119	Compensation value-Outlet water temperature	-10～10℃	RW	℃
0x011A	H&C return differential value	0～10℃	RW	℃
0x011B	Floor heating return differential value	0～10℃	RW	℃
0x011C	Water Pump Control-Unit shutdown when reaching temperature	0～10	RW	0-Running /1-Stop /2-Running in cooling mode /3-Running in cooling/heating mode /4-Running in underfloor heating mode
0x011D	Anti-freeze-water pump running time	0～10	RW	min
0x011E	Defrost mode selection	0～10	RW	0-Intelligent control /1-Timing control/ 2-Rapid control /3-Dew point control
0x011F	Defrosting - cumulative runtime	0～120	RW	℃
0x0120	Defrosting - coil temperature value	-30～0	RW	℃
0x0121	Defrosting - temperature differential 1	0～20	RW	℃
0x0122	Defrosting - temperature differential 2	0～20	RW	℃
0x0123	Maximum defrosting time	0～30	RW	℃
0x0124	Exit defrosting - coil temperature	0～30	RW	℃
0x0125	Shutdown mode - Reaching target temperature	0～10	RW	0-Intelligent shutdown/1-Temperature shutdown /2-Cooling intelligent
0x0126	Opening degree constant - Heating main valve	-999～999		
0x0127	Pressure sensor setting	0～10	RW	0-Enable/1-Diasble
0x0128	Correction value - Cooling target overheat	-5～10	RW	℃
0x0129	Correction value - Heating high voltage protection and frequency limiting	-10～10	RW	℃
0x012A	Correction value - Heating target overheat	-5～10	RW	℃
0x012B	Medium Pressure Switch Setting	0～10	RW	0-Disable/1-Ensble

0x012C	Water flow switch failure detection setting	0～10	RW	0-Enable/1-Diasble
0x012D	Communication address code	1～16	RW	
0x012E	Return differential - liquid injection solenoid valve opening	0～15	RW	℃
0x012F	EVI target overheat constant	0～12	RW	
0x0130	Enable/Disable Hot Water Tank temperature sensor	0～10	RW	0-Disable/1-Ensble
0x0131	Hot water frequency running percentage	30～100	RW	%
0x0132	Cooling - target frequency constants A	-100～100	RW	
0x0133	Cooling - minimum frequency limit	15-60	RW	Hz
0x0134	Cooling - target frequency upper limit	40-120	RW	Hz
0x0135	Cooling - target frequency lower limit	15-120	RW	Hz
0x0136	Heating - target frequency constant B	-100～100	RW	
0x0137	Heating - target frequency upper limit	50-120	RW	Hz
0x0138	Heating - target frequency lower limit	20Hz-120	RW	Hz
0x0139	Heating - minimum frequency1	15-60Hz	RW	Hz
0x013A	Heating - minimum frequency2	15-60Hz	RW	Hz
0x013B	Heating - minimum frequency3	15-60Hz	RW	Hz
0x013C	Hot water - target frequency constants	-100～100	RW	
0x013D	Hot water - target frequency upper limit	50-120	RW	Hz
0x013E	Hot water - target frequency lower limit	15-120	RW	Hz
0x013F	Hot water - minimum frequency 1	15-60	RW	Hz
0x0140	Hot water - minimum frequency 2	15-60	RW	Hz
0x0141	Hot water - minimum frequency 3	15-60	RW	Hz
0x0142	DC fan - initial frequency	20-60	RW	Hz
0x0143	DC fan - heating minimum frequency	20-60	RW	Hz
0x0144	DC fan - heating max frequency	20-80	RW	Hz
0x0145	DC fan - cooling minimum frequency	20-60	RW	Hz
0x0146	DC fan - cooling maximum frequency	20-80	RW	Hz
0x0147	Compressor frequency - Allow auxiliary valve and EVI to open	20-80z	RW	H
0x0148	Compressor frequency - Allow auxiliary valve and EVI to close	20-80	RW	Hz
0x0149	Cooling - main valve initial opening 1	20～480	RW	P
0x014A	Cooling - main valve initial opening 2	20～480	RW	P
0x014B	Cooling - main valve initial opening 3	20～480	RW	P
0x014C	Cooling - main valve minimum opening	0～300	RW	P
0x014D	Heating - main valve minimum opening	0～300	RW	P

