DUNEXT

PowerHill (261kWh)

Modbus Interface Definitions

Issue 01

Date 2026-05-18

Change History

Issue	Date	Change Description
01	2026-05-18	Initial release

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1. Assignment Table

This protocol applies to the communication between Dunext EMS master station and third-party EMS.

The communication interface is RJ45, using the Modbus TCP protocol. By default, the third-party EMS acts as the client, and the EMS master station acts as the server.

The third-party EMS should be connected to the WAN2 port of EMS master station. The default IP address of the EMS master station's WAN2 port is 192.168.30.101 (configurable), and the port number is 502.

RW-type signals support function codes 0x03, 0x06, and 0x10. RO-type signals support function codes 0x04 and 0x02.

Data transmission uses big-endian byte order. For example, to transmit 0x12345678, the transmission sequence is: 0x12, then 0x34, followed by 0x56, and finally 0x78.

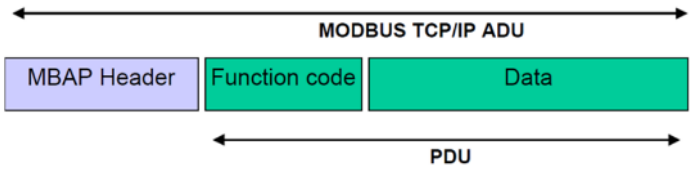
Devices are distinguished by logical addresses in the MODBUS-TCP data frame. The address assignment rules are as follows:

Table 1-1 Address Assignment Rules

Device Name	Address Code	Remarks
EMS	1	Only one address
PCS	2	Only one address
Battery Master BMS	34	Only one address
Battery Cell	98	Only one address
Liquid Cooling Unit	170	Only one address
Others	172	Register address offset by 500

The frame structure is shown as the figure below:

Figure 1-1 Frame Structure



MBAP consists of 7 bytes, with the structure as follows:

Table 1-2 MBAP Structure

MBAP			
No.	**Name**	**Byte Length**	**Explanation**
1	Transaction Identifier	2	Functions as a sequence number; incremented after each transmission
2	Protocol Identifier	2	00 00 indicates Modbus TCP protocol
3	Length	2	Length of the remaining message (in bytes)
4	Unit Identifier	1	Represents the device address

Example Data Frame:

To read the value of the "Set Active Power" register from the EMS device:

According to the table, the EMS device address is 1. The decimal register address is 40009, which is 0x9C49 in hexadecimal. To read 2 bytes, the data frame is: 00 D3 00 00 06 01 03 9C 49 00 02.

Table 1-3 Data Frame

MBAP				**Function Code**	**Data**	
Transaction Identifier	**Protocol Identifier**	**Length**	**Unit Identifier**	**Function Code**	**Register Start Address**	**Register Number**
00 D3	00 00	00 06	01	03	9C 49	00 02

2. EMS Register Definitions

Address code: 1

Table 2-1 EMS Register Definitions

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
2	10001	PCS-meter malfunction	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10002	Dynamic environment protection	RO	BOOL	1	Alarm	0:Unprotected ; 1:Protected;
2	10003	Main fire system	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10004	External fire system	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10005	Local fire system	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10006	Custom Shutdown 4	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10007	Custom Shutdown 5	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10008	Custom critical alarm 1	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10009	Custom critical alarm 2	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10010	Custom critical alarm 3	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10011	Custom critical alarm 4	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10012	Custom critical alarm 5	RO	BOOL	1	Alarm	0:Normal; 1:Abnormal;
2	10013	DI trigger hold signal	RO	BOOL	1	Alarm	
2	10014	DOD protection	RO	BOOL	1	Alarm	0:Unprotected ; 1:Protected;
4	30001	Online	RO	I32	1	Real data	0:Offline; 1:Online;
4	30003	System operating status	RO	I32	1	Real data	0:Normal; 1:Abnormal;
4	30005	Total active	RO	I32	0.1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		power(kW)				data	
4	30007	Total reactive power(kVar)	RO	I32	0.1	Real data	
4	30009	Maximum demand(kW)	RO	I32	1	Real data	
4	30011	Rated power(kW)	RO	I32	1	Real data	
4	30013	Rated capacity(kWh)	RO	I32	1	Real data	
4	30015	Charge forbidden protection	RO	I32	1	Real data	0:Unprotected ; 1:Protected;
4	30017	Discharge forbidden protection	RO	I32	1	Real data	0:Unprotected ; 1:Protected;
4	30019	System operation status word	RO	I32	1	Real data	
4	30021	Total positive energy(kWh)	RO	F32	1	Real data	
4	30023	Total negative energy(kWh)	RO	F32	1	Real data	
4	30025	Power reduction percentage(%)	RO	I32	1	Real data	
4	30027	G100 Lock State	RO	I32	1	Real data	0:Normal; 1:Locked; 2:ADLock;
4	30029	G100 Abnormal State	RO	I32	1	Real data	0:Normal; 1:Backflow; 2:Overload;
4	30031	G100 reset count last 30 days	RO	I32	1	Real data	
4	30033	G100 fault count last 10 minutes	RO	I32	1	Real data	
4	30035	G100 daily abnormal count	RO	I32	1	Real data	
3	40001	Set working mode	RW	I32	1	Real data	0:Manual; 1:Strategy;
3	40003	Set strategy mode	RW	I32	1	Real data	0:Peak load shift; 1:Transformer capacity expansion; 3:Photovoltaic

