Parameters Description Manual

R290 Monoblock

Air to Water Heat Pump

Capacity	Models
4kw	ACHP-H04/4R2HA-M ACHP-H04/4R2HA-M(NE)
6kw	ACHP-H06/4R2HA-M ACHP-H06/4R2HA-M(NE)
8kw	ACHP-H08/4R2HA-M ACHP-H08/5R2HA-M ACHP-H08/4R2HA-M(NE)
10kw	ACHP-H10/4R2HA-M ACHP-H10/5R2HA-M ACHP-H10/4R2HA-M(NE)
12kw	ACHP-H12/4R2HA-M ACHP-H12/5R2HA-M ACHP-H12/4R2HA-M(NE) ACHP-H12/5R2HA-M(NE)
14kw	ACHP-H14/4R2HA-M ACHP-H14/5R2HA-M ACHP-H14/4R2HA-M(NE) ACHP-H14/5R2HA-M(NE)
16kw	ACHP-H16/4R2HA-M ACHP-H16/5R2HA-M ACHP-H16/4R2HA-M(NE) ACHP-H16/5R2HA-M(NE)

Version 2

2024-07-01

Contents

1. Summary Table

4Parameters	Code	Range	Default value	Adjust value
DHW mode enable or not	DHW MODE	YES/NON	YES	/
Disinfection function enable or not	DISINFECT	YES/NON	YES	/
DHW priority	DHW PRIORITY	YES/NON	YES	/
DHW pump	DHW PUMP	YES/NON	YES	/
Maximum ambient temp. allowed for DHW mode operation	Tao_DHWMAX	35～43℃	43	1℃
Minimum ambient temp. allowed for DHW mode operation	Tao_DHWMIN	-25～5℃	-10	1℃
Disinfection tank temp	Twt_DI	60～75℃	70	1℃
Delay time for tank electric heater operation (compare with compressor)	t_TBH_DELAY	0～240mim	30	1min
Disinfection during time	t_DI_HIGHTEMP.	5～60min	15	1min
Disinfection operation maximum time	t_DI_MAX	90～300min	210	10min
Cooling/heating operation restrict time	t_DHWHP_RESTRICT	10～600min	30	10min
DHW mode operation maximum time	t_DHWHP_MAX	10～600min	90	10min
DHW pump operation time	DHW PUMP RUN TIME	5～120min	5	5min
DHW mode turn on different temp	dTSDHW_ON	2～10℃	5	1℃
Circle pump operation maximum temp. when DHW mode in standby	Tao_PUMP_ON	-25～10℃	3	1℃
Cooling mode enable or not	COOL MODE	YES/NON	YES	/
Maximum ambient temp. allowed for cooling mode operation	Tao_CMAX	35～60℃	43	1℃
Minimum ambient temp. allowed for cooling mode operation	Tao_CMIN	-5～25℃	10	1℃
Cooling mode ambient temp. refresh time	t_Tao_FRESH_C	1～30	5	1min
Cooling mode turn on different temp	dTSC_OFF	2～10℃	2	1℃
Cooling mode turn off different temp	dTSC_ON	2～10℃	5	1℃
Cooling mode set water temp. 1	TsetAC_C1	5～25℃	10	1℃
Cooling mode set water temp. 2	TsetAC_C2	5～25℃	16	1℃
Cooling mode set ambient temp. 1	Tao_C1	-5～46℃	35	1℃
Cooling mode set ambient temp. 2	Tao_C2	-5～46℃	25	1℃
Zone 1 terminal type of cooling mode	ZONE1 C_EMISSION	RAD/FLH/FCU	FCU	/
Zone 2 terminal type of cooling mode	ZONE2 C_EMISSION	RAD/FLH/FCU	FCU	/
Duty cycle of water pump operation shield with cooling mode 1	P_SHIELD_C1	2.5%～72.5%/NON	/	7%
Duty cycle of water pump operation shield with cooling mode 2	P_SHIELD_C2	2.5%～72.5%/NON	/	7%
Duty cycle of water pump operation shield with cooling mode 3	P_SHIELD_C3	2.5%～72.5%/NON	/	7%
Duty cycle of water pump operation shield with cooling mode 4	P_SHIELD_C4	2.5%～72.5%/NON	/	7%
Duty cycle of water pump operation shield with cooling mode 5	P_SHIELD_C5	2.5%～72.5%/NON	/	7%
Heating mode enable or not	HEAT MODE	YES/NON	YES	/
Maximum ambient temp. allowed for heating mode operation	Tao_HMAX	20～35℃	35	1℃
Minimum ambient temp. allowed for heating mode operation	Tao_HMIN	-25～15℃	-15	1℃
Heating mode ambient temp. refresh time	t_Tao_FRESH_H	1～30	5	1min
Heating mode turn on different temp	dTSH_OFF	2～10℃	2	1℃
Heating mode turn off different temp	dTSH_ON	0～10℃	5	1℃

The leftmost merged column groups: **DHW mode**, **Cooling mode**, **Heating mode**.

	Heating mode set water temp. 1	TsetAC_H1	25～60℃	35	1℃
	Heating mode set water temp. 2	TsetAC_H2	25～60℃	28	1℃
	Heating mode set ambient temp. 1	Tao_H1	-25～35℃	-5	1℃
	Heating mode set ambient temp. 2	Tao_H2	-25～35℃	7	1℃
	Zone 1 terminal type of heating mode	ZONE1 H_EMISSION	RAD/FLH/FCU	RAD	/
	Zone 2 terminal type of heating mode	ZONE2 H_EMISSION	RAD/FLH/FCU	FLH	/
	Duty cycle of water pump operation shield with heating mode and DHW mode 1	P_SHIELD_H1	2.5%～72.5%/NON	/	7%
	Duty cycle of water pump operation shield with heating mode and DHW mode 2	P_SHIELD_H2	2.5%～72.5%/NON	/	7%
	Duty cycle of water pump operation shield with heating mode and DHW mode 3	P_SHIELD_H3	2.5%～72.5%/NON	/	7%
	Duty cycle of water pump operation shield with heating mode and DHW mode 4	P_SHIELD_H4	2.5%～72.5%/NON	/	7%
	Duty cycle of water pump operation shield with heating mode and DHW mode 5	P_SHIELD_H5	2.5%～72.5%/NON	/	7%
Room Temperature Control (Cooling mode)	Fan coil initial target water temp. of cooling mode	TC_INITIAL_FCU	5～25℃	7	1℃
	Floor heating initial target water temp. of cooling mode	TC_INITIAL_FLH	18～25℃	20	1℃
	Upper limit value of water temp. regulation in cooling mode	TC_ADJUST_UP	0～15℃	3	1℃
	Lower limit value of water temp. regulation in cooling mode	TC_ADJUST_DOWN	-15～0℃	-2	1℃
	Cooling mode turn off different room temp	dTRC_OFF	-5～0℃	-0.5	0.1℃
	Cooling mode turn on different room temp	dTRC_ON	0～5℃	0.5	0.1℃
	Cooling mode room temp. correct value	TC_CORRECT	-5～5℃	0	0.5℃
	Room temp. adjust range in cooling mode	TC_INTERVAL	0.1～3℃	0.5	0.1℃
Room Temperature Control (Heating mode)	Floor heating initial target water temp. of heating mode	TH_INITIAL_FLH	25～40℃	35	1℃
	Radiator initial target water temp. of heating mode	TH_INITIAL_RAD	35～60℃	45	1℃
	Fan coil initial target water temp. of heating mode	TH_INITIAL_FCU	30～50℃	40	1℃
	Upper limit value of water temp. regulation in heating mode	TH_ADJUST_UP	0～15℃	5	1℃
	Lower limit value of water temp. regulation in heating mode	TH_ADJUST_DOWN	-15～0℃	-5	1℃
	Maximum water temp. of floor heating in heating mode	TH_MAX_FLH	35～60℃	45	1℃
	Minimum water temp. of floor heating in heating mode	TH_MIN_FLH	25～35℃	30	1℃
	Maximum water temp. of radiator in heating mode	TH_MAX_RAD	35～60℃	50	1℃
	Minimum water temp. of radiator in heating mode	TH_MIN_RAD	25～35℃	35	1℃
	Maximum water temp. of fan coil in heating mode	TH_MAX_FCU	35～60℃	45	1℃
	Minimum water temp. of fan coil in heating mode	TH_MIN_FCU	25～35℃	30	1℃
	Heating mode turn off different room temp	dTRH_OFF	0～5℃	0.5	0.1℃
	Heating mode turn on different room temp	dTRH_ON	-5～0℃	-0.5	0.1℃
	Zone 1 heating mode room temp. correct value	TH_CORRECT	-5～5℃	0	0.5℃
	Zone 2 heating mode room temp. correct value	TH_CORRECT_FLH	-5～5℃	0	0.5℃