0x014E	Main valve - maximum opening	100～500	RW	P
0x014F	Main valve - initial opening constant c	20～300	RW	P
0x0150	Main valve - initial opening coefficient a	-999～999	RW	
0x0151	Main valve - initial opening coefficient b	-999～999	RW	
0x0152	Auxiliary valve - Maximum open degree	100～500	RW	P
0x0153	Auxiliary valve - Minimum open degree	50～300	RW	P
0x0154	Main valve - Adjustment period	10-120	RW	S
0x0155	Auxiliary valve - initial open degree c	-200～900	RW	
0x0156	Auxiliary valve - initial open degree a	-999～999	RW	
0x0157	Auxiliary valve - initial open degree b	-999～999	RW	
0x0158	Silent mode - compressor maximum frequency	20-70	RW	Hz
0x0159	Silent mode - fan motor maximum frequency	20-60Hz	RW	Hz
0x015A	Ambient temperature - Allow auxiliary and EVI to open	0-45	RW	℃
0x015B	Interval period - Allow auxiliary and EVI to open	0-30	RW	min
0x015C	Temperature differential(T8-T7) - Allow auxiliary and EVI to open	0-60	RW	℃
0x015D	Compressor running time - Allow auxiliary and EVI to open	0-20	RW	min
0x015E	Auxiliary valve adjustment cycle	10-120	RW	S
0x015F	Cascade - water pump operation mode	0-10	RW	0-Together control /1-Independent control
0x0160	DHW differential value	0～10	RW	℃
0x0161	Water tank temperature automatic compensation	0～10	RW	0-Enable/1-Diasble
0x0162	Water tank temperature manual compensation	-10～10	RW	℃
0x0163	Water pump speed regulation temperature differential	2～10	RW	℃
0x0164	PWM pump minimum speed	20～80	RW	%
0x0165	Unit water pump control mode (host)	0～10	RW	0-AC/1-DC
0x0166	Four-way valve control mode	0～10	RW	0-Power on cooling/1- Power on heating
0x0167	Mode switching - unit minimum running time	0～10	RW	min
0x0168	Mode switching - Percentage of operating frequency	20-100	RW	%
0x0169	Cooling mode running - Minimum allowed ambient temperature	10～60	RW	℃
0x016A	Heating mode running - Maximum allowed ambient temperature	10～60	RW	℃
0x016B	Hot water mode running - highest ambient temperature	10～60	RW	℃
0x016C	Hot water set temperature - highest temperature	30～80	RW	℃

0x016D	Hot water set temperature - lowest temperature	10～30	RW	℃
0x016E	Heating set temperature - highest temperature	30～80	RW	℃
0x016F	Heating set temperature - lowest temperature	15～30	RW	℃
0x0170	Cooling set temperature - highest temperature	20～40	RW	℃
0x0171	Cooling set temperature - lowest temperature	5～20	RW	℃
0x0172	Number of compressors to choose	1～2	RW	
0x0173	Unit type selection	0～10	RW	0-2-unit /1-3-unit
0x0174	Unit temperature control mode	0～10	RW	0-Water Inlet Temp./1-Water Outlet Temp.
0x0175	Ambient temperature - Allow access to anti-freeze	0～10	RW	℃
0x0176	Outlet water temperature - Allow access to anti-freeze	0～20	RW	℃
0x0177	Refrigerant type	0～20	RW	1-R410A/2-R32/3-R290
0x0178	Enable/Disable - Anti-condensation function	0～10	RW	0-Enable/1-Diasble
0x0179	Low value - Heating frequency shield 1	0-120	RW	Hz
0x017A	High value - Heating frequency shield 1	0-120	RW	Hz
0x017B	Low value - Heating frequency shield 2	0-120	RW	Hz
0x017C	High value - Heating frequency shield 2	0-120	RW	Hz
0x017D	Low value - Heating frequency shield 3	0-120	RW	Hz
0x017E	High value - Heating frequency shield 3	0-120	RW	Hz
0x017F	Low value - Cooling frequency shield 1	0-120	RW	Hz
0x0180	High value - Cooling frequency shield 1	0-120	RW	Hz
0x0181	Low value - Cooling frequency shield 2	0-120	RW	Hz
0x0182	High value - Cooling frequency shielding 2	0-120	RW	Hz
0x0183	Low value - Cooling frequency shield 3	0-120	RW	Hz
0x0184	High value - Cooling frequency shield 3	0-120	RW	Hz
0x0185	Fan module	0～10	RW	0-Integral/1-Individual
0x0186	Low protection value - Water flow rate	0～100	RW	L/min
0x0187	Temperature differential - Allow compressor to start (Valid, P120=1)	0～50	RW	℃
0x0188	Ambient temperature - Allow throttling bypass valve to open	-20～50	RW	℃
0x0189	Compressor running time - Allow throttling bypass valve to open	0～999	RW	S

