HYUNDAI

MODBUS REGISTRY

EN

HPMO-04-D2L1H3-A1B
HPMO-06-D2L1H3-A1B
HPMO-08-D2L1H3-A1B
HPMO-10-D2L1H3-A1B
HPMO-12-D2L3H9-A1B
HPMO-14-D2L3H9-A1B
HPMO-16-D2L3H9-A1B

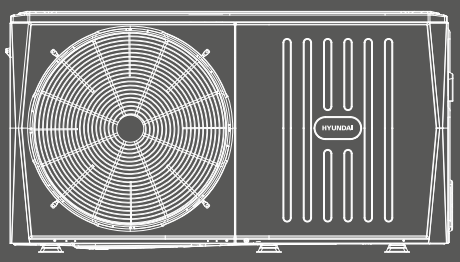
TEPELNÁ ČERPADLA

VZDUCH-VODA
MONOBLOK R290
4-16kW

GENUINE PRODUCT OF
HYUNDAI CORPORATION

UPOZORNĚNÍ:

Před instalací nebo servisem zařízení si pozorně přečtěte tento návod. Uschovejte jej pro pozdější použití.



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Modbus Mapping Table

1) MODBUS PORT COMMUNICATION SPECIFICATIONS

Port: RS-485; H1 and H2 are the Modbus communication ports.

Communication address: Only one-to-one connection is available for the host computer and wired controller, and the wired controller is a slave unit. The communication address of the host computer and wired controller is consistent with the address of 17.2 HMI Address for BMS (for servicemen).

Baud rate: 9600. Number of digits: 8 Verification: none

Stop bit: 1 bit

Communication protocol: Modbus RTU (Modbus ASCII not supported)

2)Mapping of registers in the wired controller

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

Register address	Description	Remarks	
0 (PLC:40001)	Power on or off	BIT15	Reserved
		BIT14	Reserved
		BIT13	Reserved
		BIT12	Reserved
		BIT11	Reserved
		BIT10	Reserved
		BIT9	Reserved
		BIT8	Reserved
		BIT7	Reserved
		BIT6	Reserved
		BIT5	Reserved
		BIT4	Reserved
		BIT3	0: power off Zone 2; 1: power on Zone 2; (water flow temperature control)
		BIT2	0: power off DHW; 1: power on DHW
		BIT1	0: power off Zone 1; 1: power on Zone 1; (water flow temperature control)
		BIT0	0: power off Zone 1/2; 1: power on Zone 1/2; (room temperature control)
1 (PLC: 40002)	Mode setting	1: Auto; 2: Cooling; 3: Heating;Others: Invalid	
2 (PLC: 40003)	Set water temperature T1S	Bit 8-Bit 15	Water temperature T1S2 corresponds to Zone 2.
		Bit 0-Bit 7	Water temperature T1S corresponds to Zone 1.
3 (PLC: 40004)	Set air temperature TS	The room temperature range is between 17°C and 30°C, and is valid when there is Ta. Protocol value = actual value * 2	
4 (PLC: 40005)	T5S	The water tank temperature range is between 20°C and 70°C.	
5 (PLC: 40006)	Function setting	BIT 15	Reserved
		BIT 14	Reserved
		BIT 13	1: valid climate curve setting; 0: invalid climate curve setting (Zone 2)
		BIT 12	1: valid climate curve setting; 0: invalid climate curve setting (Zone 1)
		BIT 11	Constant-temperature water recycling for DHW pump
		BIT 10	ECO mode
		BIT 9	Reserved
		BIT 8	Holiday home (only read)
		BIT 7	0: Silent mode level 1; 1: Silent mode level 2
		BIT 6	Silent mode
		BIT 5	Holiday away (only read)
		BIT 4	Disinfection
		BIT 3	Reserved
		BIT 2	Reserved
		BIT 1	Reserved
		BIT 0	Reserved
6 (PLC: 40007)	Curve selection	Bit 8-Bit 15	Climate curves 1-9 (Zone 2)
		Bit 0-Bit 7	Climate curves 1-9 (Zone 1)
7 (PLC: 40008)	Forced water heating	0: Invalid 1: Forced on 2: Forced off	TBH is the electric water tank heater. IBH1 and IBH2 are the hydraulic module's rear electric heaters. IBH1 and IBH2 can be activated together. TBH cannot be activated together with IBH1 or IBH2.
8 (PLC: 40009)	Forced TBH		
9 (PLC: 40010)	Forced IBH1		
10 (PLC: 40011)	t_SG_MAX	Maximum operation time at high electricity price for smart grid: t_SG_MAX: 0-24hrs	
11 (PLC: 40012)	T1S	Water temperature T1S corresponds to Zone 1. Range see below	
12 (PLC: 40013)	T1S2	Water temperature T1S2 corresponds to Zone 2.Range see below	