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
							absorption; 4:Emergency backup power;
3	40005	Power on/off	RW	I32	1	Real data	0:Off; 1:On;
3	40007	Set on/off-grid mode	RW	I32	1	Real data	0:Off-grid; 1:On-grid;
3	40009	Set active power(kW)	RW	I32	0.1	Real data	
3	40011	Set reactive power(kVar)	RW	I32	0.1	Real data	
3	40013	Starting hour of the 1 strategy	RW	I32	1	Real data	
3	40015	Starting minute of the 1 strategy	RW	I32	1	Real data	
3	40017	Ending hour of the 1 strategy	RW	I32	1	Real data	
3	40019	Ending minute of the 1 strategy	RW	I32	1	Real data	
3	40021	Executed power of the 1 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40023	en No:1 protect reverse	RW	I32	1	Real data	
3	40025	Starting hour of the 2 strategy	RW	I32	1	Real data	
3	40027	Starting minute of the 2 strategy	RW	I32	1	Real data	
3	40029	Ending hour of the 2 strategy	RW	I32	1	Real data	
3	40031	Ending minute of the 2 strategy	RW	I32	1	Real data	
3	40033	Executed power of the 2 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40035	en No:2 protect reverse	RW	I32	1	Real data	
3	40037	Starting hour of the 3 strategy	RW	I32	1	Real data	
3	40039	Starting minute	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		of the 3 strategy				data	
3	40041	Ending hour of the 3 strategy	RW	I32	1	Real data	
3	40043	Ending minute of the 3 strategy	RW	I32	1	Real data	
3	40045	Executed power of the 3 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40047	en No:3 protect reverse	RW	I32	1	Real data	
3	40049	Starting hour of the 4 strategy	RW	I32	1	Real data	
3	40051	Starting minute of the 4 strategy	RW	I32	1	Real data	
3	40053	Ending hour of the 4 strategy	RW	I32	1	Real data	
3	40055	Ending minute of the 4 strategy	RW	I32	1	Real data	
3	40057	Executed power of the 4 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40059	en No:4 protect reverse	RW	I32	1	Real data	
3	40061	Starting hour of the 5 strategy	RW	I32	1	Real data	
3	40063	Starting minute of the 5 strategy	RW	I32	1	Real data	
3	40065	Ending hour of the 5 strategy	RW	I32	1	Real data	
3	40067	Ending minute of the 5 strategy	RW	I32	1	Real data	
3	40069	Executed power of the 5 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40071	en No:5 protect reverse	RW	I32	1	Real data	
3	40073	Starting hour of the 6 strategy	RW	I32	1	Real data	
3	40075	Starting minute	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		of the 6 strategy				data	
3	40077	Ending hour of the 6 strategy	RW	I32	1	Real data	
3	40079	Ending minute of the 6 strategy	RW	I32	1	Real data	
3	40081	Executed power of the 6 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40083	en No:6 protect reverse	RW	I32	1	Real data	
3	40085	Starting hour of the 7 strategy	RW	I32	1	Real data	
3	40087	Starting minute of the 7 strategy	RW	I32	1	Real data	
3	40089	Ending hour of the 7 strategy	RW	I32	1	Real data	
3	40091	Ending minute of the 7 strategy	RW	I32	1	Real data	
3	40093	Executed power of the 7 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40095	en No:7 protect reverse	RW	I32	1	Real data	
3	40097	Starting hour of the 8 strategy	RW	I32	1	Real data	
3	40099	Starting minute of the 8 strategy	RW	I32	1	Real data	
3	40101	Ending hour of the 8 strategy	RW	I32	1	Real data	
3	40103	Ending minute of the 8 strategy	RW	I32	1	Real data	
3	40105	Executed power of the 8 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40107	en No:8 protect reverse	RW	I32	1	Real data	
3	40109	Starting hour of the 9 strategy	RW	I32	1	Real data	
3	40111	Starting minute	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		of the 9 strategy				data	
3	40113	Ending hour of the 9 strategy	RW	I32	1	Real data	
3	40115	Ending minute of the 9 strategy	RW	I32	1	Real data	
3	40117	Executed power of the 9 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40119	en No:9 protect reverse	RW	I32	1	Real data	
3	40121	Starting hour of the 10 strategy	RW	I32	1	Real data	
3	40123	Starting minute of the 10 strategy	RW	I32	1	Real data	
3	40125	Ending hour of the 10 strategy	RW	I32	1	Real data	
3	40127	Ending minute of the 10 strategy	RW	I32	1	Real data	
3	40129	Executed power of the 10 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40131	en No:10 protect reverse	RW	I32	1	Real data	
3	40133	Starting hour of the 11 strategy	RW	I32	1	Real data	
3	40135	Starting minute of the 11 strategy	RW	I32	1	Real data	
3	40137	Ending hour of the 11 strategy	RW	I32	1	Real data	
3	40139	Ending minute of the 11 strategy	RW	I32	1	Real data	
3	40141	Executed power of the 11 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40143	en No:11 protect reverse	RW	I32	1	Real data	
3	40145	Starting hour of the 12 strategy	RW	I32	1	Real data	
3	40147	Starting minute	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		of the 12 strategy				data	
3	40149	Ending hour of the 12 strategy	RW	I32	1	Real data	
3	40151	Ending minute of the 12 strategy	RW	I32	1	Real data	
3	40153	Executed power of the 12 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40155	en No:12 protect reverse	RW	I32	1	Real data	
3	40157	Starting hour of the 13 strategy	RW	I32	1	Real data	
3	40159	Starting minute of the 13 strategy	RW	I32	1	Real data	
3	40161	Ending hour of the 13 strategy	RW	I32	1	Real data	
3	40163	Ending minute of the 13 strategy	RW	I32	1	Real data	
3	40165	Executed power of the 13 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40167	en No:13 protect reverse	RW	I32	1	Real data	
