

## **8 MODBUS MAPPING TABLE**

### **8.1 Modbus Port Communication Specification**

Port: RS-485; the wired controller XYE is the communication port for connecting with the hydraulic module. H1 and H2 are the Modbus communication ports.

Communication address: It is consistent with the DIP switch address of the hydraulic module.

Baud rate: 9600.

Number of digits: Eight

Verification: none

Stop Bit: 1 bit

Communication protocol: Modbus RTU (Modbus ASCII is not supported)

### 8.1.1 Mapping of registers in the wired controller

The following addresses can use 03H, 06H (write single register), 10H (write multiple register)

Register address	Description	Remarks	
0 (PLC:40001)	Power on or off.	BIT15	Reserved
		BIT14	Reserved
		BIT13	Reserved
		BIT12	Reserved
		BIT11	Reserved
		BIT10	Reserved
		BIT9	Reserved
		BIT8	Reserved
		BIT7	Reserved
		BIT6	Reserved
		BIT5	Reserved
		BIT4	Reserved
		BIT3	0:power off air conditioner; 1: power on air conditioner(zone 2)
		BIT2	0: DHW(T5S) power off; 1: DHW(T5S) power on
		BIT1	0:power off air conditioner; 1: power on air conditioner(zone 1)
		BIT0	0: power off floor heating; 1: power on floor heating

1 (PLC:40002)	Setting the mode	1: Auto; 2: Cool; 3: Heat; Others: Invalid	
2 (PLC:40003)	Setting water temperature T1s	Water temperature T1s is corresponding to the floor heating.	
3 (PLC:40004)	Setting air temperature Ts	The room temperature range is between 17°C and 30°C, and is valid when there is Ta.	
4 (PLC:40005)	T5s	The water tank temperature range is between 40°C and 60°C.	
5 (PLC:40006)	Function setting	BIT15	Reserved
		BIT14	Reserved
		BIT13	Reserved
		BIT12	1: curve setting is enabled; 0: curve setting is disabled.
		BIT11	DHW pump's running constant-temperature water recycling
		BIT10	ECO mode
		BIT9	Reserved
		BIT8	Holiday home (the status can only be read, not changed)
		BIT7	0: Silent mode level1; 1: Silent mode level2
		BIT6:	Silent mode
		BIT5:	Holiday away (the status can only be read, but cannot be changed)
BIT4:	Disinfect		
BIT3:	Reserved		
BIT2:	Reserved		
BIT1:	Reserved		
BIT0:	Reserved		
6 (PLC:40007)	Curve selection	Curve 1-8	
7 (PLC:40008)	Forced water heating	0: Invalid 1: Forced on 2: Forced off	TBH is the electric water tank heater. IBH1 and 2 are the hydraulic module's rear electric heater. IBH1 and 2 can be activated together. TBH cannot be activated together with IBH1 and 2.
8 (PLC:40009)	Forced TBH		
9 (PLC:40010)	Forced IBH1		
10 (PLC:40011)	t_SG_MAX	0-24 Hours	

In cooling mode, T1S low temp setting range is 5~25°C; T1S high temp setting range is 18~25°C.  
In heating mode, T1S low temp setting range is 22~55°C; T1S high temp setting range is 35~60°C.

8.1.2 When the wired controller is connected to the hydraulic module, the parameters of the whole unit can be checked:

### ***Whole unit parameter mapping address table***

#### 1) Running parameters

Register address	Description	Remarks
100 (PLC:40101)	Operating frequency	Compressor operating frequency in Hz
101 (PLC:40102)	Operating Mode	Whole unit's actual operating mode, 2: cooling, 3: heating, 0: off
102 (PLC:40103)	Fan Speed	Fan speed, in r/min
103 (PLC:40104)	PMV openness	Openness of the outdoor unit's electronic expansion valve in P (only multiples of 8 are shown)
104 (PLC:40105)	Water inlet temperature	TW_in, in °C
105 (PLC:40106)	Water outlet temperature	TW_out, in °C
106 (PLC:40107)	T3 Temperature	Condenser temperature, in °C
107 (PLC:40108)	T4 Temperature	Outdoor ambient temperature in °C
108 (PLC:40109)	Discharge temperature	Compressor discharge temperature Tp in °C
109 (PLC:40110)	Return air temperature	Compressor air return temperature in °C
110 (PLC:40111)	T1	Total water outlet temperature in °C
111 (PLC:40112)	T1B	System total water outlet temperature (behind the auxiliary heater) °C
112 (PLC:40113)	T2	Refrigerant liquid side temperature in °C
113 (PLC:40114)	T2B	Refrigerant gas side temperature in °C
114 (PLC:40115)	Ta	Room temperature, in °C
115 (PLC:40116)	T5	Water tank temperature
116 (PLC:40117)	Pressure 1	Outdoor unit high pressure value, in kPa
117 (PLC:40118)	Pressure 2	Outdoor unit low pressure value, in kPa
118 (PLC:40119)	Outdoor unit current	Outdoor unit operating current, in A
119 (PLC:40120)	Outdoor unit voltage	Outdoor unit voltage in V
120 (PLC:40121)	Hydraulic module current 1	Hydraulic module current 1 in A (reserved)
121 (PLC:40122)	Hydraulic module current 2	Hydraulic module current 2 in A (reserved)
122 (PLC:40123)	Compressor operating time	Compressor operating time in hour
123 (PLC:40124)	Reserved	Reserved
124 (PLC:40125)	Current fault	Check the code table for detailed fault codes
125 (PLC:40126)	Fault 1	Check the code table for detailed fault codes.
126 (PLC:40127)	Fault 2	
127 (PLC:40128)	Fault 3	

