

Communication protocol between monoblock heat pump controller and mainboard

Data Format:9600bps/8/N/1

Master-slave Format: controller (operation panel) host computer as the master, address: #0; control board as slave, address: #1;

Communication Requirements: The slave will reply after 10ms after receiving the command from the master; if the time exceeds 300ms; the master defaults to data loss and resends the communication data.

Control Register Operation (W/R)

Touch Screen Parameter	Decimal +1	Decimal	Base Address: 0x1000	Item	Command Code	Units	Range	Default Values	Remark
P0	4097	4096	0x1000+0	On-off Setting	0x10/0x06/0x03	--	0-Off; 1-On	0	Remind that you need to update during operation, otherwise you don't need to update
P1、C54	4098	4097	0x1000+1	Mode Setting	0x10/0x06/0x03		bit0:DHW, bit1:A/C Heating, bit2:A/C Cooling, bit0+bit1:A/C Heating+DHW, bit0+bit2:A/C Cooling+DHW	1	Remind that you need to update during operation, otherwise you don't need to update
P2、C45	4099	4098	0x1000+2	A/C Heating Temperature Setting	0x10/0x06/0x03	--	10~75℃	45	Remind that you need to update during operation, otherwise you don't need to update
P3、C46	4100	4099	0x1000+3	A/C Cooling Temperature Setting	0x10/0x06/0x03		7~25℃	12	Remind that you need to update during operation, otherwise you don't need to update
P4、C47	4101	4100	0x1000+4	DHW Temperature Setting			10~70℃ (Value≥P35, Only electric heater operation)	45	Remind that you need to update during operation, otherwise you don't need to update
P5	4102	4101	0x1000+5	Indoor Temperature Setting	0x10/0x06/0x03	1℃	18~35℃	21	Remind that you need to update during operation, otherwise you don't need to update
	4103	4102	0x1000+6	Electrical Heating State	0x10/0x06/0x03	--	0: Auto; 1-Manual On; 2-Manual Off	0	Remind that you need to update during operation, otherwise you don't need to update
	4104	4103	0x1000+7	Forced Defrosting	0x10/0x06/0x03		1-Forced Defrosting; 0-Stop Defrosting	0	Show Valid
	4105	4104	0x1000+8	Fault Clearing	0x10/0x06/0x03			0	Show Valid
	4106	4105	0x1000+9	Control Parameter Reset	0x10/0x06/0x03	--		0	Show Valid

	4107	4106	0x1000+10	Current Time 1	0x10/0x06/0x03	Monthly/Daily	Monthly: 1-12; Daily: 1-31		Change Update
	4108	4107	0x1000+11	Current Time 2	0x10/0x06/0x03	Hour/Minute	Hour: 0-23; Minute: 0-59		Change Update
	4109	4108	0x1000+12	Status Data	0x10/0x06/0x03	--	bit0-14:reserved bit15:Commodity Inspection Mark		
	4110	4109	0x1000+13	Controller Model	0x10/0x06/0x03	--	100		
C56	4111	4110	0x1000+14	Controller Software Version	0x10/0x06/0x03	--	100		
	4112	4111	0x1000+15	Water Pump Timing Open Sign	0x10/0x06/0x03	--	0-Water Pump Off; 1-Water Pump On		

Operating Parameter Register Operation (R)

Touch Screen Parameter	Decimal +1	Decimal	Base Address: 0x1000	Item	Command Code	Units	Range、Description		Remark
	4353	4352	0x1100+0	Main Control Board Model	0x03	--			Query Display
C55	4354	4353	0x1100+1	Main Control Board Software Version	0x03	--			Query Display
C31(bit8),C33(bit4),C34(bit9),C35(bit9)	4355	4354	0x1100+2	The current operating status of the unit	0x03	--	bit0: Standby, Shutdown; bit1: Power On State bit2: Downtime State bit3:Alarm Power On State bit4: Defrosting State bit8: Sterilization Status bit9: Antifreeze State bit10: floor drying bit11: PV Mode		
C36(bit1),C37(bit0),C38(bit8),C39(bit9),C40(bit6),C41(bit7),C42(bit3),C43(bit4),C44(bit5)	4356	4355	0x1100+3	The current output status of the unit	0x03	--	bit0: Four-way Valve bit1: Crankshaft Heating Belt bit2: Non bit3: C1 Pump bit4: C2 Pump bit5: C3 Pump bit6: E1 Electrical Heating bit7: E2 Electrical Heating bit8: G1 Valve bit9: G2 Valve bit10: Non bit11: Non bit12: Non		