Instructions on setting leaving water temperature T1S range:
In cooling mode, the T1S low temp range is 5 to 25°C and the T1S high temp range is 18 to 25°C.
In heating mode, the T1S low temp range is 25 to 55°C and the T1S high temp range is 35 to 75°C.

When the wired controller is connected to the hydraulic module, the parameters of the whole unit can be checked:
The following address table can only use 03H function code (read register).

Whole unit parameter mapping addresses

1) Operating parameters			
Register address	Description	Remarks	
100 (PLC: 40101)	Operating frequency	Compressor operating frequency, Hz	
101 (PLC: 40102)	Operating mode	ODU actual operating mode, 2: cooling, 3:heating, 0: off	
102 (PLC: 40103)	Fan speed	Fan speed, r/min	
103 (PLC: 40104)	PMV openness	Openness of ODU EXV, P	
104 (PLC: 40105)	Inlet water temperature	TW_in, unit: °C	
105 (PLC: 40106)	Outlet water temperature	TW_out, °C	
106 (PLC: 40107)	T3 Temperature	Condenser temperature, °C	
107 (PLC: 40108)	T4 Temperature	Outdoor ambient temperature, °C	
108 (PLC: 40109)	Discharge temperature	Compressor discharge temperature Tp, °C	
109 (PLC: 40110)	Return air temperature	Compressor return air temperature, °C	
110 (PLC: 40111)	T1	Total outlet water temperature, °C	
111 (PLC: 40112)	T1B	System total outlet water temperature (behind the auxiliary heater), °C	
112 (PLC: 40113)	T2	Refrigerant liquid side temperature, °C	
113 (PLC: 40114)	T2B	Refrigerant gas side temperature, °C	
114 (PLC: 40115)	Ta	Room temperature, °C	
115 (PLC: 40116)	T5	Water tank temperature, °C	
116 (PLC: 40117)	Pressure 1	ODU high pressure value, kPa	
117 (PLC: 40118)	Pressure 2	ODU low pressure value, kPa	
118 (PLC: 40119)	ODU current	ODU operating current, A	
119 (PLC: 40120)	ODU voltage	ODU voltage, V	
120 (PLC: 40121)	Tbt1	Tbt1, °C	
121 (PLC: 40122)	Tbt2	Tbt2, °C	
122 (PLC: 40123)	Compressor operation time	Compressor operating time, hour	
123 (PLC: 40124)	Unit capacity	0702 for register 200 is reserved. When it is 071x, data 4- 30 means 4-30 kW	
124 (PLC: 40125)	Current fault	Check the code table for detailed fault codes	
125 (PLC: 40126)	Fault 1	Check the code table for detailed fault codes.	
126 (PLC: 40127)	Fault 2		
127 (PLC: 40128)	Fault 3		
128 (PLC: 40129)	Status bit 1	BIT15	Request for sending operating parameter, 1: request; 0: not request
		BIT14	Request for sending software version, 1: request; 0: not request
		BIT13	Request for sending SN code, 1: request; 0: not request
		BIT12	Reserved
		BIT11	EUV 1: free electricity; 0: judged by SG's signal
		BIT10	SG 0:normal electricity(when EUV is 0); 1: high price electricity
		BIT9	Anti-freezing operation for water tank
		BIT8	Solar energy signal input
		BIT7	Cooling mode set by room thermostat
		BIT6	Heating mode set by room thermostat
		BIT5	ODU test mode mark
		BIT4	Remote On/Off (1: d8)
		BIT3	Oil return
		BIT2	Anti-freezing
		BIT1	Defrosting
		BIT0	Reserved
129 (PLC: 40130)	Load output	BIT15	DEFROST
		BIT14	Auxiliary heat source
		BIT13	RUN
		BIT12	ALARM
		BIT11	Solar water pump
		BIT10	HEAT4
		BIT9	SV3