128 (PLC:40129)	Status bit 1	BIT15	Reserved
		BIT14	Reserved
		BIT13	Reserved
		BIT12	Reserved
		BIT11	EUV 1:free electricity; 0:judge by SG's signal
		BIT10	SG 1:normal electricity; 0:high price electricity (judge when EUV is 0)
		BIT9	Reserved
		BIT8	Solar energy signal input
		BIT7	Room temperature controller cooling
		BIT6:	Room temperature controller heating
		BIT5:	Outdoor unit test mode mark
		BIT4:	Remote On/Off (1: d8)
		BIT3:	Oil return
		BIT2:	Anti-freezing
BIT1:	Defrosting		
BIT0:	Reserved		
129 (PLC:40130)	Load output	BIT15	DEFROST
		BIT14	External heater
		BIT13	RUN
		BIT12	ALARM
		BIT11	Solar water pump
		BIT10	HEAT4
		BIT9	SV2
		BIT8	Mixed water pump P_c
		BIT7	Water return water P_d
		BIT6:	External water pump P_o
		BIT5:	Reserved
		BIT4:	SV1
		BIT3:	Water pump PUMP_I
		BIT2:	Electric heater TBH
BIT1:	Reserved		
BIT0:	Electric heater IBH1		
130 (PLC:40131)	Whole unit version No.	1~99 is the whole unit's version number and refers to the hydraulic module's version number.	
131 (PLC:40132)	Wired controller version No.	1~99 is the wired controller's version number.	

132 (PLC:40133)	Unit target frequency	
133 (PLC:40134)	Dc bus current	In A
134 (PLC:40135)	Dc bus voltage	The actual value/10, in V
135 (PLC:40136)	TF module temperature	Feedback on outdoor unit,in °C
136 (PLC:40137)	Hydraulic module curve T1S calculated value 1	The corresponding calculated value of zone 1
137 (PLC:40138)	Hydraulic module curve T1S calculated value 2	The corresponding calculated value of zone 2
138 (PLC:40139)	Water flow	The actual value*100, in m <sup>3</sup> /H
139 (PLC:40140)	Limit scheme of outdoor unit current	Scheme value
140 (PLC:40141)	Ability of Hydraulic module	The actual value*100, in kW

## 2) Parameter setting

Register address	Description	Remarks	
200 (PLC:40201)	Home appliance type	The upper 8 bit is the home appliance type: Central heating: 0x07	
201 (PLC: 40202)	Temperature upper limit of T1S cooling		
202 (PLC: 40203)	Temperature lower limit of T1S cooling		
203 (PLC: 40204)	Temperature upper limit of T1S heating		
204 (PLC: 40205)	Temperature lower limit of T1S heating		
205 (PLC: 40206)	Temperature upper limit of TS setting		
206 (PLC: 40207)	Temperature lower limit of TS setting		
207 (PLC: 40208)	Temperature upper limit of water heating		
208 (PLC: 40209)	Temperature lower limit of water heating		
209 (PLC: 40210)	PUMP RUNNING TIME	DHW PUMP water return running time. It is five minutes by default and can be adjusted between 5 and 120 min at an interval of 1 min.	
210 (PLC: 40211)	Parameter setting 1	BIT15	Enable water heating
		BIT14	Supports water tank electric heater TBH(Read-only)
		BIT13	Supports disinfection
		BIT12	DHW PUMP, 1: supported; 0: not supported
		BIT11	Reserved
		BIT10	DHW pump supports Pipe Disinfect
		BIT9	Enable cooling
		BIT8	T1S cooling high/low temperature settings(Read-only)
		BIT7	Enable heating
		BIT6:	T1S heating high/low temperature settings(Read-only)
		BIT5:	Supports T1 sensor
		BIT4:	Supports room temperature Sensor Ta
		BIT3:	Supports room thermostat
		BIT2:	Room thermostat
BIT1:	Dual Room Thermostat, 0: not supported; 1: supported		
BIT0:	0: room cooling/heating first, 1: water heating first		

