

The communication protocol between the DHW heat pump wired controller and the main control board

Data Format:	9600bps/8/N/1
Master-Slave Format:	The wired controller (operation panel) acts as the master device, with the address #0; the control main board acts as the slave device, with the address #1.
Communication Requirements:	After receiving a command from the master, the slave replies 10 ms later; if the response time exceeds 300 ms, the master considers the data lost and resends the communication data.

Control Register Operations (W/R)

Base Address: 900	Item	Command Code	Unit	Range		Remark
900+0	Set Mode	0x10/0x06/0x03		1~5		1-Automatic Mode 2-Energy-Saving Mode 3-Hybrid Mode 4-Electric Heating Mode 5-Ventilation Mode Others-Invalid
900+1	Set Temperature	0x10/0x06/0x03	1℃	38-70		
900+2	Set Power On/Off	0x10/0x06/0x03	--	0-OFF; 1-ON		
900+3	Electric Auxiliary Heating Status	0x10/0x06/0x03	--	Reserve0x0000		
900+4	Current time 1	0x10/0x06/0x03	Month/Day			
900+5	Current time 2	0x10/0x06/0x03	Hour/Minute			
900+6	Force Deforst	0x10/0x06/0x03				Write Enable
900+7	Fault Reset	0x10/0x06/0x03				Write Enable
900+8	Control Parameter Reset	0x10/0x06/0x03	--	1-Control Parameter Reset		Write Enable
900+9	Reserve	0x10/0x06/0x03	--	Reserve		
900+10	Controller Model	0x10/0x06/0x03	--	100		
900+11	Controller Software Version	0x10/0x06/0x03	--	100		V1.00
900+12	Reserve					

Control Parameter Register Operations (W/R)

Base Address: 1000	Item	Command Code	Unit	Range	Default Value	Remark
1000+0	Heating Hysteresis Set Temperature	0x10/0x06/0x03	0.1℃	2℃~15℃	50	N*10
1000+1	Sterilization Cycle (Days)	0x10/0x06/0x03	1day	3~90Day	7	N*10
1000+2	Electric Auxiliary Heating Start Delay	0x10/0x06/0x03	1second	0~90Min	360	N*60
1000+3	Electric Auxiliary Heating High-Temperature Disinfection Stop Temperature	0x10/0x06/0x03	0.1℃	50℃~70℃	700	N*10
1000+4	High-Temperature Disinfection Hold Time	0x10/0x06/0x03	1min	0Min~90Min	30	N
1000+5	Defrost Interval Time	0x10/0x06/0x03	1min	30Min~90Min	45	N*1
1000+6	Defrost Entry Temperature	0x10/0x06/0x03	0.1℃	-30℃~0℃	-70	N*10
1000+7	Defrost Exit Temperature	0x10/0x06/0x03	0.1℃	2℃~30℃	200	N*10
1000+8	Defrost Operating Time	0x10/0x06/0x03	1Second	1Min~12Min	480	N*60

1000+9	Electronic Expansion Valve Adjustment Selection	0x10/0x06/0x03	--	0 Auto/1 Manual	0	N
1000+10	Target Superheat	0x10/0x06/0x03	0.1℃	-9℃~9℃	50	N*10
1000+11	Electronic Expansion Valve Manual Steps	0x10/0x06/0x03	1P(Step)	10~47	350	N*10
1000+12	High-Temperature Disinfection Start Time	0x10/0x06/0x03	Hour	0~23Hour	23	N
1000+13	Electric Auxiliary Heating Start Hysteresis	0x10/0x06/0x03	0.1℃	2℃~20℃	70	N*10
1000+14	Compressor Cumulative Operating Time	0x10/0x06/0x03	1min	10~80 Min	30	N
1000+15	Lower Tank Rising Temperature	0x10/0x06/0x03	0.1℃	0~20℃	20	N*10
1000+16	Switch Port Function	0x10/0x06/0x03	0.1℃	0 (Remote Signal) -1 (PV)	0	N
1000+17	Ambient Temperature Sampling Frequency	0x10/0x06/0x03	1min	2-120Min	15	N
1000+18	Compensation Temperature	0x10/0x06/0x03	0.1℃	-10-10℃	0	N*10
1000+19	Heat Pump Set Temperature Control	0x10/0x06/0x03	--	0 Auto/1 Manual	0	N
1000+20	System Low-Temperature Limit	0x10/0x06/0x03	0.1℃	-10-20℃	-50	N*10
1000+21	Target Superheat 2	0x10/0x06/0x03	0.1℃	-9~20℃	70	N*10
1000+22	Target Superheat 3	0x10/0x06/0x03	0.1℃	-9~20℃	80	N*10
1000+23	Water Pump Attribute Selection	0x10/0x06/0x03	1	~0/1/2	0	N
1000+24	Return Water Temperature Setting	0x10/0x06/0x03	1	15~50℃	35	N
1000+25	Return Water Pump Start Temperature Differential	0x10/0x06/0x03	1	1-15℃	2	N
1000+26	Solar Water Pump Start Temperature Differential	0x10/0x06/0x03	1	5-20℃	5	N
1000+27	Solar Water Pump Stop Hysteresis	0x10/0x06/0x03	1	1-4℃	2	N