	Room temp. adjust range in heating mode	TH_INTERVAL	0.1～3℃	0.5	0.1℃
Room Temperature (normal)	Target water temp. refresh interval time	t_REFRESH	1～30min	10	1min
	Target water temp. refresh value	TW_AV	0.1～3℃	1	0.1℃
AUTO mode	Minimum ambient temp. of cooling mode	Tao_AUTOCMIN	20～35℃	25	1℃
	Maximum ambient temp. of heating mode	Tao_AUTOHMAX	10～17℃	17	1℃
Temperature type	Zone 1 room temp. control	ZONE1 ROOM TEMP	YES/NON	NON	/
	Zone 2 room temp. control	ZONE2 ROOM TEMP	YES/NON	NON	/
	Double zone control	DOUBLE ZONE	YES/NON	NON	/
Thermostat	Room thermostat	ROOM THERMOSTAT	YES/NON	NON	/
Other heating source	Electric heater enables or not	INNER BACKUP HEATER	YES/NON	YES	/
	Electric heater power selection	IBH POWER SELECTION	3kW/6kW/9kW	9kW	/
	Tank heater enable or not	TANK HEATER	YES/NON	YES	/
	Maximum ambient temp. allowed for electric heater operation	Tao_IBH_ON	-15～10℃	-5	1℃
	Maximum ambient temp. allowed for tank electric heater operation	Tao_TBH_ON	-5～20℃	5	1℃
	Maximum ambient temp. allowed for gas boiler operation	Tao_AHS_ON	-25～10℃	-5	1℃
	Delay time for electric heater operation (compare with compressor)	t_IBH_DELAY	15～120min	50	5min
	Delay time for gas boiler operation (compare with compressor)	t_AHS_DELAY	5～120min	30	5min
	Which mode use gas boiler	MODE_GAS	HEAT & DHW/ HEAT/ DHW	HEAT & DHW	/
Mixed pump and mixed valve	Mixed pump turn on different temp	dTwi_FLH_ON	2～10℃	5	1℃
	Mixed pump turn off different temp	dTwi_FLH_OFF	-10～-2℃	-5	1℃
	Mixed valve turn on and turn off total time	TIME_ADJUST	1～60min	5	1min
	Mixed valve turn on percentage in total time	PER_START	0～100%	20%	20%
	Floor heating inlet water temp. setting	Tx_FLH	30～40℃	35	1℃
Floor pre-heat	Floor pre-heating function target water temp	Tset_B_PREHEATING	30-45℃	30	1℃
	Floor pre-heating function during time	t_fristFH	24～72HOURS	72	1h
Floor drying	Floor drying function maximum water temp	T_DRYPEAK	35～45℃	45	1℃
	Floor drying function temp. rise cycle	t_DRYUP	2～8days	8	1day
	Floor drying function temp. maintain cycle	t_HIGHPEAK	1～5days	5	1day
	Floor drying function temp. drop cycle	t_DRYDOWN	0～5days	5	1day
ECO function curve9(DIY) of heating mode	Low water temp. (floor heating)(Tao<-16℃)	Tao_（-∞，-16）_L	Type1～Type8	Type3	/
	High water temp. (radiator and fan coil)(Tao<-16℃)	Tao_（-∞，-16）_H	Type1～Type8	Type3	/
	Low water temp. (floor heating) (-16℃≤Tao<-8℃)	Tao_[-16，-8）_L	Type1～Type8	Type3	/
	High water temp. (radiator and fan coil) (-16℃≤Tao<-8℃)	Tao_[-16，-8）_H	Type1～Type8	Type3	/
	Low water temp. (floor heating) (-8℃≤Tao<0℃)	Tao_[-8，0）_L	Type1～Type8	Type3	/
	High water temp. (radiator and fan coil) (-8℃≤Tao<0℃)	Tao_[-8，0）_H	Type1～Type8	Type3	/
	Low water temp. (floor heating) (0℃≤Tao<8℃)	Tao_[0，8）_L	Type1～Type8	Type3	/
	High water temp. (radiator and fan coil) (0℃≤Tao<8℃)	Tao_[0，8）_H	Type1～Type8	Type3	/

	Low water temp. (floor heating) (8℃≤Tao＜16℃)	Tao_[8, 16）_L	Type1～Type8	Type3	/
	High water temp. (radiator and fan coil) (8℃≤Tao＜16℃)	Tao_[8, 16）_H	Type1～Type8	Type3	/
	Low water temp. (floor heating) (Tao≥16℃)	Tao_[16, +∞）_L	Type1～Type8	Type3	/
	High water temp. (radiator and fan coil) (Tao≥16℃)	Tao_[16, +∞）_H	Type1～Type8	Type3	/
ECO function curve9(DIY) of cooling mode	Low water temp. (floor heating) (Tao＜15℃)	Tao_（-∞, 15）_L	Type1～Type8	Type3	/
	High water temp. (fan coil) (Tao＜15℃)	Tao_（-∞, 15）_H	Type1～Type8	Type3	/
	Low water temp. (floor heating) (15℃≤Tao＜22℃)	Tao_[15, 22）_L	Type1～Type8	Type3	/
	High water temp. (fan coil) (15℃≤Tao＜22℃)	Tao_[15, 22）_H	Type1～Type8	Type3	/
	Low water temp. (floor heating) (22℃≤Tao＜30℃)	Tao_[22, 30）_L	Type1～Type8	Type3	/
	High water temp. (fan coil) (22℃≤Tao＜30℃)	Tao_[22, 30）_H	Type1～Type8	Type3	/
	Low water temp. (floor heating) (Tao≥30℃)	Tao_[30, +∞）_L	Type1～Type8	Type3	/
	High water temp. (fan coil) (Tao≥30℃)	Tao_[30, +∞）_H	Type1～Type8	Type3	/
Input parameters define	Floor heating inlet water temp. enable or not	Twi_FLH	YES/NON	NON	/
	Buffer tank temp. 1 enable or not	Twt_BT1	YES/NON	NON	/
	Buffer tank temp. 2 enable or not	Twt_BT2	YES/NON	NON	/
	Smart grid	SMART GRID	YES/NON	NON	/
	Solar input	SOLAR INPUT	Tsolar/SL1SL2/NON	NON	/
	Peak electric heat pump running time	SMART GRID RUN TIME	0～24 HOURS	4	1h
	Backup power enable or not	BACKUP POWER	YES/NON	NON	/
	Input power limit when use backup power	POWER INPUT LIMITATION	0%～100%	0%	10%
	Is the temperature sensor inside the wired controller used	WC_T_ROOM	YES/NON	YES	/
	Electric heater 1 power	E-HEATER1 POWER	0～20kW	3	0.5kW
	Electric heater 2 power	E-HEATER2 POWER	0～20kW	6	0.5kW
	Tank electric heater power	TANK E-HEATER POWER	0～20kW	0	0.5kW
	Circulate water pump running time when in standby state	t_PUMP_ON	1～10min	4	1min
	Circulate water pump stop time when in standby state	t_PUMP_OFF	3～30min	3	1min
	Circulate water pump control way selection	MODE_PUMP_I	Normal/ Emergency	Normal	/
	Voltage adjustment coefficient of mixing valve	V_ADJUST	1%～100%	15%	1%
	At the beginning of voltage adjustment different temp	dTSH_ADJUST	0.2～3℃	1	0.2℃
	Mixed valve initial voltage	V_INITIAL	2～8V	5	1V
	Mixed valve minimum voltage	V_MIN	0～4V	0	1V
	Mixed valve maximum voltage	V_MAX	5～10V	10	1V
	Voltage adjustment interval time	t_DURATION	1～30min	5	1min
	Cascade enable or not	CASCADE	YES/NON	NON	/
	Static pressure or not	Static pressure	YES/NON	NON	/

2. DHW mode parameters description

Parameters		Code	Range	Adjust value
DHW mode	DHW mode enable or not	DHW MODE	YES/NON	/
	Disinfection function enable or not	DISINFECT	YES/NON	/
	DHW priority	DHW PRIORITY	YES/NON	/
	DHW pump	DHW PUMP	YES/NON	/
	Maximum ambient temp allowed for DHW mode operation	Tao_DHWMAX	35～43℃	1℃
	Minimum ambient temp allowed for DHW mode operation	Tao_DHWMIN	-25～5℃	1℃
	Delay time for tank electric heater operation(compare with compressor)	t_TBH_DELAY	0～240min	1min
	Disinfection tank temp	Twt_DI	60～75℃	1℃
	Disinfection during time	t_DI_HIGHTEMP.	5～60min	1min
	Disinfection operation maximum time	t_DI_MAX	90～300min	10min
	Cooling/heating operation restrict time	t_DHWHP_RESTRICT	10～600min	10min
	DHW mode operation maximum time	t_DHWHP_MAX	10～600min	10min
	DHW pump operation time	DHW PUMP RUN TIME	5～120min	5min
	DHW mode turn on different temp	dTSDHW_ON	2～10℃	1℃
	Circle pump operation maximum temp when DHW mode in standby	Tao_PUMP_ON	-25～10℃	1℃

2.1 DHW mode enable or not:

2.1.1 If set DHW mode **YES**, the heat pump will have the function of producing domestic hot water, and main screen will have DHW mode icon;

2.1.2 If set DHW mode **NON**, the heat pump will be no producing domestic hot water function, and main screen will be no DHW mode icon

2.2 Disinfection function enable or not

2.2.1 If set disinfection function **YES,** after reaching the set time, the heat pump will automatically activate the domestic hot water tank disinfection function

2.2.2 If set disinfection function **NON**, the heat pump will be no disinfection function.

2.3 DHW priority

When cooling/heating mode and DHW mode set ON simultaneously, during the operation of the heat pump, the operating mode, heat pump will be switched to meet the cooling/heating and domestic hot water needs of the user.