3	40169	Starting hour of the 14 strategy	RW	I32	1	Real data	
3	40171	Starting minute of the 14 strategy	RW	I32	1	Real data	
3	40173	Ending hour of the 14 strategy	RW	I32	1	Real data	
3	40175	Ending minute of the 14 strategy	RW	I32	1	Real data	
3	40177	Executed power of the 14 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40179	en No:14 protect reverse	RW	I32	1	Real data	
3	40181	Starting hour of the 15 strategy	RW	I32	1	Real data	
3	40183	Starting minute	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		of the 15 strategy				data	
3	40185	Ending hour of the 15 strategy	RW	I32	1	Real data	
3	40187	Ending minute of the 15 strategy	RW	I32	1	Real data	
3	40189	Executed power of the 15 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40191	en No:15 protect reverse	RW	I32	1	Real data	
3	40193	Starting hour of the 16 strategy	RW	I32	1	Real data	
3	40195	Starting minute of the 16 strategy	RW	I32	1	Real data	
3	40197	Ending hour of the 16 strategy	RW	I32	1	Real data	
3	40199	Ending minute of the 16 strategy	RW	I32	1	Real data	
3	40201	Executed power of the 16 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40203	en No:16 protect reverse	RW	I32	1	Real data	
3	40205	Starting hour of the 17 strategy	RW	I32	1	Real data	
3	40207	Starting minute of the 17 strategy	RW	I32	1	Real data	
3	40209	Ending hour of the 17 strategy	RW	I32	1	Real data	
3	40211	Ending minute of the 17 strategy	RW	I32	1	Real data	
3	40213	Executed power of the 17 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40215	en No:17 protect reverse	RW	I32	1	Real data	
3	40217	Starting hour of the 18 strategy	RW	I32	1	Real data	
3	40219	Starting minute	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		of the 18 strategy				data	
3	40221	Ending hour of the 18 strategy	RW	I32	1	Real data	
3	40223	Ending minute of the 18 strategy	RW	I32	1	Real data	
3	40225	Executed power of the 18 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40227	en No:18 protect reverse	RW	I32	1	Real data	
3	40229	Starting hour of the 19 strategy	RW	I32	1	Real data	
3	40231	Starting minute of the 19 strategy	RW	I32	1	Real data	
3	40233	Ending hour of the 19 strategy	RW	I32	1	Real data	
3	40235	Ending minute of the 19 strategy	RW	I32	1	Real data	
3	40237	Executed power of the 19 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40239	en No:19 protect reverse	RW	I32	1	Real data	
3	40241	Starting hour of the 20 strategy	RW	I32	1	Real data	
3	40243	Starting minute of the 20 strategy	RW	I32	1	Real data	
3	40245	Ending hour of the 20 strategy	RW	I32	1	Real data	
3	40247	Ending minute of the 20 strategy	RW	I32	1	Real data	
3	40249	Executed power of the 20 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40251	en No:20 protect reverse	RW	I32	1	Real data	
3	40253	Starting hour of the 21 strategy	RW	I32	1	Real data	
3	40255	Starting minute	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		of the 21 strategy				data	
3	40257	Ending hour of the 21 strategy	RW	I32	1	Real data	
3	40259	Ending minute of the 21 strategy	RW	I32	1	Real data	
3	40261	Executed power of the 21 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40263	en No:21 protect reverse	RW	I32	1	Real data	
3	40265	Starting hour of the 22 strategy	RW	I32	1	Real data	
3	40267	Starting minute of the 22 strategy	RW	I32	1	Real data	
3	40269	Ending hour of the 22 strategy	RW	I32	1	Real data	
3	40271	Ending minute of the 22 strategy	RW	I32	1	Real data	
3	40273	Executed power of the 22 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40275	en No:22 protect reverse	RW	I32	1	Real data	
3	40277	Starting hour of the 23 strategy	RW	I32	1	Real data	
3	40279	Starting minute of the 23 strategy	RW	I32	1	Real data	
3	40281	Ending hour of the 23 strategy	RW	I32	1	Real data	
3	40283	Ending minute of the 23 strategy	RW	I32	1	Real data	
3	40285	Executed power of the 23 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40287	en No:23 protect reverse	RW	I32	1	Real data	
3	40289	Starting hour of the 24 strategy	RW	I32	1	Real data	
3	40291	Starting minute	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		of the 24 strategy				data	
3	40293	Ending hour of the 24 strategy	RW	I32	1	Real data	
3	40295	Ending minute of the 24 strategy	RW	I32	1	Real data	
3	40297	Executed power of the 24 strategy (-charging +discharging)	RW	I32	1	Real data	
3	40299	en No:24 protect reverse	RW	I32	1	Real data	
3	40301	January demand control threshold(kW)	RW	I32	1	Real data	
3	40303	February demand control threshold(kW)	RW	I32	1	Real data	
3	40305	March demand control threshold(kW)	RW	I32	1	Real data	
3	40307	April demand control threshold(kW)	RW	I32	1	Real data	
3	40309	May demand control threshold(kW)	RW	I32	1	Real data	
3	40311	June demand control threshold(kW)	RW	I32	1	Real data	
3	40313	July demand control threshold(kW)	RW	I32	1	Real data	
3	40315	August demand control threshold(kW)	RW	I32	1	Real data	
3	40317	September demand control threshold(kW)	RW	I32	1	Real data	
3	40319	October demand control threshold(kW)	RW	I32	1	Real data	
3	40321	November	RW	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		demand control threshold(kW)				data	
3	40323	December demand control threshold(kW)	RW	I32	1	Real data	
3	40325	Demand charge start hour	RW	I32	1	Real data	
3	40327	Demand charge start minute	RW	I32	1	Real data	
3	40329	Demand charge end hour	RW	I32	1	Real data	
3	40331	Demand charge end minute	RW	I32	1	Real data	
3	40333	Charge Start Power (kW)	RW	I32	1	Real data	