Operating Parameter Register Operations (R)

Base Address: 2000	Item	Command Code	Unit	Range		Remark
2000+0	Current Unit Operating Status	0x03	--	Bit 0: Normal standby/Off Bit 1: Power On Bit 2: Fault Shutdown Bit 3: Alarm During Operation Bit 4: Defrosting Bit 5: Sterilization		

2000+1	Current Unit Output Status	0x03	--	Bit 0: Compressor Output Bit 1: Electric Auxiliary Heating Output Bit 2: Fan Output Bit 3: Four-Way Valve Output Bit 4: Water Pump Output		
2000+2	Electronic Expansion Valve Opening	0x03	1P	0-560P		
2000+3	Digital Input Status	0x03	--	Bit 0: K1 Input Open Bit 1: K2 Input Open Bit 2: K3 Input Open Bit 3: K4 Input Open Bit 4: K5 Input Open Bit 5: K6 Input Open		
2000+4	Lower Tank Temperature (T1) Value	0x03	0.1℃			
2000+5	Upper Tank Temperature (T2) Value	0x03	0.1℃			
2000+6	Coil Temperature (T3) Value	0x03	0.1℃			
2000+7	Return Air Temperature (T4) Value	0x03	0.1℃			
2000+8	Ambient Temperature (T5) Value	0x03	0.1℃			
2000+9	Return Water Temperature (T6) Value	0x03	0.1℃			
2000+10	Fault Status 0	0x03	--	Bit 1: Upper Tank Temperature Sensor Fault Bit 2: Coil Temperature Sensor Fault Bit 3: Return Air Temperature Sensor Fault Bit 4: Ambient Temperature Sensor Fault Bit 5: Winter Anti-Freeze Protection Bit 6: Remote Switch Disconnected Bit 7: Water Overheat Protection Bit 8: High Pressure Protection Bit 9: Low Pressure Protection Bit 10: Overheat Protection Bit 11: Compressor Operating Limit Bit 12: Water Flow Fault Bit 13: Electronic Anode Fault Bit 14: E-Unit Fault Bit 15: Communication		
2000+11	Fault Status 1	0x03	--	(0x0000) Reserve		Reserve
2000+12	Fault Status 2	0x03	--	(0x0000) Reserve		Reserve
2000+13	Calculated Water Temperature Value	0x03	--			
2000+14	Software Version	0x03	--	100		V1.00
2000+15	Overheat Value	0x03	--			Reserve
2000+16	Reserve	0x03	--			
2000+17	Compressor Start Count	0x03	--			
2000+18	Total Compressor Operating Time	0x03	--			
2000+19	Electric Heating Start Count	0x03	--			
2000+20	Total Electric Heating Operating Time	0x03	--			
2000+21	Defrost Count	0x03	--			