2.3.1 If set DHW priority **YES**, heat pump will prioritize the operation of DHW mode, after reaching the shutdown conditions of DHW mode, switch to cooling/heating mode

2.3.2 If set DHW priority **NON**, heat pump will prioritize the operation of cooling/heating mode, after reaching the shutdown conditions of cooling/heating mode, switch to DHW mode.

2.4 DHW pump

DHW water pump is installed on the pipeline between the domestic hot water tank and the faucet, regular

operation can keep hot water in the pipeline at all times, to ensure that hot water comes out immediately after the user turns on the faucet

2.4.1 If set DHW pump **YES**, When the set running time is reached, heat pump will turn on the DHW pump, after running for the set operating time, DHW pump will turn off

2.4.2 If set DHW pump **NON,** this function will not be available

2.5 Maximum ambient temp allowed for DHW mode operation(Tao_DHWMAX) and Minimum ambient temp allowed for DHW mode operation(Tao_DHWMIN)

2.5.1 When ambient temp **higher** than maximum ambient temp allowed for DHW mode(**Tao_DHWMAX**), the heat pump will be stop to run DHW mode

2.5.2 When ambient temp **lower** than minimum ambient temp allowed for DHW mode(**Tao_DHWMIN**), the heat pump will be stop to run DHW mode

2.6 Delay time for tank electric heater operation (compare with compressor) (t_TBH_DELAY)

When a water tank electric heating is installed, the heat pump needs to control the operation of the water tank electric heating as a supplementary heat source to meet the demand for domestic hot water

2.6.1 When the heat pump operates in DHW mode, Compressor running time longer than Delay time for tank electric heater operation (compare with compressor) **(t_TBH_DELAY)**, and do not meet the conditions for DHW shutdown, heat pump will turn on the tank electric.

2.7 Disinfection tank temp(Twt_DI) and Disinfection during time(t_DI_HIGHTEMP) and Disinfection operation maximum time(t_DI_MAX)

2.7.1 Disinfection tank temp**(Twt_DI):** Target domestic hot water tank temperature during disinfection function operation

2.7.2 Disinfection during time**(t_DI_HIGHTEMP):** After enter to disinfection function, the time required to maintain the water tank temperature above the Disinfection tank temp **(Twt_DI)**, when tank temperature above the Disinfection tank temp **(Twt_DI)** during time longer than disinfection during time **(t_DI_HIGHTEMP)**, the disinfection will be finish.

2.7.3 Disinfection operation maximum time**(t_DI_MAX):** After enter to disinfection function, the domestic hot water tank temperature of has not reached **(Twt_DI)** or tank temperature above the Disinfection tank temp **(Twt_DI)**, but during time shorter than disinfection during time **(t_DI_HIGHTEMP)**, When disinfection function operation time reached Disinfection operation maximum time**(t_DI_MAX)**, disinfection function will be finish.

2.8 Cooling/heating operation restrict time (t_DHWHP_RESTRICT)

When DHW priority is enabled, the heating/cooling operation reaches the limit time (t_DHWHP_RESTRICT), even if the DHW water temperature does not drop to **Tset - t_DHWHP_MAX**, the operation is still switched to DHW mode.

2.9 DHW operation restrict time (t_DHWHP_MAX)

When the DHW mode priority turned on, the heat pump switches to heating/cooling operation when the continuous operation in DHW mode reaches the set maximum time (t_DHWHP_MAX)

2.10 DHW pump operation time

Operation duration of DHW water pump after starting operation, when operation time reached **DHW pump operation time**, the DHW pump will turn off.

2.11 DHW mode turn on different temp(dTSDHW_ON)

Heat pump operation DHW mode, when domestic hot water tank temperature reached set point, the heat pump will turn off, and when domestic hot water tank temperature lower than set point - DHW mode turn on different temp**(dTSDHW_ON)**, heat pump will turn on

2.12 Circle pump operation maximum temp when DHW mode in standby(Tao_PUMP_ON)

This parameter is for antifreeze of the hot water pipeline. When the weather is cold, there is a risk of freezing in the pipeline between the heat pump and domestic hot water tank. When heat pump in standby state, when ambient temperature lower than circle pump operation maximum temp when DHW mode in standby**(Tao_PUMP_ON)**, the circle water pump will operation. Running time and stops time need set

3. Cooling mode

Parameters		Code	Range	Adjust value
Cooling mode	Cooling mode enable or not	COOL MODE	YES/NON	/
	Maximum ambient temp allowed for cooling mode operation	Tao_CMAX	35～60℃	1℃
	Minimum ambient temp allowed for cooling mode operation	Tao_CMIN	-5～25℃	1℃
	Cooling mode ambient temp refresh time	t_Tao_FRESH_C	1～30min	1min
	Cooling mode turn off different temp	dTSC_OFF	2～10℃	1℃
	Cooling mode turn on different temp	dTSC_ON	2～10℃	1℃
	Cooling mode set water temp 1	TsetAC_C1	5～25℃	1℃
	Cooling mode set water temp 2	TsetAC_C2	5～25℃	1℃
	Cooling mode set ambient temp 1	Tao_C1	-5～46℃	1℃
	Cooling mode set ambient temp 2	Tao_C2	-5～46℃	1℃
	Zone 1 terminal type of cooling mode	ZONE1 C_EMISSION	RAD/FLH/FCU	/
	Zone 2 terminal type of cooling mode	ZONE2 C_EMISSION	RAD/FLH/FCU	/
	Duty cycle of water pump operation shield with cooling mode 1	P_SHIELD_C1	2.5%～72.5%/NON	7%
	Duty cycle of water pump operation shield with cooling mode 2	P_SHIELD_C2	2.5%～72.5%/NON	7%
	Duty cycle of water pump operation shield with cooling mode 3	P_SHIELD_C3	2.5%～72.5%/NON	7%
	Duty cycle of water pump operation shield with cooling mode 4	P_SHIELD_C4	2.5%～72.5%/NON	7%
	Duty cycle of water pump operation shield with cooling mode 5	P_SHIELD_C5	2.5%～72.5%/NON	7%

3.1 Cooling mode enable or not

3.1.1 If set cooling mode **YES**, the heat pump will have the cooling function

3.1.2 If set cooling mode **NON**, the heat pump will be no cooling function

3.2 Maximum ambient temp allowed for cooling mode operation(Tao_CMAX) and Minimum ambient temp allowed for cooling mode operation(Tao_CMIN)

3.2.1 When ambient temp **higher** than maximum ambient temp allowed for cooling mode(**Tao_CMAX**), the heat pump will be stop to run cooling mode

3.2.2 When ambient temp **lower** than minimum ambient temp allowed for cooling mode(**Tao_CMIN**), the heat pump will be stop to run cooling mode

3.3 Cooling mode ambient temp refresh time(t_Tao_FRESH_C)

When using ECO mode, the outlet water temperature to be set according to the ambient temperature automatically. So it is necessary to set the temperature refresh time(**t_Tao_FRESH_C**) to prevent the environmental temperature from changing too quickly, which can cause the water temperature to change too quickly

3.4 Cooling mode turn off different temp(dTSC_OFF) and Cooling mode turn on different temp(dTSC_ON)

3.4.1 Cooling mode turn off different temp(dTSC_OFF): Heat pump operation cooling mode, when outlet water temperature or buffer tank temperature reached set point - Cooling mode turn off different temp (dTSC_OFF), the heat pump will turn off