C29(bit1),C30(bit0),C60(bit7),C61(bit5),C62(bit3)	4357	4356	0x1100+4	Switch Input Status	0x03	--	bit0: K1 Input Disconnected bit1: K2 Input Disconnected bit2: K3 Input Disconnected bit3: K4 Input Disconnected bit4: K5 Input Disconnected bit5: K6 Input Disconnected bit6: K7 Input Disconnected bit7: K8 Input Disconnected		
	4358	4357	0x1100+5	System Capability Requirements	0x03	-		0-100	Query Display
C00	4359	4358	0x1100+6	Coil temp	0x03	0.1℃	Coil Temp(External Condenser Temp)	-30~97℃	Query Display
C01	4360	4359	0x1100+7	Discharge temp	0x03	0.1℃	Exhaust Air Temp	-30~128℃	Query Display
C02	4361	4360	0x1100+8	Ambient temp	0x03	0.1℃	Outdoor Ambient Temp	-30~97℃	Query Display
C03	4362	4361	0x1100+9	Suction temp	0x03	0.1℃	Return Air Temp	-30~97℃	Query Display
C04	4363	4362	0x1100+10	EVI Inlet temp	0x03	0.1℃	EVI Inlet Temp	-30~97℃	Query Display
C05	4364	4363	0x1100+11	EVI Outlet temp	0x03	0.1℃	EVI Outlet Temp	-30~97℃	Query Display
C06	4365	4364	0x1100+12	Refrigerant liquid temperature	0x03	0.1℃	Plate liquid change pipe refrigerant temperature	-30~97℃	Query Display
C07	4366	4365	0x1100+13	Water inlet temperature	0x03	0.1℃	Inlet Water Temp	-30~97℃	Query Display
C08	4367	4366	0x1100+14	Water outlet temperature	0x03	0.1℃	Onlet Water Temp	-30~97℃	Query Display
C09	4368	4367	0x1100+15	DHW tank temperature	0x03	0.1℃	Dhw Water Tank Temp	-30~97℃	Query Display
C10	4369	4368	0x1100+16	Water flow	0x03	L/min	Water Flow	0.8-142.8L/min	Query Display
C11	4370	4369	0x1100+17	Main circulation temperature differential	0x03	0.1℃	Main Circulation Temperature Differential	-30~97℃	Query Display
C12	4371	4370	0x1100+18	EVI circulation temperature differential	0x03	0.1℃	EVI Circulation Temperature Differential	-30~97℃	Query Display
C13	4372	4371	0x1100+19	High pressure	0x03	ParG	High Pressure	20-45/ParG	Query Display
C14	4373	4372	0x1100+20	Low pressure	0x03	ParG	Low Pressure	0.1-1/ParG	Query Display
C15	4374	4373	0x1100+21	Compressor running frequency	0x03	1HZ	Compressor Running Frequency	0~120HZ	Query Display
C16	4375	4374	0x1100+22	Fan motor 1	0x03	1RPM	DC Fan Motor 1 Rotating Speed	0-1500RPM	Query Display
C17	4376	4375	0x1100+23	Fan motor 2	0x03	1RPM	DC Fan Motor 2 Rotating Speed	0-1500RPM	Query Display
C18	4377	4376	0x1100+24	EEV steps	0x03	1P	EEV Steps	0-480	Query Display
C19	4378	4377	0x1100+25	EVI EEV steps	0x03	1P	EVI EEV Steps	0-480	Query Display
C20	4379	4378	0x1100+26	Compressor target frequency	0x03	1HZ	Compressor Target Frequency	0-100HZ	Query Display
C21	4380	4379	0x1100+27	Compressor input current	0x03	0.1A	Compressor Input Current	0-50A	Query Display
C22	4381	4380	0x1100+28	IPM temperature	0x03	1℃	IPM Temp	-30~97℃	Query Display
C23	4382	4381	0x1100+29	AC power voltage	0x03	1V	AC Power Voltage	0-500V	Query Display
C24	4383	4382	0x1100+30	DC power voltage	0x03	1V	DC Power Voltage	0-1000V	Query Display
C25	4384	4383	0x1100+31	T6	0x03	0.1℃	T6	-30~97℃	Query Display
C26, C53	4385	4384	0x1100+32	Room Temperature (T2)	0x03	0.1℃	Indoor Temp(T2)	-30~97℃	Query Display
C27	4386	4385	0x1100+33	Evaporator temperature	0x03	0.1℃	Evaporator Temperature	-30~97℃	Query Display

C28	4387	4386	0x1100+34	Condenser temperature	0x03	0.1℃	Condenser Temperature	-30~97℃	Query Display
	4388	4387	0x1100+35	Frequency Limit Item	0x03	--	Valve 0-10	bit0--T3 coil temperature frequency limit bit1--high pressure frequency limit bit2-- AC voltage frequency limit bit3--exhaust temperature frequency limit bit4--AC current frequency	Query Display
	4389	4388	0x1100+36	Calculating Temperature From Energy Requirements	0x03	0.1℃	Hot Water	10-70℃	
	4390	4389	0x1100+37	Calculating Temperature From Energy Requirements	0x03	0.1℃	Cooling Or Heating	Heating: 10-75℃; Cooling: 7-25℃	
E01(bit0),E02(bit1),E03(bit2),E04(bit3),E05(bit4),E06(bit5),E07(bit6),E08(bit7),E09(bit8),E10(bit9),E11(bit10),E12(bit11),E13(bit12),E14(bit13),E15(bit14).E16(bit15)	4391	4390	0x1100+38	Fault State 0	0x03	--	bit0:Outdoor air temp sensor error bit1:Coil temp sensor error bit2:Suction temp sensor error bit3:EVI inlet temp sensor error bit4:EVI outlet temp sensor error bit5:Discharge temp sensor error bit6:DHW temp sensor error bit7:Outlet temp sensor error bit8:Inlet temp sensor error bit9:Liquid refrigerant temp sensor error bit10:High pressure sensor error bit11:Low pressure sensor error bit12:High pressure protection bit13:Low pressure protection bit14:Water flow error bit15:Communication error	Fault Display/Historical Faults	

E17(bit0),E18(bit1),E99(bit2),E20(bit3),E56(bit4),E22(bit5),E23(bit6),E24(bit7),E21(bit8),E26(bit9),E27(bit10),E28(bit11),E29(bit12),E58(bit13),E32(bit15)	4392	4391	0x1100+39	Fault State 1	0x03	bit0:Discharge temp too high protection bit1:E18 EEPROM Parameter Error bit2:E99 Driver Board Communication Failure bit3:IPM abnormal protect bit4:E21 Voltage Failure bit5:Water temp differential too big bit6:DHW anti-freeze twice bit7:AC anti-freeze twice bit8:E56 Primary Side Xurrent Protection bit9:T6 temp sensor error bit10:Ambient temperature exceeds upper limit bit11:Inletwater temp.too high (Cooling) bit12:Room temp sensor error bit13:E58 T4 Low Ambient Temperature Protection bit14:Reserved	Fault Display/Historical Faults
E36(bit3),E59(bit6),E40(bit7),E44(bit11),E45(bit12)	4393	4392	0x1100+40	Fault State 2	0x03	-- bit0: Reserved bit1: Reserved bit2: Reserved bit3: E36 Fan Motor Driver Communication Failure bit4: Reserved bit5: Reserved bit6: E59 Inlet And Outlet Water Temp Reverse Connection Or Abnormal Four-way Valve bit7: E40 Cooling Outlet Water Temp Low Protection bit8: Reserved bit9: Reserved bit10: Reserved bit11: E44 1# DC motor error bit12: E45 2# DC motor error bit13: Reserved bit14: Reserved bit15: Reserved	Fault Display/Historical Faults
E50(bit1),E100(bit2),E101(bit3),E102(bit4),E103(bit5),E104(bit6),E105(bit7),E106(bit8),E107(bit9),E108(bit10)	4394	4393	0x1100+41	Fault State 3	0x03	- bit1: E50 Condenser Overheating Protection bit2: E51 High refrigerant concentration protection	Fault Display/Historical Faults