129 (PLC: 40130)	Load output	BIT8	Mixed water pump P_c
		BIT7	Water return P_d
		BIT6	External water pump P_o
		BIT5	SV2
		BIT4	SV1
		BIT3	Water pump PUMP_I
		BIT2	Electric heater TBH
		BIT1	Electric heater IBH2
		BIT0	Electric heater IBH1
130 (PLC: 40131)	Software version	1-99 is the software version of the hydronic module	
131 (PLC: 40132)	Wired controller version No.	1-99 is the wired controller's version number.	
132 (PLC: 40133)	Unit target frequency	Hz	
133 (PLC: 40134)	DC bus current	The actual value*10, unit: A	
134 (PLC: 40135)	DC bus voltage	Actual value/10, V	
135 (PLC: 40136)	TF module temperature	Feedback on ODU, °C	
136 (PLC: 40137)	Climate curve T1S calculated value 1	Calculated T1S of Zone 1	
137 (PLC: 40138)	Climate curve T1S calculated value 2	Calculated T1S of Zone 2	
138 (PLC: 40139)	Water flow	Actual value*100, m^3/H	
139 (PLC: 40140)	ODU current limit	Scheme value	
140 (PLC: 40141)	Capacity of hydraulic module	Actual value*100, kW	
141 (PLC: 40142)	Tsolar	Temperature of solar water heating panel	
142 (PLC: 40143)	Quantity of units in parallel	BIT1-BIT15	Respectively represent the online status of slaves units 1-15
		BIT0	Reserved
143 (PLC: 40144)	Higher bits for electricity consumption	Actual value*100	
144 (PLC: 40145)	Lower bits for electricity consumption	Actual value*100	
145 (PLC: 40146)	Higher bits for power output	Actual value*100	
146 (PLC: 40147)	Lower bits for power output	Actual value*100	
148 (PLC40149)	Real-time heating Capacity	Actual value*100	
149 (PLC40150)	Real-time renewable heating capacity	Actual value*100	
150 (PLC40151)	Real-time heating power consumption	Actual value*100	
151 (PLC40152)	Real-time heating COP	Actual value*100	
152 (PLC40153)	Higher bits for cumulative system heating energy	Actual value*100. System means cascade system	
153 (PLC40154)	Lower bits for cumulative system heating energy	Actual value*100. System means cascade system	
154 (PLC40155)	Higher bits for cumulative system renewable heating energy	Actual value*100. System means cascade system	
155 (PLC40156)	Lower bits for cumulative system renewable heating energy	Actual value*100. System means cascade system	
156 (PLC40157)	Higher bits for cumulative system power consumption	Actual value*100. System means cascade system	
157 (PLC40158)	Lower bits for cumulative system power consumption	Actual value*100. System means cascade system	
158 (PLC40159)	Higher bits for cumulative heating energy	Actual value*100	
159 (PLC40160)	Lower bits for cumulative heating energy	Actual value*100	
160 (PLC40161)	Higher bits for cumulative renewable heating energy	Actual value*100	
161 (PLC40162)	Lower bits for cumulative renewable heating energy	Actual value*100	
162 (PLC40163)	Higher bits for cumulative power consumption for heating	Actual value*100	
163 (PLC40164)	Lower bits for cumulative power consumption for heating	Actual value*100	
164 (PLC40165)	Cumulative heating efficiency ratio	Actual value*100	