3	40335	Discharge Start Power (kW)	RW	I32	1	Real data	
3	40337	Enable load tracking	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40339	Enable anti-backflow protection	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40341	Demand control	RW	I32	1	Real data	0:Disabled; 1:Transformer demand; 2:Maximum demand;
3	40343	Transformer capacity(kVA)	RW	I32	1	Real data	
3	40345	Demand control factor(%)	RW	I32	1	Real data	
3	40347	Load tracking factor(%)	RW	I32	1	Real data	
3	40349	Multi site allocation factor(%)	RW	I32	1	Real data	
3	40351	Maximum charging SOC(%)	RW	F32	1	Real data	
3	40353	Minimum discharge SOC(%)	RW	F32	1	Real data	
3	40355	Anti-backflow margin(kW)	RW	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
3	40357	Adjustment interval(s)	RW	I32	1	Real data	
3	40359	Temperature threshold(℃)	RW	I32	1	Real data	
3	40361	Enable load tracking limit	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40363	Enable DOD protection	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40365	PCS auto-shutdown	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40367	PCS auto-shutdown time(s)	RW	I32	1	Real data	
3	40369	TEMP to trigger PACK fire system(℃)	RW	I32	1	Real data	
3	40371	Sampling interval of battery cells during work(s)	RW	I32	1	Real data	
3	40373	Sampling interval of battery cells in idle(s)	RW	I32	1	Real data	
3	40375	Enable liquid cooling MGT	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40377	Heating start-up temperature(℃)	RW	I32	1	Real data	
3	40379	Heating stop temperature(℃)	RW	I32	1	Real data	
3	40381	Cooling start-up temperature(℃)	RW	I32	1	Real data	
3	40383	Cooling stop temperature(℃)	RW	I32	1	Real data	
3	40385	AC early start time(min)	RW	I32	1	Real data	
3	40387	Anti-backflow sliding window(s)	RW	I32	1	Real data	
3	40389	Rated power of PV(kW)	RW	I32	1	Real data	
3	40391	Demand sliding window(s)	RW	I32	1	Real data	
3	40393	Enable BMS power limitation	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40395	Enable low	RW	I32	1	Real	0:Disabled;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		voltage demand control				data	1:Enabled;
3	40397	Low voltage transformer capacity(kVA)	RW	I32	1	Real data	
3	40399	Low voltage demand control factor(%)	RW	I32	1	Real data	
3	40401	Delayed shutdown time of AC(min)	RW	I32	1	Real data	
3	40403	Single cell Over-V protect threshold(V)	RW	F32	1	Real data	
3	40405	Single cell Under-V protect threshold(V)	RW	F32	1	Real data	
3	40407	Enable single cell voltage protection	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40409	Single cell Over-V protect difference(V)	RW	F32	1	Real data	
3	40411	Single cell Under-V protect difference(V)	RW	F32	1	Real data	
3	40413	SOC Prohibited discharging difference(%)	RW	F32	1	Real data	
3	40415	SOC Prohibited charging difference(%)	RW	F32	1	Real data	
3	40417	Maximum discharge power of the system(kW)	RW	I32	1	Real data	
3	40419	Maximum charging power of the system(kW)	RW	I32	1	Real data	
3	40421	Demand Margin(kW)	RW	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
3	40423	Transformer Capacity Expansion Margin	RW	I32	1	Real data	
3	40425	Noise threshold A	RW	I32	1	Real data	
3	40427	Noise threshold B	RW	I32	1	Real data	
3	40429	Noise threshold C	RW	I32	1	Real data	
3	40431	Power ratio 1(%)	RW	I32	1	Real data	
3	40433	Power ratio 2(%)	RW	I32	1	Real data	
3	40435	Power ratio 3(%)	RW	I32	1	Real data	
3	40437	Noise waiting time(min)	RW	I32	1	Real data	
3	40439	Noise mode	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40441	Leakage current threshold(mA)	RW	I32	1	Real data	
3	40443	Time when the intake and exhaust air are not turned off(s)	RW	I32	1	Real data	
3	40447	Leakage current protection mode	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40449	Fire protection level configuration	RW	I32	1	Real data	0:Low; 1:Middle; 2:High
3	40451	Access control enabled	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40453	PCS Manual recovery	RW	I32	1	Real data	0:default; 1:restore;
3	40455	Water immersion activation	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40457	Noise start hour	RW	I32	1	Real data	
3	40459	Noise start minute	RW	I32	1	Real data	
3	40461	Noise stop hour	RW	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
3	40463	Noise stop minute	RW	I32	1	Real data	
3	40465	Inlet pressure threshold(Bar)	RW	F32	1	Real data	
3	40467	Self circulation start gap(℃)	RW	I32	1	Real data	
3	40469	Self circulation stop gap(℃)	RW	I32	1	Real data	
3	40471	Idle heating start temperature (℃)	RW	I32	1	Real data	
3	40473	Idle heating stop temperature (℃)	RW	I32	1	Real data	
3	40475	Idle cooling start temperature (℃)	RW	I32	1	Real data	
3	40477	Idle cooling stop temperature (℃)	RW	I32	1	Real data	
3	40479	G100 Enable	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40481	G100 Allowed Unlock Time (min)	RW	I32	1	Real data	
3	40483	G100 Max Reset Count in 30 Days	RW	I32	1	Real data	
3	40485	G100 Max Abnormal Count in 10 Minutes	RW	I32	1	Real data	
3	40487	G100 Max Abnormal Count in 1 Day	RW	I32	1	Real data	
3	40489	G100 Export Limit(kW)	RW	I32	1	Real data	
3	40491	G100 Export Filter Time(s)	RW	I32	1	Real data	
3	40493	G100 Backflow Lock Time(s)	RW	I32	1	Real data	
3	40495	G100 Import Limit(kW)	RW	I32	1	Real data	
3	40497	G100 Import Filter Time(s)	RW	I32	1	Real data	
3	40499	G100 Overload Lock Time(s)	RW	I32	1	Real data	
3	40501	Clear DI trigger hold signal	RW	I32	1	Real data	1:Clear Protection