E20-1(bit0),E20-5(bit1),E20-320(bit2),E20-288(bit5),E20-384(bit6),E20-32(bit7),E20-16(bit8),E20-264(bit9),E20-257(bit15),E20-260(bit4),E20-261(bit11)	4395	4394	0x1100+42	Driver Board Fault Codes 0	0x03	--	Bit0:IPM Failure Bit1:Compressor Drive Failure (Drive Failure Except IPM) Bit2:Compressor Overcurrent Bit3:NA Bit4:NA Bit5:IPM Overtemperature Shutdown Bit6:PFC Failure Bit7:DC Busbar Overvoltage Bit8:DC Busbar Undervoltage Bit9:AC Input Voltage Overvoltage And Undervoltage Bit10:AC Input Current Over- Current Shutdown Bit11:NA Bit12:NA Bit13:NA Bit14:NA Bit15:Abnormal Communication With Main Control Board		Fault Display/Historical Faults
E20-4(bit0),E44(bit1)	4396	4395	0x1100+43	Driver Board Fault Codes 1	0x03	--	Bit0:Compressor Current Frequency Reduction Alarm Bit1:NA Bit2:IPM Temperature Drop Alarm Bit3:NA Bit4: AC Input Current Frequency Reduction Alarm Bit5: NA Bit6-Bit15:NA		
Drive self-protection non-stop, self-adaptive adjustment	4397	4396	0x1100+44	Driver Board Fault Codes 2	0x03	--	0: No Fault 1: Acceleration Overcurrent 2: Deceleration Overcurrent 3: Constant Speed Overcurrent 4: Acceleration Overvoltage 5: Deceleration Overvoltage 6: Constant Speed Overvoltage 8: Out Of Sync Failure 9: Phase-out Fault 10: IPM Module Hardware Protection Failure 19: Abnormal Current Detection Circuit		
	4398	4397	0x1100+45	C1 Water Pump PWM Output Value	0x03	--	1600-16000		Testing Reference
	4399	4398	0x1100+46	Compressor Phase Current	0x03	0.1A	0-999		

	4400	4399	0x1100+47					
	4401	4400	0x1100+48					
	4402	4401	0x1100+49					
	Decimal +1	Decimal	Address					
	4609	4608	0x1200+0	Compressor total running times	0x03	--		
C49	4610	4609	0x1200+1	Return lubricant oil status	0x03	0	0-normal mode, 1-oil return	
C50	4611	4610	0x1200+2	Compressor total running time	0x03	1Hour	0-65535	
C51	4612	4611	0x1200+3	C1 water pump speed	0x03	1%	0--100%	
C52	4613	4612	0x1200+4	Running mode	0x03		0-off mode 1-DHW mode 2-heating mode 4-cooling mode	
	4614	4613	0x1200+5	Defrost times	0x03	--		
	4615	4614	0x1200+6	C2 water pump speed	0x03	\	0--1000%	
C55	4616	4615	0x1200+7	PCB Software version	0x03	\	100-->V100	
C56	4617	4616	0x1200+8	HMI software version	0x03	\	100-->V100	
	4618	4617	0x1200+9	Concentration	0x03	0.10%	0~1000	
	4619	4618	0x1200+10	Alarm Threshold	0x03	0.10%	0~1000	
	4620	4619	0x1200+11	Alarm or not	0x03	\	0\1	

			0x1200+20	Historical Faults 0	0x03		0-No Fault; 1--106 Show E01--E106;
			0x1200+21	Historical Faults 1	0x03		0-No Fault; 1--106 Show E01--E106;
			0x1200+22	Historical Faults 2	0x03		0-No Fault; 1--106 Show E01--E106;
			0x1200+23	Historical Faults 3	0x03		0-No Fault; 1--106 Show E01--E106;
			0x1200+24	Historical Faults 4	0x03		0-No Fault; 1--106 Show E01--E106;
			0x1200+25	Historical Faults 5	0x03		0-No Fault; 1--106 Show E01--E106;
			0x1200+26	Historical Faults 6	0x03		0-No Fault; 1--106 Show E01--E106;
			0x1200+27	Historical Faults 7	0x03		0-No Fault; 1--106 Show E01--E106;

Operating Parameter Register Operation (R)

	Decimal +1	Decimal	Base Address: 0x1A00	Item	Command Code	Units	Range		Remark
	6657	6656	0x1A00+0	Compressor Frequency Adjust	0x10/0x06/0x03	--	0/1		
	6658	6657	0x1A00+1	Adjust Frequency	0x10/0x06/0x03	Hz	0-120		
	6659	6658	0x1A00+2	Adjust A Fan Speed enabled	0x10/0x06/0x03	--	0/1		
	6660	6659	0x1A00+3	Adjust A Fan Speed enabled	0x10/0x06/0x03	RPM	0-1500RPM		
	6661	6660	0x1A00+4	Adjust B Fan Speed enabled	0x10/0x06/0x03	--	0/1		
	6662	6661	0x1A00+5	Adjust B Fan Speed enabled	0x10/0x06/0x03	RPM	0-1500RPM		
	6663	6662	0x1A00+6	Adjust A Electronic Expansion Valve enabled	0x10/0x06/0x03	--	0/1		
	6664	6663	0x1A00+7	Adjust A Electronic Expansion Valve Opening and closing degree enabled	0x10/0x06/0x03	P	0-500		
	6665	6664	0x1A00+8	Adjust B Electronic Expansion Valve enabled	0x10/0x06/0x03	--	0/1		
	6666	6665	0x1A00+9	Adjust B Electronic Expansion Valve Opening and closing degree enabled	0x10/0x06/0x03	P	0-500		
	6667	6666	0x1A00+10	Forbid Defrosting enabled	0x10/0x06/0x03	--	0/1		
	6668	6667	0x1A00+11	C1 pump speed enabled	--	0/1		0x10/0x06/0x03	
	6669	6668	0x1A00+12	C1 Pump speed percentage	--	0-100		0x10/0x06/0x03	
	6670	6669	0x1A00+13	C2 pump speed enabled	--	0/1		0x10/0x06/0x03	
	6671	6670	0x1A00+14	C2 Pump speed percentage	--	0-100		0x10/0x06/0x03	