165 (PLC40166)	Higher bits for cumulative cooling energy	Actual value*100
166 (PLC40167)	Lower bits for cumulative cooling energy	Actual value*100
167 (PLC40168)	Higher bits for cumulative renewable cooling energy	Actual value*100
168 (PLC40169)	Lower bits for cumulative renewable cooling energy	Actual value*100
169 (PLC40170)	Higher bits for cumulative power consumption for cooling	Actual value*100
170 (PLC40171)	Lower bits for cumulative power consumption for cooling	Actual value*100
171 (PLC40172)	Cumulative cooling efficiency ratio	Actual value*100
172 (PLC40173)	Higher bits for cumulative DHW heating energy	Actual value*100
173 (PLC40174)	Lower bits for cumulative DHW heating energy	Actual value*100
174 (PLC40175)	Higher bits for cumulative DHW heating renewable energy	Actual value*100
175 (PLC40176)	Lower bits for cumulative DHW heating renewable energy	Actual value*100
176 (PLC40177)	Higher bits for cumulative power consumption for DHW heating	Actual value*100
177 (PLC40178)	Lower bits for cumulative power consumption for DHW heating	Actual value*100
178 (PLC40179)	Cumulative DHW heating COP	Actual value*100
180 (PLC40181)	Real-time cooling capacity	Actual value*100
179 (PLC40180)	Real-time renewable cooling capacity	Actual value*100
181 (PLC40182)	Real-time cooling power consumption	Actual value*100
182 (PLC40183)	Real-time cooling EER	Actual value*100
183 (PLC40184)	Real-time DHW heating capacity	Actual value*100
184 (PLC40185)	Real-time renewable DHW heating capacity	Actual value*100
185 (PLC40186)	Real-time DHW heating power consumption	Actual value*100
186 (PLC40187)	Real-time DHW heating COP	Actual value*100
187(PLC40188)	MachineType	06:A-R290

Note :
1. When T1B is unavailable, "25" would be displayed in upper unit address 111.
2. When Ta is unavailable, "25" would be displayed in upper unit address 114.

The following register addresses 200-208 can only use 03H (read register) function code. Register address 209 and subsequent addresses can use 03H, 06H (write single register), and 10H (write multiple registers)

2) Parameter setting		
Register address	Description	Remarks
201 (PLC: 40202)	Upper limit of T1S for cooling	Lower 8 bits for Zone 1 and higher 8 bits for Zone 2
202 (PLC: 40203)	Lower limit of T1S for cooling	Lower 8 bits for Zone 1 and higher 8 bits for Zone 2
203 (PLC: 40204)	Upper limit of T1S for heating	Lower 8 bits for Zone 1 and higher 8 bits for Zone 2
204 (PLC: 40205)	Lower limit of T1S for heating	Lower 8 bits for Zone 1 and higher 8 bits for Zone 2
205 (PLC: 40206)	Upper limit for TS setting	Protocol value = actual value * 2
206 (PLC: 40207)	Lower limit for TS setting	Protocol value = actual value * 2
207 (PLC: 40208)	Upper limit for water heating	T5S upper limit
208 (PLC: 40209)	Lower limit for water heating	T5S lower limit
209 (PLC: 40210)	Pump running time	DHW PUMP water return duration. It is 5 minutes by default and can be adjusted between 5 and 120 min at an interval of 1 min.

210 (PLC: 40211)	Parameter setting 1	BIT15	Enable water heating
		BIT14	Supports water tank electric heater TBH (read-only)
		BIT13	Supports disinfection
		BIT12	DHW PUMP, 1: supported; 0: not supported
		BIT11	Reserved
		BIT10	DHW pump is valid in disinfection mode
		BIT9	Enable cooling
		BIT8	T1S cooling high/low temperature settings (read-only)
		BIT7	Enable heating
		BIT6	T1S heating high/low temperature settings (read-only)
		BIT5	PUMPI silent mode, 1; valid, 0: invalid
		BIT4	Supports room temperature sensor Ta
		BIT3	Supports room thermostat
		BIT2	Room thermostat mode setting
		BIT1	Dual Room Thermostat, 0: not supported;1: supported
		BIT0	0: room cooling/heating first, 1: water heating first
211 (PLC: 40212)	Parameter setting 2	BIT15	Reserved. A wrong address is reported when this register is queried
		BIT14	M1M2 is used for AHS control, 1: Yes; 0: No
		BIT13	RT_Ta_PCNEn (enable Temperature Collection Kit), 1: Yes 0: No
		BIT12	Tbt2 sensor is valid 1: Yes 0: No
		BIT11	Piping length selection, 1: >10 m; 0: <10 m
		BIT10	Solar energy input port: 1: SL1L2; 0: CN11
		BIT9	Solar energy kit enable, see address 273
		BIT8	Define the port, 0=remote ON/OFF; 1=DHW heater
		BIT7	Smart grid, 0=NON; 1=YES
		BIT6	T1B sensor enabled 0: No; 1: Yes
		BIT5	Setting the high/low temperature of cooling mode T1S
		BIT4	Setting the high/low temperature of heating mode T1S
		BIT3	Double- zone setting is valid
		BIT2	Ta sensor position, 1: IDU; 0: HMI
		BIT1	Tbt sensor enabled,1: Yes; 0: No
		BIT0	IBH/AHS installation position, 1: buffer tank; 0: pipe
212 (PLC: 40213)	dT5_On	Default setting: 10°C, range: 1-30°C;	
213 (PLC: 40214)	dT1S5	Default setting: 10°C, range: 5-40°C, set interval: 1°C	
215 (PLC: 40216)	T4DHWmax	Default setting: 46°C, range: 35~46°C, setting interval: 1°C	
216 (PLC: 40217)	T4DHWmin	Default: -10°C, range: -25-30°C;	
217 (PLC: 40218)	t_TBH_delay	Default setting: 30 min, range: 0-240 min, set interval: 5 min	