3.4.2 Cooling mode turn on different temp(dTSC_ON): Heat pump operation cooling mode and in standby state, when outlet water temperature or buffer tank temperature reached set point + Cooling mode turn on different temp(dTSC_ON), the heat pump will turn on

3.5 Cooling mode set water temp 1(TsetAC_C1) and Cooling mode set water temp 2(TsetAC_C2) and Cooling mode set ambient temp 1(Tao_C1) and Cooling mode set ambient temp 2(Tao_C2)

These parameters use for weather mode function, If the built-in 8 ECO curves cannot meet user needs, users can set these 4 parameters according to their own habits to form an ECO curve to meet user needs.
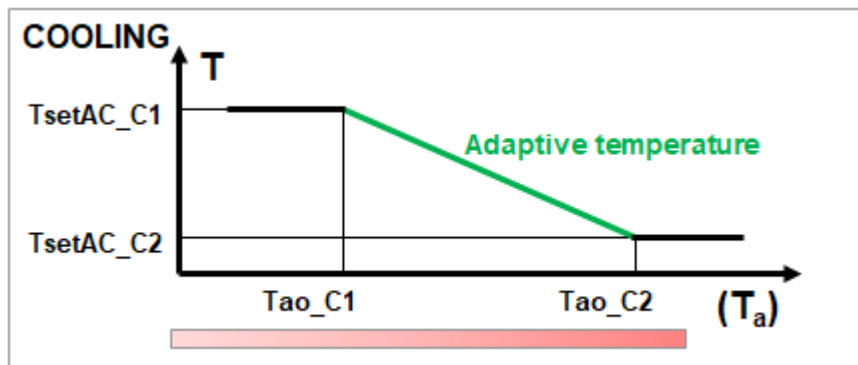
3.6 Zone 1 terminal type of cooling mode (ZONE1 C_EMISSION) and Zone 2 terminal type of cooling mode (ZONE2 C_EMISSION)

When the heat pump operates in cooling mode, if ECO mode and weather mode function is required, need select the terminal type to ensure that the heat pump controls the water temperature correctly

Terminal type is fan coil (FCU): low water temperature curve during operation, cooling speed is fast;

Terminal type is floor heating (FLH): high water temperature curve during operation, prevent water droplets from forming on the floor

Terminal type is radiator (RAD): Prohibit selection this terminal in cooling mode

3.7 Duty cycle of water pump operation shield with cooling mode (P_SHIELD_C1, P_SHIELD_C2, P_SHIELD_C3, P_SHIELD_C4)

After the installation of the water pipeline, when the water pump operates in a certain frequency range in cooling mode, there may be water pipeline vibration. These parameters are used to shield the frequency range that causes water pipeline vibration

4. Heating mode

Parameters		Code	Range	Adjust value
Heating mode	Heating mode enable or not	HEAT MODE	YES/NON	/
	Maximum ambient temp allowed for heating mode operation	Tao_HMAX	20～35℃	1℃
	Minimum ambient temp allowed for heating mode operation	Tao_HMIN	-25～15℃	1℃
	Heating mode ambient temp refresh time	t_Tao_FRESH_H	1～30	1min
	Heating mode turn on different temp	dTSH_OFF	2～10℃	1℃
	Heating mode turn off different temp	dTSH_ON	0～10℃	1℃
	Heating mode set water temp 1	TsetAC_H1	25～60℃	1℃
	Heating mode set water temp 2	TsetAC_H2	25～60℃	1℃
	Heating mode set ambient temp 1	Tao_H1	-25～35℃	1℃
	Heating mode set ambient temp 2	Tao_H2	-25～35℃	1℃
	Zone 1 terminal type of heating mode	ZONE1 H_EMISSION	RAD/FLH/FCU	/
	Zone 2 terminal type of heating mode	ZONE2 H_EMISSION	RAD/FLH/FCU	/
	Duty cycle of water pump operation shield with heating mode and DHW mode 1	P_SHIELD_H1	2.5%～72.5%/NON	7%
	Duty cycle of water pump operation shield with heating mode and DHW mode 2	P_SHIELD_H2	2.5%～72.5%/NON	7%
	Duty cycle of water pump operation shield with heating mode and DHW mode 3	P_SHIELD_H3	2.5%～72.5%/NON	7%
	Duty cycle of water pump operation shield with heating mode and DHW mode 4	P_SHIELD_H4	2.5%～72.5%/NON	7%
	Duty cycle of water pump operation shield with heating mode and DHW mode 5	P_SHIELD_H5	2.5%～72.5%/NON	7%

4.1 Heating mode enable or not

4.1.1 If set heating mode **YES**, the heat pump will have the heating function

4.1.2 If set heating mode **NON**, the heat pump will be no heating function

4.2 Maximum ambient temp allowed for heating mode operation(Tao_HMAX) and Minimum ambient temp allowed for heating mode operation(Tao_HMIN)

4.2.1 When ambient temp **higher** than maximum ambient temp allowed for heating mode(**Tao_HMAX**), the heat pump will be stop to run cooling mode, and use electric heater or gas boiler to meet heating required

4.2.2 When ambient temp **lower** than minimum ambient temp allowed for heating mode(**Tao_HMIN**), the heat pump will be stop to run cooling mode, and use electric heater or gas boiler to meet heating required

4.3 Heating mode ambient temp refresh time(t_Tao_FRESH_H)

When using ECO mode, the outlet water temperature to be set according to the ambient temperature automatically. So it is necessary to set the temperature refresh time**(t_Tao_FRESH_H)** to prevent the environmental temperature from changing too quickly, which can cause the water temperature to change too quickly

### 4.4 Heating mode turn on different temp(dTSH_OFF) and Heating mode turn off different temp (dTSH_ON)

4.4.1 Heating mode turn off different temp(dTSH_OFF): Heat pump operation heating mode, when outlet water temperature or buffer tank temperature reached set point + heating mode turn off different temp

(dTSH_OFF), the heat pump will turn off

4.4.2 Cooling mode turn on different temp(dTSC_ON): Heat pump operation heating mode, when outlet water temperature or buffer tank temperature reached set point - heating mode turn on different temp **(dTSH_ON)**, the heat pump will turn on

4.5 Heating mode set water temp 1(TsetAC_H1) and Heating mode set water temp 2(TsetAC_H2) and Heating mode set ambient temp 1(Tao_H1) and Heating mode set ambient temp 2(Tao_H2)

These parameters use for weather mode function, If the built-in 8 ECO curves cannot meet user needs, users can set these 4 parameters according to their own habits to form an ECO curve to meet user needs.
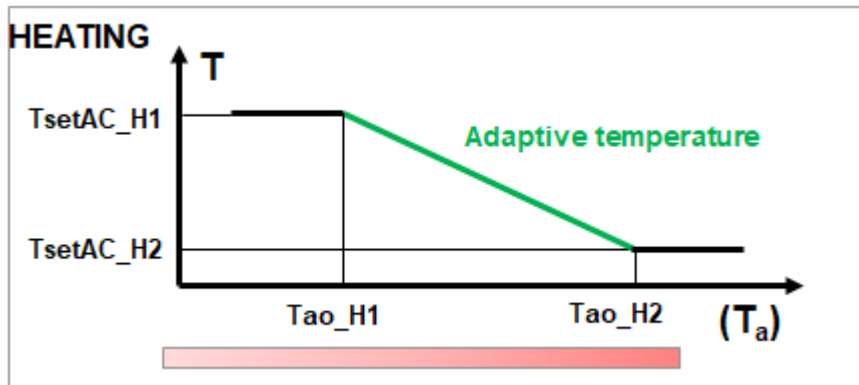
4.6 Zone 1 terminal type of heating mode (ZONE1 H_EMISSION) and Zone 2 terminal type of heating mode (ZONE2 H_EMISSION)

When the heat pump operates in heating mode, if ECO mode and weather mode function is required, need select the terminal type to ensure that the heat pump controls the water temperature correctly

Terminal type is fan coil(FCU): high water temperature curve during operation;

Terminal type is radiator (RAD): high water temperature curve during operation;
Terminal type is floor heating(FLH): low water temperature curve during operation

4.7 Duty cycle of water pump operation shield with heating mode and DHW mode (P_SHIELD_H1, P_SHIELD_H2, P_SHIELD_H3, P_SHIELD_H4, P_SHIELD_H5)

After the installation of the water pipeline, when the water pump operates in a certain frequency range in heating mode, there may be water pipeline vibration. These parameters are used to shield the frequency range that causes water pipeline vibration.