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
3	40503	Clear all protections	RW	I32	1	Real data	
3	40505	Enable dynamic environment protection	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40507	Set BMS HV_Connect	RW	I32	1	Real data	0:HV connect; 1:HV disconnect;
3	40509	Enable reactive power compensation	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40511	Set power factor	RW	F32	1	Real data	
3	40513	Set mqtt connect timeout(s)	RW	I32	1	Real data	
3	40515	Set modbus-tcp connect timeout(s)	RW	I32	1	Real data	
3	40517	modbus-tcp heartbeat(Switch between 0 and 1 every 5 seconds)	RW	I32	1	Real data	
3	40519	Find devices	RW	I32	1	Real data	0:Disabled; 1:Enabled;
3	40521	restart EMS	RW	I32	1	Real data	0:no-action; 1:restart EMS
3	40523	Set pcs Safety Regulations	RW	I32	1	Real data	0:China; 1:South Africa; 2:Europe; 4:Germany; 5:Italy; 6:England; 9:Belgium; 10:Sweden; 15:Czech Republic; 16:Hungary; 17:Thailand; 20:Poland;
3	40591	Set pcs FaultRst	RW	I32	1	Real data	1: Reset

3. PCS Register Definitions

Address code: 2

Table 3-1 PCS Register Definitions

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
2	10001	EPO fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10002	IGBT OCP fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10003	Bus hardware overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10004	Power module cycle current limit fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10005	Balance module hardware overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10006	24V power fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10007	Fan fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10008	Connection fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10009	External input dry contact 3 fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10010	Inductor overtemperature fault flag	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10011	Power module overtemperature fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10012	Balance module overtemperature fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10013	15V power fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10014	System fire alarm fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10015	External input dry	RO	BOOL	1	Alarm	0:Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		contact 1 fault					1:Fault;
2	10016	External input dry contact 2 fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10017	Ambient temp overtemperature fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10018	Dry contact overtemperature fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10019	Grid A phase overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10020	Grid B phase overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10021	Grid C phase overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10022	Grid A phase undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10023	Grid B phase undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10024	Grid C phase undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10025	Grid overfrequency fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10026	Grid underfrequency fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10027	Grid phase sequence error fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10028	A phase software overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10029	B phase software overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10030	C phase software overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10031	Grid voltage imbalance fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10032	Grid current imbalance fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10033	Grid phase loss fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10034	N line overcurrent	RO	BOOL	1	Alarm	0:Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		fault					1:Fault;
2	10035	Precharge bus overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10036	Precharge bus undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10037	Running bus overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10038	Running bus undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10039	Positive/negative bus imbalance fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10040	Battery undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10041	Battery overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10042	DC precharge overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10043	DC overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10044	Balance module software overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10045	Battery reverse connection fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10046	Precharge timeout fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10047	Precharge A phase overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10048	Precharge B phase overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10049	Precharge C phase overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10050	Leakage current overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10051	Control board RAM fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10052	Control board EEPROM fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10053	AD sampling zero drift fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10054	Backend	RO	BOOL	1	Alarm	0:Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		communication protocol fault					1:Fault;
2	10055	CAN communication protocol fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10056	CPLD communication protocol fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10057	DataLog data fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10058	Insulation detection fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10059	Software firmware mismatch fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10060	BMS battery system fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10061	STS communication fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10062	BMS communication fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10063	Parallel slave CAN comm fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10064	EMS communication fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10065	Precharge relay close failure	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10066	Precharge relay open failure	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10067	Precharge relay close state error	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10068	Precharge relay open state error	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10069	Main relay close failure	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10070	Main relay open failure	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10071	Main relay close state error	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10072	Main relay open	RO	BOOL	1	Alarm	0:Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		state error					1:Fault;
2	10073	AC main relay stuck fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10074	DC relay open circuit fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10075	AC main relay open circuit fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10076	Inverter A phase overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10077	Inverter B phase overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10078	Inverter C phase overvoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10079	Grid islanding fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10080	System resonance fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10081	Software overvoltage/overcurrent fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10082	High voltage ride through timeout	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10083	Inverter A phase undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10084	Inverter B phase undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10085	Inverter C phase undervoltage fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10086	Off-grid no sync signal fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10087	Off-grid output short circuit fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10088	Low voltage ride through timeout	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10089	DC component over-limit fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
2	10090	Power mismatch fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault;
4	30001	Online	RO	I32	1	Real data	0:Offline; 1:Online;
4	30003	Output A phase voltage(V)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30005	Output B phase voltage(V)	RO	I32	0.1	Real data	
4	30007	Output C phase voltage(V)	RO	I32	0.1	Real data	
4	30009	Output A phase current(A)	RO	I32	0.1	Real data	
4	30011	Output B phase current(A)	RO	I32	0.1	Real data	
4	30013	Output C phase current(A)	RO	I32	0.1	Real data	
4	30015	AC output total active power(kW)	RO	I32	0.1	Real data	
4	30017	AC A phase active power(kW)	RO	I32	0.1	Real data	
4	30019	AC B phase active power(kW)	RO	I32	0.1	Real data	
4	30021	AC C phase active power(kW)	RO	I32	0.1	Real data	
4	30023	AC output total reactive power(kVar)	RO	I32	0.1	Real data	
4	30025	AC A phase reactive power(kVar)	RO	I32	0.1	Real data	
4	30027	AC B phase reactive power(kVar)	RO	I32	0.1	Real data	
4	30029	AC C phase reactive power(kVar)	RO	I32	0.1	Real data	
4	30031	AC output total apparent power(kVA)	RO	I32	0.1	Real data	
4	30033	AC A phase apparent power(kVA)	RO	I32	0.1	Real data	
4	30035	AC B phase apparent power(kVA)	RO	I32	0.1	Real data	
4	30037	AC C phase apparent power(kVA)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30041	A phase power factor	RO	I32	0.1	Real data	
4	30043	B phase power factor	RO	I32	0.1	Real data	
4	30045	C phase power factor	RO	I32	0.1	Real data	
4	30047	Grid frequency(Hz)	RO	I32	0.1	Real data	
4	30049	Operating status	RO	I32	1	Real data	0:Stop; 1:Starting; 3:Starting; 5:Standby; 9:Running; 32:Fault; 257:Running; 64:Fault; 8256:Fault;
4	30059	Output AB line voltage(V)	RO	I32	0.1	Real data	
4	30061	Output BC line voltage(V)	RO	I32	0.1	Real data	
4	30063	Output CA line voltage(V)	RO	I32	0.1	Real data	
4	30065	Inductor A phase current(A)	RO	I32	0.1	Real data	
4	30067	Inductor B phase current(A)	RO	I32	0.1	Real data	
4	30069	Inductor C phase current(A)	RO	I32	0.1	Real data	
4	30071	Current grid phase sequence	RO	F32	1	Real data	0:Positive seq; 1:Negative seq
4	30079	AC power factor	RO	I32	0.01	Real data	
4	30081	Battery voltage(V)	RO	I32	0.1	Real data	
4	30083	Battery current(A)	RO	I32	0.1	Real data	
4	30085	Charge/discharge status	RO	I32	0.1	Real data	0:Idle; 1:Charging; 2:

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
							Discharging
4	30087	DC power(kW)	RO	I32	0.1	Real data	
4	30089	DC total current(A)	RO	I32	0.1	Real data	
4	30091	Total bus voltage(V)	RO	I32	0.1	Real data	
4	30093	Positive bus voltage(V)	RO	I32	0.1	Real data	
4	30095	Negative bus voltage(V)	RO	I32	0.1	Real data	
4	30097	System fault	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30099	IGBT temp(C)	RO	I32	0.1	Real data	
4	30101	Ambient temp(C)	RO	I32	0.1	Real data	
4	30103	Inductor temp(C)	RO	I32	0.1	Real data	
4	30105	Actual charge/discharge mode	RO	F32	1	Real data	1:AC current source mode; 0:DC voltage source mode
4	30107	DSP version V info	RO	I32	1	Real data	
4	30109	DSP version B info	RO	I32	1	Real data	
4	30111	DSP version D info	RO	I32	1	Real data	
4	30113	CPLD version V info	RO	I32	1	Real data	
4	30115	CPLD version B info	RO	I32	1	Real data	
4	30117	CPLD version D info	RO	I32	1	Real data	
4	30119	DC total charge energy(kWh)	RO	I32	1	Real data	
4	30121	DC daily charge energy(kWh)	RO	F32	1	Real data	
4	30123	DC total discharge energy(kWh)	RO	I32	1	Real data	
4	30125	DC daily discharge	RO	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		energy(kWh)				data	
4	30127	AC total charge energy(kWh)	RO	I32	1	Real data	
4	30129	AC daily charge energy(kWh)	RO	I32	1	Real data	
4	30131	AC total discharge energy(kWh)	RO	I32	1	Real data	
4	30133	AC daily discharge energy(kWh)	RO	I32	1	Real data	
4	30135	Insulation detection Rx(kohm)	RO	I32	1	Real data	
4	30137	Insulation detection Ry(kohm)	RO	I32	1	Real data	
4	30139	Hardware fault word 1	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30141	Hardware fault word 2	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30143	Grid fault word	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30145	Bus fault word	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30147	AC capacitor fault word	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30149	System fault word	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30151	Switch fault word	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30153	Other fault word	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30159	Mode operation mode setting	RO	I32	1	Real data	0:DC voltage source mode; 1:Current source mode;
4	30161	Grid-tied single-phase independent control setting	RO	I32	1	Real data	0:Disable; 1:Enable;
4	30163	Module current source parallel enable setting	RO	I32	1	Real data	0:Disable; 1:Enable;
4	30165	Module parallel	RO	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		quantity setting				data	
4	30167	Off-grid voltage setting	RO	I32	1	Real data	4096:Line voltage 400V; 3891:Line voltage 380V
4	30169	Grid-tied/off-grid status	RO	I32	1	Real data	0:Grid-tied; 1:Off-grid;
4	30171	Grid-tied/off-grid setting	RO	I32	1	Real data	0:Grid-tied enable; 1:Off-grid enable;
4	30173	Master/slave setting	RO	I32	1	Real data	0:Slave; 1:Master;
4	30175	Set active charge/discharge power(kW)	RO	I32	0.1	Real data	
4	30177	Reactive power compensation setting(kVar)	RO	I32	0.1	Real data	
4	30179	A phase active power setpoint(kW)	RO	I32	0.1	Real data	
4	30181	A phase reactive power setpoint(kVar)	RO	I32	0.1	Real data	
4	30183	B phase active power setpoint(kW)	RO	I32	0.1	Real data	
4	30185	B phase reactive power setpoint(kVar)	RO	I32	0.1	Real data	
4	30187	C phase active power setpoint(kW)	RO	I32	0.1	Real data	
4	30189	C phase reactive power setpoint(kVar)	RO	I32	0.1	Real data	
4	30191	Start/stop control	RO	I32	1	Real data	0:Stop; 1:Start;
4	30193	Fault reset command	RO	I32	1	Real data	1:Reset