211 (PLC:40212)	Parameter setting 2	BIT15	Reserved
		BIT14	Reserved
		BIT13	Reserved
		BIT12	Reserved
		BIT11	Reserved
		BIT10	Reserved
		BIT9	Reserved
		BIT8	Define the port, 0=remote ON/OFF; 1=DHW heater
		BIT7	Smart grid, 0=NON; 1=YES
		BIT6:	Enable or disable the Tw2, 0=NON ; 1=YES
		BIT5:	Setting the high/low temperature of cooling mode T1S
		BIT4:	Setting the high/low temperature of heating mode T1S
		BIT3:	Double zone setting is valid
		BIT2:	Reserved
BIT1:	Reserved		
BIT0:	Reserved		
212 (PLC: 40213)	dT5_On	Default setting: 5°C, range: 2~10°C, setting interval: 1°C	
213 (PLC: 40214)	dT1S5	Default setting: 10°C, range: 5~40°C, setting interval: 1°C	
214 (PLC: 40215)	T_Interval_DHW	Default setting: 5 min, range: 5~30 min, setting interval: 1 min	
215 (PLC: 40216)	T4DHWmax	Default setting: 43°C, range: 35~43°C, setting interval: 1°C	
216 (PLC: 40217)	T4DHWmin	Default setting: -10°C, range: -25~5°C, setting interval: 1°C	
217 (PLC: 40218)	t_TBH_delay	Default setting: 30 min, range: 0~240 min, setting interval: 5 min	
218 (PLC: 40219)	dT5_TBH_off	Default setting: 5°C, range: 0~10°C, setting interval: 1°C	
219 (PLC: 40220)	T4_TBH_on	Default setting: 5°C, range: -5~20°C, setting interval: 1°C	
220 (PLC: 40221)	T5s_DI	Temperature of the disinfection water tank, range: 60~70°C, default setting: 65°C	



221 (PLC: 40222)	<b>t_DI_max</b>	Maximum disinfection duration, range: 90~300 min, default setting: 210 min
222 (PLC: 40223)	<b>t_DI_hightemp</b>	Disinfection high temperature duration, range: 5~60 min, default setting: 15 min
223 (PLC: 40224)	<b>t_interval_C</b>	Time interval of compressor start-up in cooling mode; range: 5~30 min, default setting: 5 min
224 (PLC: 40225)	<b>dT1SC</b>	Default setting: 5°C, range: 2~10°C, setting interval: 1°C
225 (PLC: 40226)	<b>dTSC</b>	Default setting: 2°C, range: 1~10°C, setting interval: 1°C
226 (PLC: 40227)	<b>T4cmax</b>	Default setting: 43°C, range: 35~46°C, setting interval: 1°C
227 (PLC: 40228)	<b>T4cmin</b>	Default setting: 10°C, range: -5~25°C, setting interval: 1°C
228 (PLC: 40229)	<b>t_interval_H</b>	Time interval of compressor start-up in the heating mode; range: 5~60 min, default setting: 5 min
229 (PLC: 40230)	<b>dT1SH</b>	Default setting: 5°C, range: 2~10°C, setting interval: 1°C
230 (PLC: 40231)	<b>dTSH</b>	Default setting: 2°C, range: 1~10°C, setting interval: 1°C
231 (PLC: 40232)	<b>T4hmax</b>	Default setting: 25°C, range: 20~35°C, setting interval: 1°C
232 (PLC: 40233)	<b>T4hmin</b>	Default setting: -15°C, range: -25~5°C, setting interval: 1°C
233 (PLC: 40234)	<b>T4_IBH_on</b>	Ambient temperature for enabling the hydraulic module auxiliary electric heating IBH, range: -15~10°C; default setting: -5°C
234 (PLC: 40235)	<b>dT1_IBH_on</b>	Temperature return difference for enabling the hydraulic module auxiliary electric heating IBH, range: 2~10°C; default setting: 5°C
235 (PLC: 40236)	<b>t_IBH_delay</b>	Delay time of enabling the hydraulic module auxiliary electric heating IBH, range: 15~120 min; default setting: 30 min

237 (PLC: 40238)	<b>T4_AHS_on</b>	Ambient temperature for enabling the external heater AHS, range: -15~10°C, setting interval: -5°C
238 (PLC: 40239)	<b>dT1_AHS_on</b>	Temperature return difference for enabling the external heater AHS, range: 2~10°C; default setting: 5°C