热水机主控程序设定参数

更改完所有参数，等待10S写入保存							
基地址： 1000	名称	代号	单位	倍数	默认参数	范围	备注
0	水箱水温 设定温度	TS1	1℃	10	45	10~65℃	可调
1	制热回差	POW_ADJ_1	1℃	10	5	2~15℃	可调
2	电辅热启动 水箱水	HEATER_ST	1℃	10	65	10~75℃ (参数	可调
3	电辅热启动 延时t1	HEATER_DI	1min(分)	1	6	0~90	可调(实际 时间=设置 值×5倍)
4	电辅热高 温消毒停	DISINFEC	1℃	10	70	50~70℃	可调
5	高温消毒	DISINFEC	1min(分)	1	30	0~90min	可调
6	制热除霜	DEF_CYC_1	1min(分)	60	45	30~90min	可调
7	制热除霜	DEF_IN_T1	1℃	10	-7	-30~0℃	可调
8	制热退出	DEF_OUT_1	1℃	10	13	2~30℃	可调
9	制热退出	DEF_OUT_1	1min(分)	60	8	1~12min	可调
10	电子膨胀	PMV_TYPE	--	1	1	0/1	0: 手动,
11	目标过热	DSH_TARG	1℃	10	4	-9~9℃	可调
12	手动调节	PMV_MANU	10P(步)	10	35	10~47	N*10
13	高温消毒 启动时间	DISINFEC	时	1	23	0~23	在不断电 状态下,
14	水泵属性 选择	PUMP_TYP	--	1	0	0,1,2	0: 无水泵 /1: 回水
15	回水温度	T6_TEMP_S	1℃	10	35	15~50℃	可调
16	回水水泵	T6_PUMP_I	1℃	10	2	1-15℃	可调
17	太阳能水	SUN_PUMP	1℃	10	5	5-20℃	可调
18	太阳能水	SUN_PUMP	1℃	10	2	1-4℃	可调
19	低温电热 替代热泵	LOW_HEAT	--	1	1	0/1	0为电热不 替代/1为
20	除霜时电 热启动	DEF_HEAT	--	1	1	0/1	0除霜时电 热不启动 /1除霜时
21	杀菌周期	DISINFEC	--	1	7	1-30天	可调
22	膨胀阀除	DISINFEC	10P(步)	10	30	10~47	N*10
23	膨胀阀初	PMV_STAR	10S(秒)	10	21	3~30	N*10秒
24	低压开关	LP_CHK_T1	1℃	10	-5	-10~25	可调
25	压机启动 后，低压	LP_CHK_DI	1min(分)	60	5	2min~ 20min	
26	四通阀换	WAY4_SET	1℃	10	-2	-10℃~10	0
27	压机启动 后，四通 阀换	WAY4_STA	1min(分)	60	2	0~15min	

28	压机关, 电子膨胀阀动作选	COMP_OFF	--	1	0	0-1	0无效/1有效
29	热泵设定温度控制	TS_CONTR	--	1	0	0-1	0:TS1=实际值; 1:
30	补偿温度	COMPENSA	°C	10	0	-10-10°C	可调
31	环境温度	T5_SAMP	1min(分)	60	15	2-120min	可调
32	热泵达温	COMP_OFF	--	1	1	0-1	可调
33	电加热启	HEATER_D	1°C	10	3	1-10°C	可调
34	电加热最	HEATER_M	1°C	10	75	65-85°C	可调
35	开关口应	ON_OFF_T	--	1	0	0-1	可调

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450 ,//0 #define TS1 (0)
50 ,//1 #define POW_ADJ_DIF_TEMP (1)
650 ,//2 #define HEATER_START_TEMP (2)
6 ,//3 #define HEATER_DLY_TIM (3)
700 ,//4 #define DISINFECT_TEMP (4)
30 ,//5 #define DISINFECT_TIM (5)
2700 ,//6 #define DEF_CYC_TIM (6)
-70 ,//7 #define DEF_IN_TEMP (7)
130 ,//8 #define DEF_OUT_TEMP (8)
480 ,//9 #define DEF_OUT_TIM (9)
1 ,//10 #define PMV_TYPE (10)
40 ,//11 #define DSH_TARGET (11)
350 ,//12 #define PMV_MANUAL_SET (12)
23 ,//13 #define DISINFECT_START_T (13)
0 ,//14 #define PUMP_TYPE (14)
350 ,//15 #define T6_TEMP_SET (15)
20 ,//16 #define T6_PUMP_DIF_TEMP (16)
50 ,//17 #define SUN_PUMP_DIF_TEMP (17)
20 ,//18 #define SUN_PUMP_OFF_TEMP (18)
1 ,//19 #define LOW_HEATER_SET (19)
1 ,//20 #define DEF_HEATER_SET (20)
7 ,//21 #define DISINFECT_CYC (21)
300 ,//22 #define DISINFECT_PMV_OPEI (22)
210 ,//23 #define PMV_START_TIM (23)
-50 ,//24 #define LP_CHK_TEMP (24)
300 ,//25 #define LP_CHK_DLY_TIM (25)
-20 ,//26 #define WAY4_SET_TEMP (26)
120 ,//27 #define WAY4_START_TIM (27)

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0 ,//28 #define COMP_OFF_PMV_TYPE (28)
0 ,//29 #define TS_CONTROL_TYPE (29)
0 ,//30 #define COMPENSATE_TEMP (30)
900 ,//31 #define T5_SAMP_CYC_TIM (31)
1 ,//32 #define COMP_OFF_HEATER (32)
30 ,//33 #define HEATER_DIF_TEMP (33)
750 ,//34 #define HEATER_MAX_SET_TEMP (34)
0 //35 #define ON_OFF_TYPE (35)
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