2) Parameter setting		
218 (PLC: 40219)	dT5S_TBH_off	Default setting: 5°C, range: 0-10°C, set interval: 1°C
219 (PLC: 40220)	T4_TBH_on	Default setting: 5°C, range: -5-50°C;
220 (PLC: 40221)	T5s_DI	Temperature for disinfection operation, range: 60-70 ° C, default setting: 65°C
221 (PLC: 40222)	t_DI_max	Maximum disinfection duration, range: 90-300 min, default setting: 210 min
222 (PLC: 40223)	t_DI_hightemp	High-temperature disinfection duration, range: 5-60 min, default setting: 15 min
224 (PLC: 40225)	dT1SC	Default setting: 5°C, range: 2-10°C, set interval: 1°C
225 (PLC: 40226)	dTSC	Default setting: 2°C, range: 1-10°C, set interval: 1°C
226 (PLC: 40227)	T4cmax	Default setting: 52°C, range: 35~52°C, setting interval: 1°C
227 (PLC: 40228)	T4cmin	Default setting: 10°C, range: -5-25°C, set interval: 1°C
229 (PLC: 40230)	dT1SH	Default setting: 5°C, range: 2-20°C;
230 (PLC: 40231)	dTSH	Default setting: 2°C, range: 1-10°C, set interval: 1°C
231 (PLC: 40232)	T4hmax	Default setting: 25°C, range: 20-35°C, set interval: 1°C
232 (PLC: 40233)	T4hmin	Default setting: -15°C, range: -25-30°C, set interval: 1°C
233 (PLC: 40234)	T4_IBH_on	Ambient temperature for enabling the auxiliary electric heating IBH of the hydraulic module, range: -15-30°C; default setting: -5°C
234 (PLC: 40235)	dT1_IBH_on	Temperature return difference for enabling the hydraulic module auxiliary electric heating IBH, range: 2~10°C; default setting: 5°C
235 (PLC: 40236)	t_IBH_delay	Delay time of enabling the hydraulic module auxiliary electric heating IBH, range: 15~120min; default setting: 30min
237 (PLC:40238)	T4_AHS_on	The trigger ambient temperature for turning on external heating source AHS, range: -15~30°C; default setting: 5°C