240 (PLC: 40241)	<b>t_AHS_delay</b>	Delay time for enabling the external heater AHS, range: 5~120 min; default setting: 30 min
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241 (PLC: 40242)	t_DHWHP_max	Longest duration of water heating by the heat pump, range: 10~600 min, default setting: 120 min;
242 (PLC: 40243)	t_DHWHP_restrict	Duration of limited water heating by the heat pump, range: 10~600 min, default setting: 30 min;
243 (PLC: 40244)	T4autocmin	Default setting: 25°C, range: 20~29°C, setting interval: 1°C
244 (PLC: 40245)	T4autohmax	Default setting: 17°C, range: 10~17°C, setting interval: 1°C
245 (PLC: 40246)	T1S_H.A.H	In the holiday mode, setting of T1 in the heating mode, range: 20~25°C, default setting: 25°C
246 (PLC: 40247)	T5S_H.A.DHW	In the holiday mode, setting of T1 in the water heating mode, range: 20~25°C, default setting: 25°C
247 (PLC: 40248)	ECO parameter	Reserved, wrong address is reported when this register is queried
248 (PLC: 40249)	ECO parameter	Reserved, wrong address is reported when this register is queried
249 (PLC: 40250)	ECO parameter	Reserved, wrong address is reported when this register is queried
250 (P LC:40251)	ECO parameter	Reserved, wrong address is reported when this register is queried
251 (PLC: 40252)	Comfort parameter	Reserved, wrong address is reported when this register is queried
252 (P LC:40253)	Comfort parameter	Reserved, wrong address is reported when this register is queried
253 (PLC: 40254)	Comfort parameter	Reserved, wrong address is reported when this register is queried
254 (P LC:40255)	Comfort parameter	Reserved, wrong address is reported when this register is queried
255 (PLC: 40256)	t_DRYUP	Temperature rise day number, range: 4~15 days, default setting: 8 days
256 (PLC: 40257)	t_HIGHPEAK	Drying day number, range: 3~7 days, default setting: 5 days
257 (PLC: 40258)	t_DRYD	Temperature drop day number, range: 4~15 days, default setting: 5 days
258 (PLC: 40259)	T_DRYPEAK	Highest drying temperature, range: 30~55°C, default setting: 45°C
259 (PLC: 40260)	t_firstFH	Running time of floor heating for the first time, default setting: 72 hrs, range: 48-96 hrs
260 (PLC: 40261)	T1S (first floor heating)	T1S of floor heating for the first time, range: 25~35°C, default setting: 25°C

261 (PLC: 40262)	T1SetC1	Parameter of the ninth temperature curves for cooling mode, range:5~25 °C, default setting: 10 °C;
262 (PLC: 40263)	T1SetC2	Parameter of the ninth temperature curves for cooling mode, range:5~25 °C, default setting: 16 °C;
263 (PLC: 40264)	T4C1	Parameter of the ninth temperature curves for cooling mode, range:(-5)~46 °C, default setting: 35 °C;
264 (PLC: 40265)	T4C2	Parameter of the ninth temperature curves for cooling mode, range:(-5)~46 °C, default setting: 25 °C;
265 (PLC: 40266)	T1SetH1	Parameter of the ninth temperature curves for cooling mode, range:25~60 °C, default setting: 35 °C;
266 (PLC: 40267)	T1SetH2	Parameter of the ninth temperature curves for cooling mode, range:25~60 °C, default setting: 28 °C;
267 (PLC: 40268)	T4H1	Parameter of the ninth temperature curves for cooling mode, range:(-25)~30 °C, default setting: -5 °C;
268 (PLC: 40269)	T4H2	Parameter of the ninth temperature curves for cooling mode, range:(-25)~30 °C, default setting: 7 °C;
269 (PLC: 40270)		The type of power input limitation, 0=NON, 1~8=type 1~8, default:0
270 (PLC: 40271)	HB:t_T4_FRESH_C	range:0.5~6 hour, setting interval:0.5 hour, sending value=actual value*2
	LB:t_T4_FRESH_H	range:0.5~6 hour, setting interval:0.5 hour, sending value=actual value*2
271 (PLC: 40272)	T_PUMPI_DELAY	range:2~20 hour, setting interval:0.5 hour, sending value=actual value*2:
272 (PLC: 40273)	EMISSION TYPE	Bit12-15: The type of zone 2 end for cooling mode
		Bit8-11: The type of zone 1 end for cooling mode
		Bit4-7: The type of zone 2 end for heating mode
		Bit0-3: The type of zone 1 end for heating mode



## NOTE

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A series of 18 horizontal dotted lines for writing notes.

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