0x018A	Compressor frequency - Allow defrosting	40～120	RW	Hz
0x018B	Buffer tank electric heater	0～10	RW	0-Enable/1-Disable/2-AHS
0x018C	DHW electric heater	0～10	RW	0-Enable/1-Disable/2-AHS
0x018D	Dew point temperature duration - Allow defrosting	0～60	RW	min
0x018E	Dew point constant - Allow defrosting	0～60	RW	
0x018F	Inlet water temperature - Allow defrosting	0～60	RW	℃
0x0190	Ambient temperature - Allow defrosting	-20～30	RW	℃
0x0191	Antifreze protection value - heat exchanger	-20～10	RW	℃
0x0192	Water pump PWM - range setting value	0～100	RW	L/min
0x0193	Antifreeze mode - Cooling Coil	0～10	RW	0-Low pressure /1-Temperature /2-Low pressure+ Temperature
0x0194	Antifreeze temperature - Cooling Coil	-30-10	RW	℃
0x0195	Limit frequency value - Overheat outlet temperature	40-80	RW	℃
0x0196	Water pump - secondary heating/cooling system	0～10	RW	0-Power on run/1-Power on/ 2- Linkage demand switch/ 3- Temperature control
0x0197	Return differential - Hot water heat source	0-40	RW	℃
0x0198	Return differential - Heating heat source	0-40	RW	℃
0x0199	Upper temperature limit - Hot water heat source combined temperature	15-80	RW	℃
0x019A	Upper temperature limit - Heating water heat source combined temperature	15-80	RW	℃
0x019B	Compressor code	0～9999	RW	
0x019C	ON/OFF - Auxiliary electronic expansion valve	0～10	RW	0-Enable/1-Diasble
0x019D	Auxiliary electronic expansion valve to reduce the temperature differential	0～99	RW	℃
0x019E	Ambient temperature - Heating Limit Outlet Temperature	-45～30	RW	℃
0x019F	Temperature limit constant a	0～150	RW	
0x01A0	Temperature limit coefficient b	-500～500	RW	
0x01A1	Auxiliary pump selection	0～10	RW	0-DHW/1-Cooling/2-Underfloor heating/3-Heating&Cooling/4-Above all
0x01A2	Anti-freezing interval - Hot water pipes	0～360	RW	min
0x01A3	Water pump speed regulation - Minimum speed	0～70	RW	%
0x01A4	Level control	0～10	RW	0-Enable/3-Disable
0x01A5	Load return differential	1～15	RW	℃
0x01A6	Lightening back to the poor	1～15	RW	℃
0x01A7	Stop back to the poor	1～15	RW	℃
0x01A8	Hot water mode start ratio	1～100	RW	%
0x01A9	Non-hot water mode start ratio	1～100	RW	%
0x01AA	Loading cycle	3～60	RW	min