238 (PLC:40239)	dT1_AHS_on	Temperature return difference for enabling the external heating source AHS; range: 2~20°C; default setting: 5°C
240 (PLC: 40241)	t_AHS_delay	Delay time for enabling the external heating source AHS, range: 5~120 min; default setting: 30 min
241 (PLC: 40242)	t_DHWHP_max	Max. duration of water heating by the heat pump, range: 10-600 min, default setting: 90 min;
242 (PLC: 40243)	t_DHWHP_restrict	Duration of limited water heating by the heat pump, range: 10-600 min, default setting: 30 min;
243 (PLC: 40244)	T4autocmin	Default setting: 25°C, range: 20-29°C, set interval: 1°C
244 (PLC: 40245)	T4autohmax	Default setting: 17°C, range: 10-17°C, set interval: 1°C
245 (PLC: 40246)	T1S_H.A_H	In the holiday mode, setting of T1 in heating mode, range: 20~25°C, default setting: 25°C
246 (PLC: 40247)	T5S_H.A_DHW	In the holiday mode, setting of T5 in DHW mode, range: 20~25°C, default setting: 25°C
250 (P LC: 40251)	IBH1 power	Range: 0-200, default setting: 0, unit: 100 W
251 (PLC: 40252)	IBH2 power	Range: 0-200, default setting: 0, unit: 100 W
252 (P LC: 40253)	TBH power	Range: 0-200, default setting: 2,unit: 100 W
255 (PLC: 40256)	t_DRYUP	Number of days with temperature rise, range: 4-15 days, default setting: 8 days
256 (PLC: 40257)	t_HIGHPEAK	Number of drying days, range: 3-7 days, default setting: 5 days
257 (PLC: 40258)	t_DRYDOWN	Number of days with temperature drop, range: 4-15 days, default setting: 5 days
258 (PLC: 40259)	t_DRYPEAK	Max. drying temperature, range: 30-55°C, default setting: 45°C
259 (PLC: 40260)	t_ ARSTH	Initial floor heating duration, range: 48-96 hrs, default setting: 72hrs
260 (PLC: 40261)	T1S (initial floor heating)	Initial floor heating T1S, range: 25-35 ° C, default setting: 25°C
261 (PLC: 40262)	T1SetC1	Parameter of the ninth temperature curve for cooling mode, range: 5-25°C, default setting: 10°C
262 (PLC: 40263)	T1SetC2	Parameter of the ninth temperature curve for cooling mode, range: 5-25°C, default setting: 16°C
263 (PLC: 40264)	T4C1	Parameter of the ninth temperature curve for cooling mode, range: (-5)-46°C, default setting: 35°C
264 (PLC: 40265)	T4C2	Parameter of the ninth temperature curve for cooling mode, range: (-5)-46°C, default setting: 25°C
265 (PLC: 40266)	T1SetH1	Parameter of the ninth temperature curve for heating mode, range: 25-75°C, default setting: 35°C
266 (PLC: 40267)	T1SetH2	Parameter of the ninth temperature curve for heating mode, range: 25-75°C, default setting: 28°C
267 (PLC: 40268)	T4H1	Parameter of the ninth temperature curve for heating mode, range: (-25)-30°C, default setting: -5°C
268 (PLC: 40269)	T4H2	Parameter of the ninth temperature curve for heating mode, range: (-25)-30°C, default setting: 7°C
269 (PLC: 40270)	Power input limitation	The type of power input limitation, 1~8=type 1~8, default: 1
270 (P LC: 40271)	HB: t_T4_FRESH_C	Range: 0.5-6 hrs, set interval: 0.5 hr, sent value=actual value*2
	LB: t_T4_FRESH_H	Range: 0.5-6 hrs, set interval: 0.5 hr, sent value=actual value*2
271 (PLC: 40272)	T_PUMPI_DELAY	Range: 0.5-20 hrs, set interval: 0.5 hr, sent value=actual value*2
272 (PLC: 40273)	EMISSION TYPE	Bit 12-15: type of Zone 2 terminal for cooling mode
		Bit 8-11: type of Zone 1 terminal for cooling mode
		Bit 4-7: type of Zone 2 terminal for heating mode
		Bit 0-3: type of Zone 1 terminal for heating mode
273	Bit8-15	DELTATSOL, temperature return difference for enabling Solar function, sending value=actual value, range: 5 ~20°C, default setting: 10°C
	Bit0-7	Solar function, 0=NoN,1=solar+heat pump,2= only solar,other: NoN
274	Ahs_PDC	Bit0, EnSwitchPDC, 1=Enable; 0=Disable
275	GAS-COST	Gas price, sending value=actual value *100, unit: price/m3, range: 0~5, default setting: 0.85
276	ELE-COST	Electricity price, sending value=actual value *100, unit: price/kWh, range: 0~5, default setting: 0.2
277	SETHEATER	High Byte: SETHEATER_Max, sending value=actual value, range: 0~80°C, default setting: 80°C
		Low Byte: SETHEATER_Min, sending value=actual value, range: 0~80°C, default setting: 30°C