Control parameter register operation (W/R)

Touch Screen Parameter	Decimal +1	Decimal	Base Address: 0x2000	Item	Function Code	Units	Range、 Description	Value	Remark
P00	8193	8192	0x2000+0	Function selection 1	0x10/0x06/0x03	1	0:Off; 1: On	--	Hexadecimal display

P01	8194	8193	0x2000+1	Function selection 2	0x10/0x06/0x03	1	0: Off 1: DHW 2: A/C Heating 3: A/C Heating +DHW 4: A/C Cooling 5: A/C Cooling +DHW	actual value	Hexadecimal display
P06	8197	8196	0x2000+4	A/C Hysteresis temperature (cooling and heating use the same point)	0x10/0x06/0x03	0.1℃	1~15℃	*0.1=actual value	Decimal display
P07	8198	8197	0x2000+5	DHW Hysteresis temperature	0x10/0x06/0x03	0.1℃	1~15℃	*0.1=actual value	Decimal display
P08	8199	8198	0x2000+6	A/C Heating AU maximum temperature	0x10/0x06/0x03	0.1℃	35~75℃	*0.1=actual value	Decimal display
P09	8200	8199	0x2000+7	A/C Heating AU offset temperature	0x10/0x06/0x03	0.1℃	-10~10℃	*0.1=actual value	Decimal display
P10	8201	8200	0x2000+8	Sterilization interval days	0x10/0x06/0x03	1	1~99 days	actual value	Decimal display
P11	8202	8201	0x2000+9	Sterilization start time	0x10/0x06/0x03	1	0~23 hour	actual value	Decimal display
P12	8203	8202	0x2000+10	Sterilization run time	0x10/0x06/0x03	1	5~99 minutes	actual value	Decimal display
P13	8204	8203	0x2000+11	Sterilization temperature	0x10/0x06/0x03	0.1℃	50~70℃	*0.1=actual value	Decimal display
P14	8205	8204	0x2000+12	Sterilization mode selection	0x10/0x06/0x03	1	0: Automatic 1: Manual 2: Invalid	actual value	Decimal display
P15	8206	8205	0x2000+13	Night mode starting time	0x10/0x06/0x03	1	0~23h	actual value	Decimal display
P16	8207	8206	0x2000+14	Night mode ending time	0x10/0x06/0x03	1	0~23h	actual value	Decimal display

P17	8208	8207	0x2000+15	Night mode effective	0x10/0x06/0x03	1	0: invalid, 1; valid	actual value	Decimal display
P18	8209	8208	0x2000+16	DHW AU function	0x10/0x06/0x03	1	0: invalid, 1; valid	actual value	Decimal display
P19	8210	8209	0x2000+17	AC Heating Model AU enable	0x10/0x06/0x03	1	0: invalid, 1; valid	actual value	Decimal display
P20	8211	8210	0x2000+18	Water pump working way	0x10/0x06/0x03	1	0: non-stop 1: stop at temperature 2: stop 15/open 1min	actual value	Decimal display
P21	8212	8211	0x2000+19	Water pump antifreeze time	0x10/0x06/0x03	1min	5~50 minutes	actual value	Decimal display
P22	8213	8212	0x2000+20	A/C Electric Auxiliary Thermal Start Ambient Temperature	0x10/0x06/0x03	0.1℃	-30~20℃	*0.1=actual value	Decimal display
P23	8214	8213	0x2000+21	DHW Electric Auxiliary Thermal Start Ambient Temperature	0x10/0x06/0x03	0.1℃	-30~20℃	*0.1=actual value	Decimal display
P24	8215	8214	0x2000+22	Electric heating E1/E2 stop ambient temperature hysteresis	0x10/0x06/0x03	0.1℃	1~15℃	*0.1=actual value	Decimal display
P25	8216	8215	0x2000+23	A/C antifreeze temperature	0x10/0x06/0x03	0.1℃	-15~5℃	*0.1=actual value	Decimal display
P26	8217	8216	0x2000+24	Defrost Interval Multiplier	0x10/0x06/0x03	1	0: no defrosting, 1/2/3/4/(interval x4)	actual value	Decimal display
P27	8218	8217	0x2000+25	defrost cycle	0x10/0x06/0x03	1min	15~99 minutes	actual value	Decimal display
P28	8219	8218	0x2000+26	Defrost mode (it will default to 0 after the forced defrost is completed)	0x10/0x06/0x03	1	0-automatic defrosting, 1-forced defrosting	actual value	Decimal display
P29	8220	8219	0x2000+27	Defrost Start Coil Temperature	0x10/0x06/0x03	0.1℃	-8~5℃	*0.1=actual value	Decimal display
P30	8221	8220	0x2000+28	Defrost end Coil Temperature	0x10/0x06/0x03	0.1℃	5~30℃	*0.1=actual value	Decimal display