0x01AB	Ambient temperature - Shielded low voltage switch protection	-50～0	RW	℃
0x01AC	DC fan target frequency constant c - heating	40～70	RW	HZ
0x01AD	Fan minimum target frequency - heating	20～65	RW	Hz
0x01AE	Main valve opening - defrost	0～480	RW	P
0x01AF	Pump interval cycle - unit shutdown at constant temperature	0～360	RW	min
0x01B0	Compressor minimum running time - in defrosting	0-999	RW	S
0x01B1	Defrost frequency setting value - in different water temperature	0～80	RW	℃
0x01B2	Defrosting frequency - High water temperature	40～120Hz	RW	Hz
0x01B3	Target frequency - Power mode	0～40Hz	RW	Hz
0x01B4	Target frequency upper limit- Power mode	0～40	RW	Hz
0x01B5	Defrost selection - Evaporate side	0～2	RW	0-Current/1-Heating/2-DHW
0x01B6	Pipe electric heating option	0～2	RW	0-3kW+6kW/ 1- 3kW/ 2-6kW/ 3-Disabled
0x01B7	Parameter password setting	0～9999	RW	0-Diasble
0x01B8	D1 working condition compressor frequency	0～120	RW	HZ
0x01B9	C1 working condition compressor frequency	0～120	RW	HZ
0x01BA	B1working condition compressor frequency	0～120	RW	HZ
0x01BB	A1working condition compressor frequency	0～120	RW	HZ
0x01BC	F1 working condition compressor frequency	0～120	RW	HZ
0x01BD	D2 working condition compressor frequency	0～120	RW	HZ
0x01BE	C2 working condition compressor frequency	0～120	RW	HZ
0x01BF	B2 working condition compressor frequency	0～120	RW	HZ
0x01C0	A2 working condition compressor frequency	0～120	RW	HZ
0x01C1	F2 working condition compressor frequency	0～120	RW	HZ
0x01C2	D1 working condition fan frequency	0～60	RW	HZ
0x01C3	C1 working condition fan frequency	0～60	RW	HZ
0x01C4	B1 working condition fan frequency	0～60	RW	HZ
0x01C5	A1 working condition fan frequency	0～60	RW	HZ
0x01C6	F1 working condition fan frequency	0～60	RW	HZ
0x01C7	D2 working condition fan frequency	0～60	RW	HZ
0x01C8	C2 working condition fan frequency	0～60	RW	HZ
0x01C9	B2 working condition fan frequency	0～60	RW	HZ
0x01CA	A2 working condition fan frequency	0～60	RW	HZ
0x01CB	F2 working condition fan frequency	0～60	RW	HZ
0x01CC	D1 working condition main valve target overheat	-10～10	RW	℃
0x01CD	C1 working condition main valve target overheat	-10～10	RW	℃

0x01CE	B1 working condition main valve target overheat	-10～10	RW	℃
0x01CF	A1 working condition main valve target overheat	-10～10	RW	℃
0x01D0	F1 working condition main valve target overheat	-10～10	RW	℃
0x01D1	D2 working condition main valve target overheat	-10～10	RW	℃
0x01D2	C2 working condition main valve target overheat	-10～10	RW	℃
0x01D3	B2 working condition main valve target overheat	-10～10	RW	℃
0x01D4	A2 working condition main valve target overheat	-10～10	RW	℃
0x01D5	F2 working condition main valve target overheat	-10～10	RW	℃
0x01D6	Initial opening of main valve in D1 working condition	0～500	RW	P
0x01D7	Initial opening of main valve in C1 working condition	0～500	RW	P
0x01D8	Initial opening of main valve in B1 working condition	0～500	RW	P
0x01D9	Initial opening of main valve in A1 working condition	0～500	RW	P
0x01DA	Initial opening of main valve in F1 working condition	0～500	RW	P
0x01DB	Initial opening of main valve in D2 working condition	0～500	RW	P
0x01DC	Initial opening of main valve in C2 working condition	0～500	RW	P
0x01DD	Initial opening of main valve in B2 working condition	0～500	RW	P
0x01DE	Initial opening of main valve in A2 working condition	0～500	RW	P
0x01DF	Initial opening of main valve in F2 working condition	0～500	RW	P
0x01E0	D1 working condition auxiliary valve target overheat	-10～10	RW	℃
0x01E1	C1 working condition auxiliary valve target overheat	-10～10	RW	℃
0x01E2	B1 working condition auxiliary valve target overheat	-10～10	RW	℃
0x01E3	A1 working condition auxiliary valve target overheat	-10～10	RW	℃
0x01E4	F1 working condition auxiliary valve target overheat	-10～10	RW	℃
0x01E5	D2 working condition auxiliary valve target overheat	-10～10	RW	℃
0x01E6	C2 working condition auxiliary valve target overheat	-10～10	RW	℃
0x01E7	Auxiliary valve target overheats in B2 working condition	-10～10	RW	℃
0x01E8	Auxiliary valve target overheats in A2 working condition	-10～10	RW	℃
0x01E9	Auxiliary valve target overheats in F2 working condition	-10～10	RW	℃
0x01EA	Initial opening of auxiliary valve in D1 working condition	0～500	RW	P