5. Room temp control (cooling mode)

Parameters		Code	Range	Adjust value
Room Temperature Control (cooling mode)	Fan coil initial target water temp of cooling mode	TC_INITIAL_FCU	5 ~ 25℃	1℃
	Floor heating initial target water temp of cooling mode	TC_INITIAL_FLH	18 ~ 25℃	1℃
	Upper limit value of water temp regulation in cooling mode	TC_ADJUST_UP	0 ~ 15℃	1℃
	Lower limit value of water temp regulation in cooling mode	TC_ADJUST_DOWN	-15 ~ 0℃	1℃
	Cooling mode turn off different room temp	dTRC_OFF	-5 ~ 0℃	0.1℃
	Cooling mode turn on different room temp	dTRC_ON	0 ~ 5℃	0.1℃
	Cooling mode room temp correct value	TC_CORRECT	-5 ~ 5℃	0.5℃
	Room temp adjust range in cooling mode	TC_INTERVAL	0.1 ~ 3℃	0.1℃

5.1 Fan coil initial target water temp of cooling mode(TC_INITIAL_FCU) and Floor heating initial target water temp of cooling mode(TC_INITIAL_FLH)

If use room temperature to controlled heat pump, the water temperature also need control, when cooling mode is turned on, the initial target water temperature is required, then adjust the water temperature according to the room temperature

5.1.1 Fan coil initial target water temp of cooling mode(TC_INITIAL_FCU): The terminal type is fan coil, Initial water temperature when using room temperature control heat pump

5.1.2 Floor heating initial target water temp of cooling mode(TC_INITIAL_FLH): The terminal type is under floor heating, Initial water temperature when using room temperature control heat pump

5.2 Upper limit value of water temp regulation in cooling mode(TC_ADJUST_UP) and Lower limit value of water temp regulation in cooling mode(TC_ADJUST_DOWN)

5.2.1 Upper limit value of water temp regulation in cooling mode(TC_ADJUST_UP):

5.3 Cooling mode turn off different room temp(dTRC_OFF) and Cooling mode turn on different room temp(dTRC_ON)

5.3.1 Cooling mode turn off different room temp(dTRC_OFF): Heat pump operation cooling mode, when room temperature reached set point - Cooling mode turn off different room temp (dTRC_OFF), the heat pump will turn off

5.3.2 Cooling mode turn on different room temp(dTRC_ON): Heat pump operation cooling mode and in standby state, when room temperature reached set point + Cooling mode turn on different room temp(dTSC_ON), the heat pump will turn on

5.4 Cooling mode room temp correct value(TC_CORRECT):

If there is a deviation between the room temperature detected by the room temperature sensor and the actual room temperature, please use these parameters to correct it

5.5 Room temp adjust range in cooling mode(TC_INTERVAL):

This parameter determines whether the water temperature needs to be adjusted, if room temp higher than set point + **TC_INTERVAL,** the water temperature will be adjusting lower, if room temp lower than set point - **TC_INTERVA,** the water temp will be adjusting higher

6. Room temp control (heating mode)

Parameters		Code	Range	Adjust value
Room Temperature Control (Heating mode)	Floor heating initial target water temp of heating mode	TH_INITIAL_FLH	25~40℃	1℃
	Radiator initial target water temp of heating mode	TH_INITIAL_RAD	25~40℃	1℃
	Fan coil initial target water temp of heating mode	TH_INITIAL_FCU	30~50℃	1℃
	Upper limit value of water temp regulation in heating mode	TH_ADJUST_UP	0~15℃	1℃
	Lower limit value of water temp regulation in heating mode	TH_ADJUST_DOWN	-15~0℃	1℃
	Maximum water temp of floor heating in heating mode	TH_MAX_FLH	35~60℃	1℃
	Minimum water temp of floor heating in heating mode	TH_MIN_FLH	25~35℃	1℃
	Maximum water temp of radiator in heating mode	TH_MAX_RAD	35~60℃	1℃
	Minimum water temp of radiator in heating mode	TH_MIN_RAD	25~35℃	1℃
	Maximum water temp of fan coil in heating mode	TH_MAX_FCU	35~60℃	1℃
	Minimum water temp of fan coil in heating mode	TH_MIN_FCU	25~35℃	1℃
	Heating mode turn off different room temp	dTRH_OFF	0~5℃	0.1℃
	Heating mode turn on different room temp	dTRH_ON	-5~0℃	0.1℃
	Zone 1 heating mode room temp correct value	TH_CORRECT	-5~5℃	0.5℃
	Zone 2 heating mode room temp correct value	TH_CORRECT_FLH	-5~5℃	0.5℃
	Room temp adjust range in heating mode	TH_INTERVAL	0.1~3℃	0.1℃

6.1 Floor heating initial target water temp of heating mode(TH_INITIAL_FLH) and Radiator initial target water temp of heating mode(TH_INITIAL_RAD) and Fan coil initial target water temp of heating mode(TH_INITIAL_FCU)

If use room temperature to controlled heat pump, the water temperature also need control, when heating mode is turned on, the initial target water temperature is required, then adjust the water temperature according to the room temperature

6.1.1 Floor heating initial target water temp of heating mode(TH_INITIAL_FLH): The terminal type is under floor heating, Initial water temperature when using room temperature control heat pump

6.1.2 Radiator initial target water temp of heating mode(TH_INITIAL_RAD): The terminal type is radiator, Initial water temperature when using room temperature control heat pump

6.1.3 Fan coil initial target water temp of heating mode(TH_INITIAL_FCU): The terminal type is fan coil, Initial water temperature when using room temperature control heat pump

6.2 Upper limit value of water temp regulation in heating mode(TH_ADJUST_UP) and Lower limit value of water temp regulation in heating mode(TH_ADJUST_DOWN)

6.2.1 Upper limit value of water temp regulation in heating mode(TH_ADJUST_UP): Use room temperature control, to prevent the water temperature adjusted too high, so this parameter is to limit the upper limit value of water temperature, the maximum water temp is **TH_INITIAL + TH_ADJUST_UP**

6.2.2 Lower limit value of water temp regulation in heating mode(TH_ADJUST_DOWN): Use room temperature control, to prevent the water temperature adjusted too low, so this parameter is to limit the lower

limit value of water temperature, the minimum water temp is **TH_INITIAL + TH_ADJUST_DOWN**

6.3 Maximum water temp of floor heating in heating mode(TH_MAX_FLH) and Minimum water temp of floor heating in heating mode(TH_MIN_FLH)

6.3.1 Maximum water temp of floor heating in heating mode(TH_MAX_FLH):

6.3.2 Minimum water temp of floor heating in heating mode(TH_MIN_FLH):

6.4 Maximum water temp of radiator in heating mode(TH_MAX_RAD) and Minimum water temp of radiator in heating mode(TH_MIN_RAD)

6.4.1 Maximum water temp of radiator in heating mode(TH_MAX_RAD):

6.4.2 Minimum water temp of radiator in heating mode(TH_MIN_RAD):

6.5 Maximum water temp of fan coil in heating mode(TH_MAX_FCU) and Minimum water temp of fan coil in heating mode(TH_MIN_FCU)

6.5.1 Maximum water temp of fan coil in heating mode(TH_MAX_FCU):

6.5.2 Minimum water temp of fan coil in heating mode(TH_MIN_FCU):

6.6 Heating mode turn off different room temp(dTRH_OFF) and Heating mode turn on different room temp(dTRH_ON)

6.6.1 Heating mode turn off different room temp(dTRH_OFF): Heat pump operation cooling mode, when room temperature reached set point - Cooling mode turn off different room temp (**dTRH_OFF**), the heat pump will turn off

6.6.2 Heating mode turn on different room temp(dTRH_ON): Heat pump operation cooling mode and in standby state, when room temperature reached set point + Cooling mode turn on different room temp (**dTRH_ON**), the heat pump will turn on

6.7 Zone 1 heating mode room temp correct value(TH_CORRECT) and Zone 2 heating mode room temp correct value(TH_CORRECT_FLH)

If there is a deviation between the room temperature detected by the room temperature sensor and the actual room temperature

6.7.1 please use Zone 1 heating mode room temp correct value(TH_CORRECT) to correct zone 1 room temperature

6.7.2 please use Zone 2 heating mode room temp correct value(TH_CORRECT_FLH) to correct zone 2 room temperature

6.8 Room temp adjust range in heating mode(TH_INTERVAL)

This parameter determines whether the water temperature needs to be adjusted, if room temp higher than set point + **TH_INTERVAL,** the water temperature will be adjusting lower, if room temp lower than set point - **TH_INTERVA,** the water temp will be adjusting higher

7. Room temp control(normal)

Parameters		Code	Range	Adjust value
Room temp control (normal)	Target water temp refresh interval time	t_REFRESH	1 ~ 30min	1min
	Target water temp refresh value	TW_AV	0.1 ~ 3℃	0.1℃

When using room temperature controlled heat pump, the water temperature needs to be adjusted according to the changes in room temperature automatically.