P31	8222	8221	0x2000+29	Defrost working maximum time	0x10/0x06/0x03	1min	2~20 minutes	actual value	Decimal display
P32	8223	8222	0x2000+30	Parameter 31 Main valve control way	0x10/0x06/0x03	1	0: None 1: Look-up table 2: Manual 3: Return air superheat 4: Exhaust superheat	actual value	Decimal display
P33	8224	8223	0x2000+31	Parameter 32 Main valve manual opening for heating	0x10/0x06/0x03	1	50~480	actual value	Decimal display
P34	8225	8224	0x2000+32	Parameter 33 Main valve manual opening for cooling	0x10/0x06/0x03	1	50~480	actual value	Decimal display
P35	8226	8225	0x2000+33	DHW mode, compressor working upper limit water temperature	0x10/0x06/0x03	0.1℃	0~70℃	*0.1=actual value	Decimal display
P36	8227	8226	0x2000+34	Interval time between compressor and E1 startup (reserved)	0x10/0x06/0x03	1min	0~999min	actual value	Decimal display
P37	8228	8227	0x2000+35	Heating mode, DC fan speed variable	0x10/0x06/0x03	0.1℃	2~15℃	*0.1=actual value	Decimal display
P38	8229	8228	0x2000+36	Cooling mode, DC fan speed variable	0x10/0x06/0x03	0.1℃	3~18℃	*0.1=actual value	Decimal display
P39	8230	8229	0x2000+37	Inverter compressor model setting (reserved)	0x10/0x06/0x03	1	0~999	actual value	Decimal display
P40	8231	8230	0x2000+38	P38 Running set frequency function	0x10/0x06/0x03	1	0: manual, 1: automatic	actual value	Decimal display
P41	8232	8231	0x2000+39	Compressor oil return frequency	0x10/0x06/0x03	1Hz	10~100 Hz	actual value	Decimal display
P42	8233	8232	0x2000+40	Compressor prohibits up-frequency current	0x10/0x06/0x03	0.1A	1~50A	*0.1=actual value	Decimal display
P43	8234	8233	0x2000+41	Compressor down frequency current	0x10/0x06/0x03	0.1A	1~50A	*0.1=actual value	Decimal display
P44	8235	8234	0x2000+42	Compressor shutdown current	0x10/0x06/0x03	0.1A	1~50A	*0.1=actual value	Decimal display
P45	8236	8235	0x2000+43	Compressor maximum frequency	0x10/0x06/0x03	1Hz	50~120Hz	actual value	Decimal display
P46	8237	8236	0x2000+44	Compressor minimum frequency	0x10/0x06/0x03	1Hz	0~90Hz	actual value	Decimal display
P47	8238	8237	0x2000+45	Compressor defrost frequency	0x10/0x06/0x03	1Hz	30~90Hz	actual value	Decimal display
P48	8239	8238	0x2000+46	DHW maximum frequency	0x10/0x06/0x03	1Hz	2~10(percentage of the highest set frequency)	actual value	Decimal display
P49	8240	8239	0x2000+47	Exhaust overheat proportional coefficient	0x10/0x06/0x03	0.1	0~99(display value*0.1)	*0.1=actual value	Decimal display
P50	8241	8240	0x2000+48	Exhaust overheat differential coefficient	0x10/0x06/0x03	1	0~99	actual value	Decimal display
P51	8242	8241	0x2000+49	High pressure prohibit boost pressure	0x10/0x06/0x03	0.1BarG	20- 45bar(display value*0.1)	*0.1=actual value	Decimal display
P52	8243	8242	0x2000+50	High pressure cancel prohibits boost pressure	0x10/0x06/0x03	0.1BarG	20- 45bar(display value*0.1)	*0.1=actual value	Decimal display
P53	8244	8243	0x2000+51	High voltage protection set point	0x10/0x06/0x03	0.1BarG	20- 45bar(display value*0.1)	*0.1=actual value	Decimal display
P54	8245	8244	0x2000+52	Low voltage protection set point	0x10/0x06/0x03	0.1BarG	0.1-1.0 Bar(display value*0.01)	*0.1=actual value	Decimal display
P55	8246	8245	0x2000+53	High pressure protection release hysteresis	0x10/0x06/0x03	0.1BarG	1- 10bar(display value*0.1)	*0.1=actual value	Decimal display
P56	8247	8246	0x2000+54	Low pressure protection release hysteresis	0x10/0x06/0x03	0.1BarG	0.1-5 Bar(display value*0.01)	*0.1=actual value	Decimal display
P57	8248	8247	0x2000+55	Exhaust temperature protection point	0x10/0x06/0x03	1℃	100-125℃	actual value	Decimal display
P58	8249	8248	0x2000+56	C1 water pump speed regulation temperature difference	0x10/0x06/0x03	0.1℃	3~8℃	*0.1=actual value	Decimal display
P59	8250	8249	0x2000+57	PWM water pump minimum speed	0x10/0x06/0x03	10%	Corresponding to 20~80% of the speed	actual value	Decimal display
P60	8251	8250	0x2000+58	DC fan maximum speed	0x10/0x06/0x03	1RPM	500~1500rpm(display value*10)	actual value	Decimal display
P61	8252	8251	0x2000+59	Minimum water flow	0x10/0x06/0x03	1L/min	3~80L/min, step 1	actual value	Decimal display