278	SIGHEATER	High Byte: SIGHEATER_Max, sending value=actual value, range: 0~10V, default setting: 10V
		Low Byte: SIGHEATER_Min, sending value=actual value, range: 0~10V, default setting: 3V
279	t2_Anti_SVRun	The valve anti-lock running time, range: 0-120s, default setting: 30s

Slave units parameters (Read register)

Register address	Description	Remarks
1000	Operation mode	Actual operation mode of the unit. 2 = cooling, 3 = heating, 0 = OFF
1001	Operation frequency	Compressor frequency, in Hz. Sent value = actual value
1002	Inlet water temperature	TW_in, in °C. Sent value = actual value
1003	Outlet water temperature	TW_out, in °C. Sent value = actual value
1004	Solar Temperature sensor temperature	Tsolar, in °C. Sent value = actual value
1005	Current fault of slave unit	Check the code table for detailed fault codes
1007	IDU status 1	Bit2: Oil return
		Bit1: Anti-freeze
		Bit0: defrost
1008	IDU status 2	Bit4: T1 enabled. 1 = Yes, 2 = No
		Bit3: IBH enabled. 1 = Yes, 2 = No
		Bit2: DHW in operation
		Bit1: heating in operation
		Bit0: cooling in operation
1009	IDU load	Bit7: heater 4 - crankcase heater
		Bit5: defrost
		Bit4: run
		Bit3: PUMP_i
		Bit1: IBH2
		Bit0: IBH1
1011	T1	Outlet water temperature (after IBH), in °C. Sent value = actual value, invalid value = 0x7F
1012	T1B(Tw2)	Outlet water temperature (after AHS), in °C. Sent value = actual value, invalid value = 0x7F
1013	T2	Refrigerant liquid temperature, in °C. Sent value = actual value, invalid value = 0x7F
1014	T2B	Refrigerant gas temperature, in °C. Sent value = actual value, invalid value = 0x7F
1015	T5	DHW temperature, invalid value = 0x7F
1016	Ta	Room temperature, in °C. Sent value = actual value, invalid value = 0x7F
1017	Tbt1	Balance tank top temperature, in °C. Sent value = actual value,
1018	Tbt2	Balance tank bottom temperature, in °C. Sent value = actual value,
1019	Flow rate	Actual value*100, in M3/H
1020	Unit model	E.g. 12-16 means the unit model is 12-16KW
1021	Unit target frequency	
1022	Unit version	1-99 indicate the unit version, i.e., hydraulic module version
1023	Higher bits of heat energy	Sending value=actual value *100
1024	Lower bits of heat energy	Sending value=actual value *100
1025	Capacity of hydraulic module	Actual value *100, in Kw
1026	Fan speed	Fan speed, in r/min. Sent value = actual value expansion valve opening, in P.
1027	PMV opening	Sent value = actual value
1028	T3 temperature	Fin heat exchanger temperature, in °C. Sent value = actual value, invalid value = 0x7F
1029	T4 temperature	Outdoor ambient temperature, in °C. Sent value = actual value, invalid value = 0x7F
1030	Discharge temperature	Discharge temperature of compressor Tp, in °C. Sent value = actual value, invalid value = 0x7F
1031	Suction temperature	Suction temperature of compressor Tp, in °C. Sent value = actual value, invalid value = 0x7F
1032	TF module temperature	In °C. Invalid value = 0x7F
1033	Pressure value 1	High pressure of refrigerant loop, in kPA. Sent value = actual value
1034	Pressure value 2	Low pressure of refrigerant loop, in kPA. Sent value = actual value
1035	DC bus current	In A
1036	DC bus voltage	In V. Returned value = actual value
1037	ODU current	ODU operation current, in A. Sent value = actual value
1038	ODU voltage	ODU operation voltage, in V. Sent value = actual value
1039	ODU frequency limitation target value	Return value = actual value

1040	Higher bits of power consumption	Sending value = actual value*100
1041	Lower bits of power consumption	Sending value = actual value*100
1042	Software version of ODU	

Note:
1) The table above shows the mapped addresses of slave unit 1.
2) The mapped address of slave unit X(2-15) = The mapped address of slave unit 1 + (X-1)*200. E.g. The mapped address of slave unit 4 is 1600-1642.

HYUNDAI

GENUINE PRODUCT OF
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