0x01EB	Initial opening of auxiliary valve in C1 working condition	0～500	RW	P
0x01EC	Initial opening of auxiliary valve in B1 working condition	0～500	RW	P
0x01ED	Initial opening of auxiliary valve in A1 working condition	0～500	RW	P
0x01EE	Initial opening of auxiliary valve in F1 working condition	0～500	RW	P
0x01EF	Initial opening of auxiliary valve in D2 working condition	0～500	RW	P
0x01F0	Initial opening of auxiliary valve in C2 working condition	0～500	RW	P
0x01F1	Initial opening of auxiliary valve in B2 working condition	0～500	RW	P
0x01F2	Initial opening of auxiliary valve in A2 working condition	0～500	RW	P
0x01F3	Initial opening of auxiliary valve in F2 working condition	0～500	RW	P
0x01F4	Target water flow in low water temperature condition	0～100	RW	L/min
0x01F5	Target water flow under high water temperature conditions	0～100	RW	L/min
0x01F6	Low water temperature rated fan frequency	0～60	RW	Hz
0x01F7	Initial opening of main valve under low water temperature rated condition	0～500	RW	P
0x01F8	High water temperature rated fan frequency	0～60	RW	Hz
0x01F9	Initial opening of main valve under high water temperature rated condition	0～500	RW	P
0x01FA	Target overheat of main valve under low water temperature rated condition	-10～10	RW	℃
0x01FB	PFC shutdown current	0～50	RW	A
0x01FC	Target overheat of main valve under high water temperature rated condition	-10～10	RW	℃
0x01FD	PFC turn-on current	0～50	RW	A
0x01FE	Heating medium	0～1	RW	0-Water/1-Antifreeze Liquid
0x01FF	Smart Grid Options - On/Off	0～1	RW	0-Enable/1-Diasble
0x0200	Smart Grid Options - Peak grid running time	30～999	RW	min
0x0201	Dual temperature zone selection	0～2	RW	1-Power on/2-Power on/off on demand/3-temperature control
0x0202	Mixed water regulating valve cycle	5～20	RW	min
0x0203	Mixing valve full cycle time	0～180	RW	S
0x0204	Maximum water pump speed	50～99	RW	%
0x0205	Water pump speed - at constant temperature	20～99	RW	%
0x0206	Testing mode - on/off	0～1	RW	0-Enable/1-Diasble
0x0207	Frequency increase time - Exit exhaust overheat limit	3～240	RW	min
0x0208	Percentage correction for main valve opening - Running at initial frequency	30～100	RW	%

0x0209	Percentage of mixing valve adjustment			
0x020A	Dual temperature zone mode selection	0～1	RW	0-Standard Dual Temperature Zone / 1-Intelligent Dual Temperature Zone
0x020B	Dual temperature zone control return temperature	0～30	RW	℃