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30195	Insulation detection enable	RO	I32	1	Real data	1:Enable
4	30197	DC source bus voltage setting(V)	RO	I32	0.1	Real data	
4	30199	Grid overfrequency protection(Hz)	RO	I32	0.01	Real data	
4	30201	Grid underfrequency protection(Hz)	RO	I32	0.01	Real data	
4	30203	Island overfrequency protection(Hz)	RO	I32	0.01	Real data	
4	30205	Island underfrequency protection(Hz)	RO	I32	0.01	Real data	
4	30207	Battery overvoltage protection point(V)	RO	I32	0.1	Real data	
4	30209	Battery undervoltage protection point(V)	RO	I32	0.1	Real data	
4	30211	Grid operation max charge current(A)	RO	I32	0.1	Real data	
4	30213	Bus overvoltage protection point(V)	RO	I32	0.1	Real data	
4	30215	Bus undervoltage protection point(V)	RO	I32	0.1	Real data	
4	30217	DC overcurrent protection point(A)	RO	I32	0.1	Real data	
4	30219	AC line voltage overvoltage protection point(V)	RO	I32	0.1	Real data	
4	30221	AC line voltage undervoltage protection point(V)	RO	I32	0.1	Real data	
4	30223	AC overcurrent protection point(A)	RO	I32	0.1	Real data	
4	30225	Module overtemperature protection point(C)	RO	I32	0.1	Real data	
4	30227	CC-CV charging battery voltage	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		point(V)					
4	30229	Battery constant voltage charging voltage(V)	RO	I32	0.1	Real data	
4	30231	CV charging max time limit(min)	RO	I32	0.1	Real data	
4	30233	CV to float charge current point setting(A)	RO	I32	0.1	Real data	
4	30235	Battery float charge voltage point setting(V)	RO	I32	0.1	Real data	
4	30237	Float to constant current point setting(A)	RO	I32	0.1	Real data	
4	30239	Parameter save command	RO	I32	1	Real data	1:Save parameters
4	30241	ReModbus address	RO	I32	1	Real data	
4	30243	ReModbus baudrate(bps)	RO	I32	1	Real data	96:9600
4	30245	HMI Modbus address	RO	I32	1	Real data	
4	30247	HMI Modbus baudrate(bps)	RO	I32	1	Real data	96:9600
4	30249	EMS comm timeout fault threshold(s)	RO	I32	1	Real data	
4	30251	Energy reset command	RO	I32	1	Real data	
4	30253	Safety standard one-key setting interface	RO	I32	1	Real data	0:China; 1:South Africa; 2:Europe; 3:Australia; 4:Germany; 5:Italy; 6:UK; 7: Netherlands; 8:Greece; 9:Belgium; 10:Sweden;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
							11:Denmark; 12:Spain; 13:Lithuania; 15:Czech; 16:Hungary; 17:Thailand; 18:Thailand; 19:Southeast Asia; 20:Poland; 21:Romania;
4	30255	Heartbeat signal	RO	I32	1	Real data	
4	30299	STS grid status	RO	I32	1	Real data	
4	30301	Bypass grid normal	RO	I32	1	Real data	0:Normal; 3:Fault;
4	30303	Bypass grid sync	RO	I32	1	Real data	0:Not sync; 1:Sync;
4	30305	STS mode	RO	I32	1	Real data	0:Normal mode; 1:Non-standard mode;
4	30307	Bypass SCR	RO	I32	1	Real data	0:Normal; 1:Fault;
4	30309	Online parallel status	RO	I32	1	Real data	
4	30311	PCS master/slave status	RO	I32	1	Real data	0:Slave; 1:Master;
4	30313	Off-grid frequency setting(Hz)	RO	I32	0.01	Real data	
4	30315	STS address	RO	I32	1	Real data	
4	30317	Balance module	RO	I32	1	Real data	1:Enable; 0:Disable;
4	30319	STS enable	RO	I32	1	Real data	1:Enable; 0:Disable;
4	30321	STS-PCS enable	RO	I32	1	Real data	2048:Enable; 0:Disable;
4	30323	STS-CAN comm enable	RO	I32	1	Real data	8192:Enable; 0:Disable;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30325	Off-grid AC soft start enable	RO	I32	1	Real data	32768: Enable; 0:Disable;
4	30327	System switching frequency setting	RO	I32	1	Real data	
4	30329	COM3 Modbus address	RO	I32	1	Real data	
4	30331	COM2 Modbus address	RO	I32	1	Real data	
4	30333	COM1 Modbus address	RO	I32	1	Real data	
4	30335	Auto start enable	RO	I32	1	Real data	1:Enable; 0:Disable;
4	30337	Grid-tied/off-grid switch enable	RO	I32	1	Real data	1:Enable; 0:Disable;
4	30339	STS conduction enable	RO	I32	1	Real data	
4	30341	System rated current limit point	RO	I32	1	Real data	
4	30329	COM3 Modbus address	RO	I32	1	Real data	