7.1 Target water temp refresh interval time(t_REFRESH): This parameter specifies the time interval for adjusting the water temperature to prevent the water temperature adjustment frequency too fast.

7.2 Target water temp refresh value(TW_AV): This parameter specifies the amplitude of each adjustment of the water temperature

8.Auto mode

Parameters		Code	Range	Adjust value
AUTO mode	Minimum ambient temp of cooling mode	Tao_AUTOCMIN	20～35℃	1℃
	Maximum ambient temp of heating mode	Tao_AUTOHMAX	10～17℃	1℃

When using Auto mode function, heat pump needs to determine its operating mode based on the ambient temperature

8.1 Minimum ambient temp of cooling mode(Tao_AUTOCMIN): When ambient temperature higher than minimum ambient temp of cooling mode(**Tao_AUTOCMIN),** heat pump will operation cooling mode

8.2Maximum ambient temp of heating mode(Tao_AUTOHMAX): When ambient temperature lower than Maximum ambient temp of heating mode**(Tao_AUTOHMAX),** heat pump will operation heating mode

9.Temp type

Parameters		Code	Range	Adjust value
Temp type	Zone 1 room temp control	ZONE1 ROOM TEMP	YES/NON	/
	Zone 2 room temp control	ZONE2 ROOM TEMP	YES/NON	/
	Double zone control	DOUBLE ZONE	YES/NON	/

9.1 Zone 1 room temp control: Zone 1 means the area where the heating terminal is a radiator or fan coil, if set **YES**, the heat pump will be controlled by detecting the temperature inside the room

9.2 Zone 2 room temp control: Zone 2 means the area where the heating terminal is under floor heating, if set **YES**, the heat pump will be controlled by detecting the temperature inside the room

9.3 Double zone control: If users heating terminal type have radiator/ fan coil and under floor heating, users can use double zone control function to meet radiator/ fan coil higher water temperature required and meet under floor heating low water temperature required at the same time.

10.Thermostat

Parameters		Code	Range	Adjust value
Thermostat	Room thermostat	ROOM THERMOSTAT	YES/NON	/

If users use Thermostat to control heat pump, please set Room Thermostat **YES**

11. Other heating source

Parameters		Code	Range	Adjust value
Other heating source	Electric heater enable or not	INNER BACKUP HEATER	YES/NON	/
	Electric heater power selection	IBH POWER SELECTION	3kW/6kW/9kW	/
	Tank heater enable or not	TANK HEATER	YES/NON	/
	Maximum ambient temp allowed for electric heater operation	Tao_IBH_ON	-15～10℃	1℃
	Maximum ambient temp allowed for tank electric heater operation	Tao_TBH_ON	-5～20℃	1℃
	Maximum ambient temp allowed for gas boiler operation	Tao_AHS_ON	-25～10℃	1℃
	Delay time for electric heater operation(compare with compressor)	t_IBH_DELAY	15～120min	5min
	Delay time for gas boiler operation(compare with compressor)	t_AHS_DELAY	5～120min	5min
	Which mode use gas boiler	MODE_GAS	HEAT & DHW/ HEAT/ DHW	/

11.1 Electric heater enable or not (INNER BACKUP HEATER): If set **YES**, electric heater will be allowed to operate; If set **NON,** electric heater operation will not be allowed

11.2 Electric heater power selection (IBH POWER SELECTION): Limit the maximum power of electric heater operation

11.3 Tank heater enable or not (TANK HEATER): If set **YES**, heat pump will control domestic hot water tank electric heater operation; If set **NON**, heat pump will not control domestic hot water tank electric heater operation.

11.4 Maximum ambient temp allowed for electric heater operation(Tao_IBH_ON): Maximum ambient temperature allowed for electric heater operation; When ambient temperature higher than **Tao_IBH_ON**, the electric heater will not operation

11.5 Maximum ambient temp allowed for tank electric heater operation(Tao_TBH_ON): Maximum ambient temperature allowed for domestic hot water tank electric heater operation, When ambient temperature higher than **Tao_TBH_ON**, the domestic hot water tank electric heater will not operation

11.6 Maximum ambient temp allowed for gas boiler operation(Tao_AHS_ON): If connected gas boiler, the heat pump will control gas boiler turn on or turn off, **Tao_AHS_ON** is the maximum ambient temperature allowed for gas boiler operation

11.7 Delay time for electric heater operation (compare with compressor) (t_IBH_DELAY): compressor and electric heater will not open at the same time, when compressor operation time longer than **t_IBH_DELAY,** the heat pump will determine whether to turn on electric heater based on the water temperature and ambient temperature conditions

11.8 Delay time for gas boiler operation (compare with compressor) (t_AHS_DELAY): compressor and gas boiler will not open at the same time, when compressor operation time longer than **t_AHS_DELAY**, the heat pump will determine whether to turn on the gas boiler based on the water temperature and ambient temperature conditions

11.9 Which mode use gas boiler(MODE_GAS): Users can be set which mode allowed gas boiler operation.

If set **HEAT,** only the heating mode allows gas boiler operation;

If set **DHW,** only the DHW mode allows gas boiler operation;

If set **HEAT & DHW**, both heating mode and DHW mode allow gas operation

12. Mixed pump and mixed valve

Parameters		Code	Range	Adjust value
Mixed pump and mixed valve	Mixed valve turn on different temp	dTwi_FLH_ON	2～10℃	1℃
	Mixed valve turn off different temp	dTwi_FLH_OFF	-10～-2℃	1℃
	Mixed valve turn on and turn off total time	TIME_ADJUST	1～60min	1min
	Mixed valve turn on percentage in total time	PER_START	0～100%	20%
	Floor heating inlet water temp setting	Tx_FLH	30～40℃	1℃

For mixing valve, we have two ways to control, one is ON/OFF control, and another one is 0-10 voltage control, the heat pump automatically recognizes based on the connection method

12.1 Mixed valve turn on different temp(dTwi_FLH_ON) and Mixed valve turn off different temp(dTwi_FLH_OFF) and Mixed valve turn on and turn off total time(TIME_ADJUST) and Mixed valve turn on percentage in total time(PER_START)

If the heat pump recognizes that the connection method is ON/OFF control, please set these parameters.

12.1.1 Mixed valve turn on different temp(dTwi_FLH_ON): If the under floor heating inlet water temperature **higher** than floor heating inlet water temp setting**(Tx_FL) +** mixed valve turn on different temp**(dTwi_FLH_ON),** will turn on the mixed valve, keep water in the internal circulation of underfloor heating.

12.1.2 Mixed valve turn off different temp(dTwi_FLH_OFF): If the under floor heating inlet water temperature **lower** than floor heating inlet water temp setting**(Tx_FL) +** Mixed valve turn off different temp**(dTwi_FLH_OFF),** will turn off the **mixed valve,** allow the high-temperature water from the heat pump to enter the interior of the underfloor heating system

If the under floor heating inlet water temperature lower than floor heating inlet water temp setting**(Tx_FL) +** mixed valve turn on different temp**(dTwi_FLH_ON)** and higher than floor heating inlet water temp setting**(Tx_FL) +** Mixed valve turn off different temp**(dTwi_FLH_OFF),** the mixed valve turns on or turn off will be controlled by time.

12.1.3 Mixed valve turn on and turn off total time(TIME_ADJUST): One cycle for each turn on and turn off execution, mixed valve turn on and turn off total time(TIME_ADJUST) is the total time of a cycle, Users need to set according to the installation situation to ensure the stability of the water inlet temperature for underfloor heating
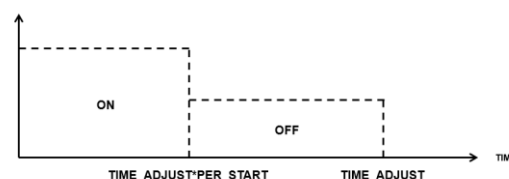
12.1.4 Mixed valve turn on percentage in total time(PER_START):

In a turn on and turn off cycle, the proportion of opening time to total time. Users need to set according to the installation situation to ensure the stability of the water inlet temperature for underfloor heating

12.2 Floor heating inlet water temp setting(Tx_FLH): Target water temperature of under floor heating inlet water temperature.