4. User Parameter 0x0300～0x032F

Adress	Name	Address Ranges	Default Value	Read-Write	Note
0x0300	Temp. Set-Cooling	7-25	12	RW	
0x0301	Temp. Set-Heating	20-60	55	RW	
0x0302	Temp. Set-Hot Water	20-75	55	RW	
0x0303	Temp. Set-Floor Heating	20-60	50	RW	
0x0304	Mode	0-Cooling 1-Heating 2-DHW 3-Floor Heating 4-DHW + Cooling 5-DHW + Heating 6-Reserve 7-DHW + Floor Heating		RW	
0x0305	ON/OFF	0-OFF/1-ON		RW	
0x0306	Indoor Temperature Setting			RW	
0x0307	User Functions	0-Standard Mode 1-Powerful Mode 2-Silent mode		RW	
0x0308	Reserve			RW	
0x0309	Reserve			RW	
0x030A	Function Mode	Reserve		RW	
0x030B				RW	
0x030C	Heating/Underfloor Heating Curve Setting	High 8-bit: Underfloor heating curve Low 8-bit: heating curve		RW	
0x030D	Hot water/cooling curve setting	High 8-bit: cooling curve Low 8-bit: hot water curve		RW	
0x030E	Reserve			RW	
0x030F	Reserve			RW	
0x0310	Reserve			RW	
0x0311	Reserve			RW	
0x0312	Reserve			RW	
0x0313	Cooling Setting Curve	0-8 11-18	0	RW	Communication protocol ≥ 130 valid
0x0314	Heating Setting Curve	0-8 11-18	0	RW	Communication protocol ≥ 130 valid
0x0315	Hot Water Setting Curve	0-4	0	RW	Communication protocol ≥ 130 valid
0x0316	Underfloor Heating Setting Curve	0-8 11-18	0	RW	Communication protocol ≥ 130 valid

0x0317	Temp. Zone 2				
0x0318					
0x0319	Temp. Zone 1				

NOTE：0-Disable/1-8High Temp. Curve 1-8/11/2-Low Temp. Curve 1-8

5. User Commands 0x0330～0x035F
Unit forced control, frequency/speed of forced control

Adress	Name	Address Ranges		Default Value	Read-Write	Note
0x0330	Unit Control	Bit0	0		RW	
		Bit1	0			
		Bit2	Quick Heat Mode			
		Bit3	Forced entry defrost			
		Bit4	System Evacuation Mode			
		Bit5	Refrigerant Recovery			
		Bit6	0			
		Bit7	0			
		Bit8	Forced sterilization			
		Bit9	0			
		Bit10	Allowed water return			
		Bit11	0			
		Bit12	0			
		Bit13	Restore Factory Defaults			
		Bit14	0			
		Bit15	0			
0x0331	Load Forcing Control	Bit0	Compressor Forced Control		RW	
		Bit1	EEV forced control			
		Bit2	EVI forced control			
		Bit3	Fan forced control			
		Bit4	0			
		Bit5	0			
		Bit6	0			
		Bit7	0			
		Bit8	0			
		Bit9	0			
		Bit10	0			
		Bit11	0			
		Bit12	0			
		Bit13	0			
		Bit14				
0x0332	Compressor 1 forced frequency	0-120Hz			RW	
0x0333	Compressor 2 forced frequency	0-120Hz			RW	
0x0334		0			RW	
0x0335		0			RW	
0x0336	EEV 1 forced open	0-500P			RW	
0x0337	EEV 2 forced open	0-500P			RW	
0x0338		0			RW	
0x0339		0			RW	
0x033A	EVI EEV 1 forced	0-500P			RW	

	open				
0x033B	EVI EEV 2 forced open	0-500P		RW	
0x033C		0		RW	
0x033D		0		RW	
0x033E	Fan forced speed	0-80Hz		RW	
0x033F		0		RW	
0x0340		0		RW	
0x0341		0		RW	
0x0342		0		RW	
0x0343	DC Pump Control	0-Auto/1-Manual			
0x0344	DC Pump Output	0-100%			
0x0345	PFC control	0-Auto/1-Open/Close/2-Open			
0x0346					

6. Version Information 0x0360~0x036F (Product Model,/Customized Version/Software Version)

Adress	Name	Address Ranges	Default Value	Read-Write	Note
0x0360	Program Version	100		R	V1.0.
0x0361	Product Type	0		R	
0x0362	Product Type ID Number	1		R	
0x0363	Protocol Version	100		R	V1.0.0

NOTE:

Product Type:

0-Commercial inverter unit/1-Domestic ON/OFF unit/2-Commercial ON/OFF unit

Product Type ID Number

0-Commercial inverter unit/0：Commercial inverter 2-unit/1- Commercial inverter 3-unit

1-Domestic ON/OFF unit/0-Domestic inverter unit

2-Commercial ON/OFF unit/0-Commercial inverter unit

11.Fatory Parameter L 0x0800～0x083F
Parameter numbers start from L11; L0-L10 remain unchanged.