P62	8253	8252	0x2000+60	A/C function selection	0x10/0x06/0x03	1	0: hot and cold 1: cold only 2: hot only	actual value	Decimal display
P63	8254	8253	0x2000+61	DHW function selection	0x10/0x06/0x03	1	0: invalid, 1: valid	actual value	Decimal display
P64	8255	8254	0x2000+62	Minimum opening of expansion valve	0x10/0x06/0x03	1P	0-480	actual value	Decimal display
P65	8256	8255	0x2000+63	Water pump C2 function definition	0x10/0x06/0x03	1	0: auxiliary pump, 1: indoor circulation pump	actual value	Decimal display
P66	8257	8256	0x2000+64	Water source air cooling option	0x10/0x06/0x03	1		actual value	Decimal display
P67	8258	8257	0x2000+65	Indoor temperature controller (reserved)	0x10/0x06/0x03	1	0: invalid, 1: valid	actual value	Decimal display
P68	8259	8258	0x2000+66	Water flow switch type selection	0x10/0x06/0x03	1	0: water flow switch, 1: flow meter	actual value	Decimal display
P69	8260	8259	0x2000+67	Type of fan	0x10/0x06/0x03	1	0:AC 1: First DC 2:Second DC 3:Two DC	actual value	Decimal display
P70	8261	8260	0x2000+68	Power-down memory function	0x10/0x06/0x03		0: invalid, 1: valid	actual value	Decimal display
P71	8262	8261	0x2000+69	P71 DC fan speed control	0x10/0x06/0x03	1	0: manual, 1: automatic	actual value	Decimal display
P72	8263	8262	0x2000+70	P72 DC fan manual speed	0x10/0x06/0x03	1	0~1500rpm(display value*10)	actual value	Decimal display
P73	8264	8263	0x2000+71	Pressure sensor enable	0x10/0x06/0x03	1	0: pressure sensor, 1: pressure switch	actual value	Decimal display
P74	8265	8264	0x2000+72	Enthalpy injection valve control mode	0x10/0x06/0x03	1	0: None 1: Look-up table 2: Manual 3: Automatic	actual value	Decimal display
P75	8266	8265	0x2000+73	EVI valve initial opening (manual opening) heating	0x10/0x06/0x03	1P	40~480	actual value	Decimal display
P76	8267	8266	0x2000+74	EVI valve initial opening (manual opening) cooling	0x10/0x06/0x03	1P	40~480	actual value	Decimal display
P77	8268	8267	0x2000+75	Spray enthalpy valve superheat (heating)	0x10/0x06/0x03	0.1℃	-5~10℃	*0.1=actual value	Decimal display
P78	8269	8268	0x2000+76	Spray enthalpy valve superheat (cooling)	0x10/0x06/0x03	0.1℃	-5~10℃	*0.1=actual value	Decimal display
P79	8270	8269	0x2000+77	WiFi data upload cycle	0x10/0x06/0x03	1s		actual value	Decimal display
P80	8271	8270	0x2000+78	Calculate the minimum operating frequency of the compressor Coefficient	0x10/0x06/0x03	0.1	0-10(display value*0.1)	*0.1=actual value	Decimal display
P81	8272	8271	0x2000+79	E1/E2 function mode definition	0x10/0x06/0x03	1	0- Auxiliary electric heating 1 second heating source 2 combined with electric heater 3 combined with boiler	actual value	Decimal display
P82	8273	8272	0x2000+80	Second heat source starting temperature (ambient temperature ≤-15℃, heatpump stop)	0x10/0x06/0x03	0.1℃	-30~20℃	*0.1=actual value	Decimal display
P83	8274	8273	0x2000+81	Hot water circulation pump working mode (C3 P88=1)	0x10/0x06/0x03	1	0-No 1 timing 2 temperature difference 3 timing + temperature difference	actual value	Decimal display
P84	8275	8274	0x2000+82	Hot water circulating pump opening temperature difference (C3 P88=1, P83=2 or P83=3)	0x10/0x06/0x03	0.1℃	4~20℃	*0.1=actual value	Decimal display
P85	8276	8275	0x2000+83	Ambient temperature for defrosting	0x10/0x06/0x03	0.1℃	0℃~20℃	*0.1=actual value	Decimal display
P86	8277	8276	0x2000+84	Defrost environment and coil temperature difference ΔT1 (Ambient temperature ≥ -7℃)	0x10/0x06/0x03	0.1℃	0℃~20℃	*0.1=actual value	Decimal display
P87	8278	8277	0x2000+85	Restore factory settings (effective in shutdown state)	0x10/0x06/0x03	1	0: no recovery, 1: recovery	actual value	Decimal display
P88	8279	8278	0x2000+86	C3 water pump function selection	0x10/0x06/0x03	1	0: DHW auxiliary water pump 1: DHW return water pump	actual value	Decimal display
P89	8280	8279	0x2000+87	Return air superheat ratio coefficient	0x10/0x06/0x03	0.1	0~20(display value*0.1)	*0.1=actual value	Decimal display
P90	8281	8280	0x2000+88	Return air superheat differential coefficient	0x10/0x06/0x03	1	0~20(display value*1)	actual value	Decimal display

P91	8282	8281	0x2000+89	Defrost environment and coil temperature difference ΔT_2 (Ambient temperature < -7°C)	0x10/0x06/0x03	0.1°C	0°C~20°C	*0.1=actual value	Decimal display
P92	8283	8282	0x2000+90	Heating return air target superheat (Ambient Temperature \leq -5)	0x10/0x06/0x03	0.1°C	-5-10°C(display value*0.1)	*0.1=actual value	Decimal display
P93	8284	8283	0x2000+91	Heating return air target superheat degree ($5\geq$ Ambient Temperature $>$ 5)	0x10/0x06/0x03	0.1°C	-5-10°C(display value*0.1)	*0.1=actual value	Decimal display
P94	8285	8284	0x2000+92	Heating return air target superheat (Ambient Temperature $>$ 25)	0x10/0x06/0x03	0.1°C	-5-10°C(display value*0.1)	*0.1=actual value	Decimal display
P95	8286	8285	0x2000+93	Cooling return air target superheat	0x10/0x06/0x03	0.1°C	-5-10°C(display value*0.1)	*0.1=actual value	Decimal display
P96	8287	8286	0x2000+94	Heating return air target superheat degree (45 \geq ambient temperature > 25)	0x10/0x06/0x03	0.1°C	-5-10°C(display value*0.1)	*0.1=actual value	Decimal display
P97	8288	8287	0x2000+95	Parameter 96	0x10/0x06/0x03	1	10~100Hz	actual value	Decimal display
P98	8289	8288	0x2000+96	Inversion of the control signal for the G1 valve	0x10/0x06/0x03	--	0 normal 1 reversed	actual value	Decimal display
P99	8290	8289	0x2000+97	Inversion of the control signal for the G2 valve	0x10/0x06/0x03	--	0 normal 1 reversed	actual value	Decimal display
P100	8291	8290	0x2000+98	Inversion of the control signal for the G3 valve	0x10/0x06/0x03	--	0 normal 1 reversed	actual value	Decimal display
P101	8292	8291	0x2000+99	EEV steps for defrosting	0x10/0x06/0x03	1P	0~480	actual value	Decimal display
P102	8293	8292	0x2000+100	Temperature difference protection value of inlet and outlet water	0x10/0x06/0x03	0.1°C	8-20°C	*0.1=actual value	Decimal display
P103	8294	8293	0x2000+101	EEV initial opening hold time	0x10/0x06/0x03	1s	0-300s	actual value	Decimal display
P104	8295	8294	0x2000+102	Initial compressor frequency for AC heating/cooling capacity calculation	0x10/0x06/0x03	1Hz	20-60	actual value	Decimal display
P105	8195	8194	0x2000+2	Compressor frequency up A platform frequency	PLAT_A_FREQ	1Hz	20- 60hz	actual value	Decimal display
P106	8196	8195	0x2000+3	Compressor A platform delay time	PLAT_A_TIM	1s	0-300s	actual value	Decimal display
P107	8296	8295	0x2000+103	PRT calculation volume	0x10/0x06/0x03	-	1-100	actual value	Decimal display
P108	8297	8296	0x2000+104	R485 monitoring address	0x10/0x06/0x03	1	0-999	actual value	Decimal display
P109	8298	8297	0x2000+105	Discharge temp. value 1 to limit compressor frequency	0x10/0x06/0x03	1°C	80-125°C	actual value	Decimal display
P110	8299	8298	0x2000+106	Discharge temp. value 2 to limit compressor frequency	0x10/0x06/0x03	1°C	80-125°C	actual value	Decimal display
P111	8300	8299	0x2000+107	Discharge temp. value 3 to limit compressor frequency	0x10/0x06/0x03	1°C	80-125°C	actual value	Decimal display
P112	8301	8300	0x2000+108	EEV adjustment temp. when discharge temp. is too high	0x10/0x06/0x03	1°C	80-125°C	actual value	Decimal display
P113	8302	8301	0x2000+109	EEV adjustment time when discharge temp. is too high	0x10/0x06/0x03	1s	1-120s	actual value	Decimal display
P114	8303	8302	0x2000+110	Compressor frequency reduction percentage after set temp. reached.	0x10/0x06/0x03	1%	0- 60%	actual value	Decimal display
P115	8304	8303	0x2000+111	Outlet temp. too high protection value	0x10/0x06/0x03	1°C	70-90°C	actual value	Decimal display
									Decimal display
P116	8305	8304	0x2000+112	Electrical auxiliary heat calculation switch	0x10/0x06/0x03	1			Decimal display
P117	8306	8305	0x2000+113	E0 electric heating power	0x10/0x06/0x03	1			Decimal display
P118	8307	8306	0x2000+114	E1 electric heating power	0x10/0x06/0x03	1			Decimal display