13. Floor pre-heat

Parameters		Code	Range	Adjust value
Floor pre-heat	Floor pre-heating function target water temp	Tset_B_PREHEATING	30-45℃	1℃
	Floor pre-heating function during time	t_fristFH	24～72HOURS	1h

13.1 Floor pre-heating function target water temp(Tset_B_PREHEATING): Floor pre-heat function maximum water temperature

**13.2 Floor pre-heating function during time(t_fristFH):** Floor pre-heat function maximum operation time
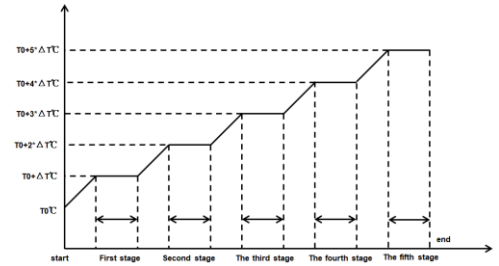
14. Floor drying

Parameters		Code	Range	Adjust value
Floor drying	Floor drying function maximum water temp	T_DRYPEAK	35～45℃	1℃
	Floor drying function temp rise cycle	t_DRYUP	2～8days	1day
	Floor drying function temp maintain cycle	t_HIGHPEAK	1～5days	1day
	Floor drying function temp drop cycle	t_DRYDOWN	0～5days	1day

14.1 Floor drying function maximum water temp(T_DRYPEAK): Floor drying function maximum water temperature

14.2 Floor drying function temp rise cycle(t_DRYUP): For Floor drying function, it's include 3 periods, temperature rise cycle, temperature maintain cycle and temperature drop cycle, these parameters is temperature rise cycle during time.

14.3 Floor drying function temp maintain cycle(t_HIGHPEAK): Floor drying function temperature maintain cycle during time.

14.4 Floor drying function temp drop cycle(t_DRYDOWN): Floor drying function temperature drop cycle during time
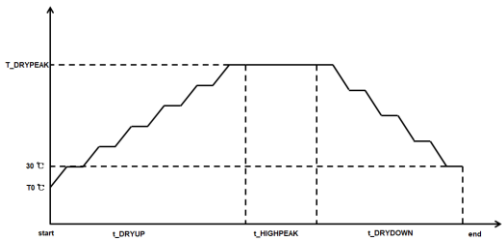
15. ECO function curve9(DIY) of heating mode

Parameters		Code	Range	Adjust value
ECO function curve9(DIY) of heating mode	Low water temp(floor heating)(Tao＜-16℃)	Tao_（-∞，-16）_L	Type1～Type8	/
	High water temp(radiator and fan coil)(Tao＜-16℃)	Tao_（-∞，-16）_H	Type1～Type8	/
	Low water temp(floor heating) (-16℃≤Tao＜-8℃)	Tao_[-16，-8）_L	Type1～Type8	/
	High water temp(radiator and fan coil) (-16℃≤Tao＜-8℃)	Tao_[-16，-8）_H	Type1～Type8	/
	Low water temp(floor heating) (-8℃≤Tao＜0℃)	Tao_[-8，0）_L	Type1～Type8	/
	High water temp(radiator and fan coil) (-8℃≤Tao＜0℃)	Tao_[-8，0）_H	Type1～Type8	/
	Low water temp(floor heating) (0℃≤Tao＜8℃)	Tao_[0，8）_L	Type1～Type8	/
	High water temp(radiator and fan coil) (0℃≤Tao＜8℃)	Tao_[0，8）_H	Type1～Type8	/
	Low water temp (floor heating) (8℃≤Tao＜16℃)	Tao_[8，16）_L	Type1～Type8	/
	High water temp(radiator and fan coil) (8℃≤Tao＜16℃)	Tao_[8，16）_H	Type1～Type8	/
	Low water temp(floor heating) (Tao≥16℃)	Tao_[16，+∞）_L	Type1～Type8	/
	High water temp(radiator and fan coil) (Tao≥16℃)	Tao_[16，+∞）_H	Type1～Type8	/

Users can set different ECO curves in different ambient temperature ranges according to their usage habits

15.1 Low water temp(floor heating)(Tao＜-16℃)(Tao_（-∞，-16）_L) and High water temp(radiator and fan coil)(Tao＜-16℃)(Tao_（-∞，-16）_H)

15.1.1 Low water temp(floor heating)(Tao＜-16℃)(Tao_(-∞,-16)_L): If the heating terminal type is under floor heating, when ambient temperature lower than -16℃ set ECO curves

15.1.2 High water temp(radiator and fan coil)(Tao＜-16℃)(Tao_(-∞,-16)_H): If the heating terminal type is radiator or fan coil, when ambient temperature lower than -16℃ set ECO curves

15.2 Low water temp(floor heating) (-16℃≤Tao＜-8℃)(Tao_[-16,-8)_L) and High water temp(radiator and fan coil) (-16℃≤Tao＜-8℃)(Tao_[-16，-8）_H)

15.2.1 Low water temp(floor heating) (-16℃≤Tao＜-8℃)(Tao_[-16，-8）_L) : If the heating terminal type is under floor heating, when ambient temperature lower than -8℃ and higher than -16℃ set ECO curves

15.2.2 High water temp(radiator and fan coil) (-16℃≤Tao＜-8℃)(Tao_[-16，-8）_H): If the heating terminal type is radiator or fan coil, when ambient temperature lower than -8℃ and higher than -16℃ set ECO curves

15.3 Low water temp(floor heating) (-8℃≤Tao＜0℃)(Tao_[-8，0）_L) and High water temp(radiator and fan coil) (-8℃≤Tao＜0℃)(Tao_[-8，0）_H)

15.3.1 Low water temp(floor heating) (-8℃≤Tao＜0℃)(Tao_[-8，0）_L): If the heating terminal type is under floor heating, when ambient temperature lower than 0℃ and higher than -8℃ set ECO curves

15.3.2 High water temp(radiator and fan coil) (-8℃≤Tao＜0℃)(Tao_[-8，0）_H): If the heating terminal type is radiator or fan coil, when ambient temperature lower than 0℃ and higher than -8℃ set ECO curves

15.4 Low water temp(floor heating) (0℃≤Tao＜8℃)(Tao_ [0，8）_L) and High water temp(radiator and fan coil) (0℃≤Tao＜8℃)(Tao_ [0，8）_H)

15.4.1 Low water temp(floor heating) (0℃≤Tao＜8℃)(Tao_ [0，8）_L): If the heating terminal type is under floor heating, when ambient temperature lower than 8℃ and higher than 0℃ set ECO curves

15.4.2 High water temp(radiator and fan coil) (0℃≤Tao＜8℃)(Tao_ [0，8）_H): If the heating terminal type is radiator or fan coil, when ambient temperature lower than 8℃ and higher than 0℃ set ECO curves

15.5 Low water temp (floor heating) (8℃≤Tao＜16℃)(Tao_[8，16）_L) and High water temp(radiator and fan coil) (8℃≤Tao＜16℃)(Tao_[8，16）_H)

15.5.1 Low water temp (floor heating) (8℃≤Tao＜16℃)(Tao_[8，16）_L): If the heating terminal type is under floor heating, when ambient temperature lower than 16℃ and higher than 8℃ set ECO curves

15.5.2 High water temp(radiator and fan coil) (8℃≤Tao＜16℃)(Tao_[8，16）_H): If the heating terminal type is radiator or fan coil, when ambient temperature lower than 16℃ and higher than 8℃ set ECO curves

15.6 Low water temp(floor heating) (Tao≥16℃)(Tao_[16，+∞）_L) and High water temp(radiator and fan coil) (Tao≥16℃)(Tao_[16，+∞）_H)

15.6.1 Low water temp(floor heating) (Tao≥16℃)(Tao_[16，+∞）_L) : If the heating terminal type is under floor heating, when ambient temperature higher than 16℃ set ECO curves

15.6.2 High water temp(radiator and fan coil) (Tao≥16℃)(Tao_[16，+∞）_H): If the heating terminal type is radiator or fan coil, when ambient temperature higher than 16℃ set ECO curves

16. ECO function curve9(DIY) of cooling mode

Parameters		Code	Range	Adjust value
ECO function curve9(DIY) of cooling mode	Low water temp(floor heating) (Tao<15℃)	Tao_（-∞，15）_L	Type1~Type8	/
	High water temp(fan coil) (Tao<15℃)	Tao_（-∞，15）_H	Type1~Type8	/
	Low water temp(floor heating) (15℃≤Tao<22℃)	Tao_[15，22）_L	Type1~Type8	/
	High water temp(fan coil) (15℃≤Tao<22℃)	Tao_[15，22）_H	Type1~Type8	/
	Low water temp(floor heating) (22℃≤Tao<30℃)	Tao_[22，30）_L	Type1~Type8	/
	High water temp(fan coil) (22℃≤Tao<30℃)	Tao_[22，30）_H	Type1~Type8	/
	Low water temp(floor heating) (Tao≥30℃)	Tao_[30，+∞）_L	Type1~Type8	/
	High water temp(fan coil) (Tao≥30℃)	Tao_[30，+∞）_H	Type1~Type8	/