Adress	Name	Address Ranges	Read-Write	Note
0x0800	Pipeline electric heater loading cycle	1～300min	RW	
0x0801	Sterilization	0～2	RW	
0x0802	Days between Sterilizations	5～30 Day	RW	
0x0803	Sterilization Start-up Time	00:00-24:00	RW	
0x0804	Sterilization Running Time	0-50Min	RW	
0x0805	Sterilization Temp Setting	50-80℃	RW	
0x0806			RW	

0x0807			RW	
0x0808			RW	
0x0809			RW	
0x080A			RW	
0x080B	DHW return water Setting	0～10	RW	0-Disable / 1-Continuous return / 2-Cycle return / 3-Temperature difference return
0x080C	Return Water Temp Setting	20～65℃	RW	
0x080D	Return Water Return Temp Differential	1～15℃	RW	
0x080E	Return Water Interval Period	**3**～90min	RW	
0x080F	Return Water Running Period	1～30min	RW	
0x0810	Heating low temperature curve DIY	0～1	RW	0-Enable /-Disable
0x0811	Heating low temperature curve coefficient k	0～-50	RW	Set temperature = k*(ambient temperature + 15) + b
0x0812	Heating low temperature curve constant b	30～80	RW	Set temperature = k*(ambient temperature + 15) + b
0x0813	Heating capacity statistics	0～1	RW	0-Enable /-Disable
0x0814	External pump flow rate	0～999	RW	Unit: L/min
0x0815	Hot water electric heater power	0～9999	RW	Unit: W
0x0816	Pipe electric heater 1 power	0～9999	RW	Unit: W
0x0817	Pipe electric heater 2 power	0～9999	RW	Unit: W
0x0818	Heating electric heater power	0～9999	RW	Unit: W
0x0819	External water pump power	0～9999	RW	Unit: W
0x081A				

11. Coil Address 0X1000-0X10FF
Access Command 01H、05H

Adress	Name	Address Ranges	Read-Write	Note
0x1000	Powerful Mode		RW	
0x1001	Silent Mode		RW	
0x1002	Reserve		RW	
0x1003	Reserve		RW	
0x1004	Reserve		RW	
0x1005	Reserve		RW	
0x1006	Reserve		RW	
0x1007	Reserve		RW	
0x1008	Reserve		RW	
0x1009	Reserve		RW	
0x100A	Reserve		RW	
0x100B	Reserve		RW	
0x100C	Reserve		RW	
0x100D	Reserve		RW	
0x100E	Reserve		RW	
0x100F	Reserve		RW	
0x1010	Reserve		RW	
0x1011	Reserve		RW	
0x1012	Quick Heat Mode		RW	
0x1013	Force Enter Defrost		RW	
0x1014	System Drain Mode		RW	
0x1015	Refrigerant Recovery		RW	
0x1016	Reserve		RW	
0x1017	Reserve		RW	
0x1018	Force Sterilization		RW	

	Restore factory defaults			
0x1019	Reserve		RW	
0x101A	Allow Return Water		RW	
0x101B	Reserve		RW	
0x101C	Reserve		RW	
0x101D	Restore Factory Setting		RW	
0x101E	Reserve		RW	
0x101F	Reserve		RW	
0x1020	Compressor Forced Control		RW	
0x1021	EEV Forced Control		RW	
0x1022	EVI Forced Control		RW	
0x1023	Fan Forced Control		RW	
0x1024				
0x1025				
0x1026				
0x1027				
0x1028				
0x1029				
0x102A				
0x102B				
0x102C				
0x102D				
0x102E				
0x102F				