P119	8308	8307	0x2000+115	E2 electric heating power	0x10/0x06/0x03	1		Decimal display
P120	8309	8308	0x2000+116	reserve	0x10/0x06/0x03	1		Decimal display
	8310	8309	0x2000+117	reserve	0x10/0x06/0x03	1		Decimal display
	8311	8310	0x2000+118	reserve	0x10/0x06/0x03	1		Decimal display
P121	8312	8311	0x2000+119	PV activation	0x10/0x06/0x03	1		Decimal display
P122	8313	8312	0x2000+120	floor drying program	0x10/0x06/0x03	1		Decimal display
P123	8314	8313	0x2000+121	1st period	0x10/0x06/0x03	1		Decimal display
P124	8315	8314	0x2000+122	1st period start temperature	0x10/0x06/0x03	1		Decimal display
P125	8316	8315	0x2000+123	1st period end temperature	0x10/0x06/0x03	1		Decimal display
P126	8317	8316	0x2000+124	2nd period	0x10/0x06/0x03	1		Decimal display
P127	8318	8317	0x2000+125	2nd period start temperature	0x10/0x06/0x03	1		Decimal display
P128	8319	8318	0x2000+126	2nd period end temperature	0x10/0x06/0x03	1		Decimal display
P129	8320	8319	0x2000+127	3rd period	0x10/0x06/0x03	1		Decimal display
P130	8321	8320	0x2000+128	3rd period start temperature	0x10/0x06/0x03	1		Decimal display
P131	8322	8321	0x2000+129	3rd period end temperature	0x10/0x06/0x03	1		Decimal display
P132	8323	8322	0x2000+130	4th period	0x10/0x06/0x03	1		Decimal display
P133	8324	8323	0x2000+131	4th period start temperature	0x10/0x06/0x03	1		Decimal display
P134	8325	8324	0x2000+132	4th period end temperature	0x10/0x06/0x03	1		Decimal display
P135	8326	8325	0x2000+133	AU heating limiting temperature	0x10/0x06/0x03	1		Decimal display
P136	8327	8326	0x2000+134	AU heating recovery temperature	0x10/0x06/0x03	1		Decimal display

Decimal +1	Decimal	0x1300	Definition of SG			
4865	4864	0x1300+0	PSG1	0x10/0x06/0x03	P201	0-OFF; Non 0-On
4866	4865	0x1300+1	PSG2	0x10/0x06/0x03	P202	0-disable, 10--70enable
4867	4866	0x1300+2	PSG3	0x10/0x06/0x03	P203	0-disable, 10--70enable
4868	4867	0x1300+3	PSG4	0x10/0x06/0x03	P204	0-disable, 30--10enable
4869	4868	0x1300+4	PSG5	0x10/0x06/0x03	P205	0-disable, 30--10enable
4870	4869	0x1300+5	PSG6	0x10/0x06/0x03	P206	0-disable, 10--70enable
4871	4870	0x1300+6	PSG7	0x10/0x06/0x03	P207	0-disable, 10--70enable
4872	4871	0x1300+7	PSG8	0x10/0x06/0x03	P208	0: Heat pump + electric auxiliary heating mode; 1: Only Electric Auxiliary Heat Mode; 2: Only Heat Pump Mode
4873	4872	0x1300+8				
4874	4873	0x1300+9				
4875	4874	0x1300+10				
		0x1400	energy storage			
5121	5120	0x1400+0		0		
5122	5121	0x1400+1		1		
5123	5122	0x1400+2		2		
5124	5123	0x1400+3		3		
5125	5124	0x1400+4		4		
5126	5125	0x1400+5		5		
5127	5126	0x1400+6		6		
5128	5127	0x1400+7		7		
5129	5128	0x1400+8		8		
5130	5129	0x1400+9		9		
5131	5130	0x1400+10		10		

5132	5131	0x1400+11	11	Hour	Produced energy	
5133	5132	0x1400+12	12			
5134	5133	0x1400+13	13			
5135	5134	0x1400+14	14			
5136	5135	0x1400+15	15			
5137	5136	0x1400+16	16			
5138	5137	0x1400+17	17			
5139	5138	0x1400+18	18			
5140	5139	0x1400+19	19			
5141	5140	0x1400+20	20			
5142	5141	0x1400+21	21			
5143	5142	0x1400+22	22			
5144	5143	0x1400+23	23			
5145	5144	0x1400+24	1			Daily
5146	5145	0x1400+25	2			
5147	5146	0x1400+26	3			
5148	5147	0x1400+27	4			
5149	5148	0x1400+28	5			
5150	5149	0x1400+29	6			
5151	5150	0x1400+30	7			
5152	5151	0x1400+31	8			
5153	5152	0x1400+32	9			
5154	5153	0x1400+33	10			
5155	5154	0x1400+34	11			
5156	5155	0x1400+35	12			
5157	5156	0x1400+36	13			
5158	5157	0x1400+37	14			
5159	5158	0x1400+38	15			
5160	5159	0x1400+39	16			
5161	5160	0x1400+40	17			
5162	5161	0x1400+41	18			
5163	5162	0x1400+42	19			
5164	5163	0x1400+43	20			
5165	5164	0x1400+44	21			
5166	5165	0x1400+45	22			
5167	5166	0x1400+46	23			
5168	5167	0x1400+47	24			
5169	5168	0x1400+48	25			
5170	5169	0x1400+49	26			
5171	5170	0x1400+50	27			
5172	5171	0x1400+51	28			
5173	5172	0x1400+52	29			
5174	5173	0x1400+53	30			
5175	5174	0x1400+54	31			
5176	5175	0x1400+55	1	Monthly		
5177	5176	0x1400+56	2			
5178	5177	0x1400+57	3			
5179	5178	0x1400+58	4			
5180	5179	0x1400+59	5			
5181	5180	0x1400+60	6			
5182	5181	0x1400+61	7			