Users can set different ECO curves in different ambient temperature ranges according to their usage habits

16.1 Low water temp(floor heating) (Tao<15℃)(Tao_（-∞，15）_L) and High water temp(fan coil) (Tao<15℃)(Tao_（-∞，15）_H)

16.1.1 Low water temp(floor heating) (Tao<15℃)(Tao_（-∞，15）_L): If the cooling terminal type is under floor heating, when ambient temperature lower than 15℃ set ECO curves

16.1.2 High water temp(fan coil) (Tao<15℃)(Tao_（-∞，15）_H): If the cooling terminal type is fan coil, when ambient temperature lower than 15℃ set ECO curves

16.2 Low water temp(floor heating) (15℃≤Tao<22℃)(Tao_[15，22）_L) and High water temp(fan coil) (15℃≤Tao<22℃)(Tao_[15，22）_H)

16.2.1 Low water temp(floor heating) (15℃≤Tao<22℃)(Tao_[15，22）_L): If the cooling terminal type is under floor heating, when ambient temperature lower than 22℃ and higher than 15℃ set ECO curves

16.2.2 High water temp(fan coil) (15℃≤Tao<22℃)(Tao_[15，22）_H): If the cooling terminal type is fan coil, when ambient temperature lower than 22℃ and higher than 15℃ set ECO curves

16.3 Low water temp(floor heating) (22℃≤Tao<30℃)(Tao_[22，30）_L) and High water temp(fan coil) (22℃≤Tao<30℃)(Tao_[22，30）_H)

16.3.1 Low water temp(floor heating) (22℃≤Tao<30℃)(Tao_[22，30）_L): If the cooling terminal type is under floor heating, when ambient temperature lower than 30℃ and higher than 22℃ set ECO curves

16.3.2 High water temp(fan coil) (22℃≤Tao<30℃)(Tao_[22，30）_H): If the cooling terminal type is fan coil, when ambient temperature lower than 30℃ and higher than 22℃ set ECO curves

16.4 Low water temp(floor heating) (Tao≥30℃)(Tao_[30，+∞）_L) and High water temp(fan coil) (Tao≥30℃)(Tao_[30，+∞）_H)

16.4.1 Low water temp(floor heating) (Tao≥30℃)(Tao_[30，+∞）_L): If the cooling terminal type is under floor heating, when ambient temperature higher than 30℃ set ECO curves

16.4.2 High water temp(fan coil) (Tao≥30℃)(Tao_[30，+∞）_H): If the cooling terminal type is fan coil, when ambient temperature higher than 30℃ set ECO curves

17. Input parameters define

Parameters		Code	Range	Adjust value
Input parameters define	Floor heating inlet water temp enable or not	Twi_FLH	YES/NON	/
	Buffer tank temp 1 enable or not	Twt_BT1	YES/NON	/
	Buffer tank temp 2 enable or not	Twt_BT2	YES/NON	/
	Smart grid	SMART GRID	YES/NON	/
	Solar input	SOLAR INPUT	Tsolar/SL1SL2/NON	/
	Peak electric heat pump running time	SMART GRID RUN TIME	0～24HOURS	1h
	Backup power enable or not	BACKUP POWER	YES/NON	/
	Input power limit when use backup power	POWER INPUT LIMITATION	0%～100%	10%
	Is the temperature sensor inside the wired controller used	WC_T_ROOM	YES/NON	/
	Electric heater 1 power	E-HEATER1 POWER	0～20kW	0.5kW
	Electric heater 2 power	E-HEATER2 POWER	0～20kW	0.5kW
	Tank electric heater power	TANK E-HEATER POWER	0～20kW	0.5kW
	Circulate water pump running time when in standby state	t_PUMP_ON	1～10min	1min
	Circulate water pump stop time when in standby state	t_PUMP_OFF	3～30min	1min
	Circulate water pump control way selection	MODE_PUMP_I	Normal/ Emergency	/
	Voltage adjustment coefficient of mixing valve	V_ADJUST	1%～100%	1%
	At the beginning of voltage adjustment different temp	dTSH_ADJUST	0.2～3°C	0.2°C
	Mixed valve initial voltage	V_INITIAL	2～8V	1V
	Mixed valve minimum voltage	V_MIN	0～4V	1V
	Mixed valve maximum voltage	V_MAX	5～10V	1V
	Voltage adjustment interval time	t_DURATION	1～30min	1min
	Cascade enable or not	Cascade	YES/NON	/
	Static pressure or not	Static pressure	YES/NON	/

17.1 Floor heating inlet water temp enable or not(Twi_FLH): If use double zone control, please set Floor heating inlet water temp enable or not(Twi_FLH) enable

17.2 Buffer tank temp 1 enable or not(Twt_BT1) and Buffer tank temp 2 enable or not(Twt_BT2): If use buffer tank temperature to control heat pump, please set buffer tank temp enable

17.3 Smart grid (SMART GRID): If want use Smart grid function, please set Smart grid enable,heat pump can switch operation state automatically according Smart grid signal.

17.4 Solar input (SOLAR INPUT): If want use solar panel to produce domestic hot water, please these parameters

17.4.1 Solar input(Tsolar): The heat pump determines whether to use solar energy to produce hot water based on the detected temperature of the solar panel

17.4.2 Solar input(SL1SL2): If users have solar kit, the heat pump determines whether to use solar energy to produce hot water based on the solar kit signal

17.5 Peak electric heat pump running time (SMART GRID RUN TIME): If use Smart grid function, when during peak power, the heat pump will limit the operating time of the cooling mode/heating mode according these parameters

17.6 Backup power enable or not (BACKUP POWER): If want use electric heater, please set these

parameters enabled

17.7 Input power limit when use backup power (POWER INPUT LIMITATION): If the maximum current exceeds safety requirements for houses, please use this function to limit maximum current.

17.8 Is the temperature sensor inside the wired controller used(WC_T_ROOM): If want use room temperature to control heat pump, this condition need detect the room temperature. If want use sensor in wired controller, please set these parameters **YES**, if want use additionally sensor, please set this parameters **NON**

17.9 Electric heater 1 power (E-HEATER1 POWER) and Electric heater 2 power (E-HEATER2 POWER) and Tank electric heater power (TANK E-HEATER POWER): Use this parameter to set electric power to statistical power consumption

17.10 Circulate water pump running time when in standby state(t_PUMP_ON) and Circulate water pump stop time when in standby state(t_PUMP_OFF): In standby state, if want circulate pump operation to anti-freeze, if the water pump keeps running, the power consumption will be relatively high, so if water pump running and stopping cycle, it can prevent pipeline freezing and save usage costs, so for this parameters prescribed water pump running time and stop time in standby state

17.11 Circulate water pump control way selection(MODE_PUMP_I)

17.11.1 If set this parameter **NORMAL**, the water pump will automatically adjust the speed based on the inlet and outlet temperatures

17.11.2 If uses want to replace it with another brand of water pump, please set this parameters **EMERGENCY,** the water pump will be running at maximum speed

17.12 Voltage adjustment coefficient of mixing valve(V_ADJUST) and At the beginning of voltage adjustment different temp(dTSH_ADJUST) and Mixed valve initial voltage(V_INITIAL) and Mixed valve minimum voltage(V_MIN) and Mixed valve maximum voltage(V_MAX) and Voltage adjustment interval time(t_DURATION)

These parameters set for mixed valve 0-10 voltage control

17.12.1 Voltage adjustment coefficient of mixing valve(dTSH_ADJUST): The amplitude of each voltage adjustment

17.12.2 At the beginning of voltage adjustment different temp(dTSH_ADJUST): If under floor heating inlet water temperature lower than set point - **dTSH_ADJUST** or higher than set point +**dTSH_ADJUST,** the mixed valve start adjusting

17.12.3 Mixed valve initial voltage(V_INITIAL): The initial voltage value of the mixing valve

17.12.4 Mixed valve minimum voltage(V_MIN): The minimum voltage value that can be adjusted by the mixing valve

17.12.5 Mixed valve maximum voltage(V_MAX): The maximum voltage value that can be adjusted by the mixing valve

17.12.6 Voltage adjustment interval time(t_DURATION): Time interval for regulating the mixing valve

17.13 Cascade enable or not: If use cascade function, please set this parameters enable

17.14 Static pressure or not: If the heat pump is installed in a negative pressure area, you are advised to enable this function to increase the fan speed

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The above designs and specifications are subject to charge without prior notice. Final specifications please refer to latest technical specification provided by sales representative. 201810 Technical Support Department

Updated record

Time	Version	Name	Content
2023/10/30	1	Rex	Added the parameter manual
2024/07/01	2	Choy	Increase default value