5183	5182	0x1400+62	8		
5184	5183	0x1400+63	9		
5185	5184	0x1400+64	10		
5186	5185	0x1400+65	11		
5187	5186	0x1400+66	12		
5188	5187	0x1400+67	0	Hour	
5189	5188	0x1400+68	1		
5190	5189	0x1400+69	2		
5191	5190	0x1400+70	3		
5192	5191	0x1400+71	4		
5193	5192	0x1400+72	5		
5194	5193	0x1400+73	6		
5195	5194	0x1400+74	7		
5196	5195	0x1400+75	8		
5197	5196	0x1400+76	9		
5198	5197	0x1400+77	10		
5199	5198	0x1400+78	11		
5200	5199	0x1400+79	12		
5201	5200	0x1400+80	13		
5202	5201	0x1400+81	14		
5203	5202	0x1400+82	15		
5204	5203	0x1400+83	16		
5205	5204	0x1400+84	17		
5206	5205	0x1400+85	18		
5207	5206	0x1400+86	19		
5208	5207	0x1400+87	20		
5209	5208	0x1400+88	21		
5210	5209	0x1400+89	22		
5211	5210	0x1400+90	23		
5212	5211	0x1400+91	1	Daily	Produced renewable energy
5213	5212	0x1400+92	2		
5214	5213	0x1400+93	3		
5215	5214	0x1400+94	4		
5216	5215	0x1400+95	5		
5217	5216	0x1400+96	6		
5218	5217	0x1400+97	7		
5219	5218	0x1400+98	8		
5220	5219	0x1400+99	9		
5221	5220	0x1400+100	10		
5222	5221	0x1400+101	11		
5223	5222	0x1400+102	12		
5224	5223	0x1400+103	13		
5225	5224	0x1400+104	14		
5226	5225	0x1400+105	15		
5227	5226	0x1400+106	16		
5228	5227	0x1400+107	17		
5229	5228	0x1400+108	18		
5230	5229	0x1400+109	19		
5231	5230	0x1400+110	20		
5232	5231	0x1400+111	21		
5233	5232	0x1400+112	22		

5234	5233	0x1400+113	23		
5235	5234	0x1400+114	24		
5236	5235	0x1400+115	25		
5237	5236	0x1400+116	26		
5238	5237	0x1400+117	27		
5239	5238	0x1400+118	28		
5240	5239	0x1400+119	29		
5241	5240	0x1400+120	30		
5242	5241	0x1400+121	31		
5243	5242	0x1400+122	1	Monthly	
5244	5243	0x1400+123	2		
5245	5244	0x1400+124	3		
5246	5245	0x1400+125	4		
5247	5246	0x1400+126	5		
5248	5247	0x1400+127	6		
5249	5248	0x1400+128	7		
5250	5249	0x1400+129	8		
5251	5250	0x1400+130	9		
5252	5251	0x1400+131	10		
5253	5252	0x1400+132	11		
5254	5253	0x1400+133	12		
5255	5254	0x1400+134	0	Hour	
5256	5255	0x1400+135	1		
5257	5256	0x1400+136	2		
5258	5257	0x1400+137	3		
5259	5258	0x1400+138	4		
5260	5259	0x1400+139	5		
5261	5260	0x1400+140	6		
5262	5261	0x1400+141	7		
5263	5262	0x1400+142	8		
5264	5263	0x1400+143	9		
5265	5264	0x1400+144	10		
5266	5265	0x1400+145	11		
5267	5266	0x1400+146	12		
5268	5267	0x1400+147	13		
5269	5268	0x1400+148	14		
5270	5269	0x1400+149	15		
5271	5270	0x1400+150	16		
5272	5271	0x1400+151	17		
5273	5272	0x1400+152	18		
5274	5273	0x1400+153	19		
5275	5274	0x1400+154	20		
5276	5275	0x1400+155	21		
5277	5276	0x1400+156	22		
5278	5277	0x1400+157	23		
5279	5278	0x1400+158	1		
5280	5279	0x1400+159	2		
5281	5280	0x1400+160	3		
5282	5281	0x1400+161	4		
5283	5282	0x1400+162	5		
5284	5283	0x1400+163	6		

5355	5354	14EA				Green Pillar Year 5
5356	5355	14EB				Green Pillar Year 6
5357	5356	14EC				Green Pillar Year 7
5358	5357	14ED				Green Pillar Year 8
5359	5358	14EE				Green Pillar Year 9
5360	5359	14EF				Green Pillar Year 10
5361	5360	14F0				Black Pillar Year 1
5362	5361	14F1				Black Pillar Year 2
5363	5362	14F2				Black Pillar Year 3
5364	5363	14F3				Black Pillar Year 4
5365	5364	14F4				Black Pillar Year 5
5366	5365	14F5				Black Pillar Year 6
5367	5366	14F6				Black Pillar Year 7
5368	5367	14F7				Black Pillar Year 8
5369	5368	14F8				Black Pillar Year 9
5370	5369	14F9				Black Pillar Year 10

Requires Power-down Memory Selection

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Requires Power-down Memory Selection

Requires Power-down Memory Selection

Requires Power-down Memory Selection

Requires Power-down Memory Selection

Requires Power-down Memory Selection

Show Valid

Show Valid

Reserved For Testing

First Group

Second Group

Third Group

Fourth Group

Fifth Group

Password Is Required To Enter