4. BMS Register Definitions

Address code: 34

Table 4-1 BMS Register Definitions

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
2	10001	Excessive total differential voltage	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10002	Low insulation resistance	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10003	Excessive single cell voltage	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10004	Excessive single cell temperature	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10005	Single cell voltage update fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10006	High terminal post temperature	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10007	Excessive current	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10008	Insulation fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10009	NTC fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10010	Terminal post temperature sensor fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10011	Battery temperature sensor fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10012	Voltage sampling fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10013	Sampling chip fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10014	Current sampling fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10015	Low battery temperature	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10016	Excessive charging current	RO	BOOL	1	Alarm	0: Normal; 1: Fault;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
2	10017	BMU self-check	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10018	BCU self-check	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10019	Fuse fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10020	Contactor fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10021	BMU communication failure	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10022	BAU communication failure	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10023	Current sampling fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10024	Insulation monitoring fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10025	Isolating switch status fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10026	NTC fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10027	High-voltage box temperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10028	High-voltage circuit fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10029	Functional safety fault	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10030	PCS communication failure	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
2	10031	Level 1 total voltage overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10032	Level 1 total voltage undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10033	Level 1 single cell overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10034	Level 1 single cell undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10035	Level 1 discharge	RO	BOOL	1	Alarm	0: Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		overcurrent fault					1: Alarm;
2	10036	Level 1 charge overcurrent fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10037	Level 1 discharge overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10038	Level 1 discharge undertemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10039	Level 1 charge overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10040	Level 1 charge undertemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10041	Level 1 low insulation resistance fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10042	Level 1 terminal post overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10043	Level 1 high-voltage box overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10044	Level 1 single cell voltage imbalance	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10045	Level 1 single cell temperature imbalance	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10046	Level 2 total voltage overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10047	Level 2 total voltage undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10048	Level 2 single cell overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10049	Level 2 single cell undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10050	Level 2 discharge	RO	BOOL	1	Alarm	0: Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		overcurrent fault					1: Alarm;
2	10051	Level 2 charge overcurrent fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10052	Level 2 discharge overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10053	Level 2 discharge undertemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10054	Level 2 charge overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10055	Level 2 charge undertemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10056	Level 2 low insulation resistance fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10057	Level 2 terminal post overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10058	Level 2 high-voltage box overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10059	Level 2 single cell voltage imbalance	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10060	Level 2 single cell temperature imbalance	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10061	Level 3 total voltage overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10062	Level 3 total voltage undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10063	Level 3 single cell overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10064	Level 3 single cell undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10065	Level 3 discharge	RO	BOOL	1	Alarm	0: Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		overcurrent fault					1: Alarm;
2	10066	Level 3 charge overcurrent fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10067	Level 3 discharge overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10068	Level 3 discharge undertemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10069	Level 3 charge overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10070	Level 3 charge undertemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10071	Level 3 low insulation resistance fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10072	Level 3 terminal post overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10073	Level 3 high-voltage box overtemperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10074	Level 3 single cell voltage imbalance	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10075	Level 3 single cell temperature imbalance	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10076	Level 3 low SOC	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10077	Level 1 excessive total differential voltage	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10078	Level 1 module overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10079	Level 1 module undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10080	Level 1 excessive temperature rise	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
2	10081	Level 1 excessive module differential voltage	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10082	Level 2 excessive total differential voltage	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10083	Level 2 module overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10084	Level 2 module undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10085	Level 2 excessive temperature rise	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10086	Level 2 excessive module differential voltage	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10087	Level 3 excessive total differential voltage	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10088	Level 3 module overvoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10089	Level 3 module undervoltage fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10090	Level 3 excessive temperature rise	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10091	Level 3 excessive module differential voltage	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10092	Slave controller initialization fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10093	Sampling cable fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10094	Connection cable fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10095	Sampling chip fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10096	Voltage sampling fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10097	Battery temperature sampling fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10098	Temperature sensor fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
2	10099	EEPROM fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10100	Passive balancing fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10101	Passive balancing temperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10102	Active balancing fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10103	Active balancing temperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10104	Terminal post temperature fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10105	Inter-pack balancing fault	RO	BOOL	1	Alarm	0: Normal; 1: Alarm;
2	10106	Slave controller 1 communication status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10107	Slave controller 2 communication status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10108	Slave controller 3 communication status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10109	Slave controller 4 communication status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10110	Slave controller 5 communication status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10111	Slave controller 1 main status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10112	Slave controller 2 main status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10113	Slave controller 3 main status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10114	Slave controller 4 main status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10115	Slave controller 5 main status	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10116	Aerosol feedback 1	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10117	Aerosol feedback 2	RO	BOOL	1	Alarm	0: Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
							1: Abnormal;
2	10118	Aerosol feedback 3	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10119	Aerosol feedback 4	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10120	Aerosol feedback 5	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10121	Emergency stop alarm	RO	BOOL	1	Alarm	0: Normal; 1: Abnormal;
2	10122	Fire alarm feedback signal	RO	BOOL	1	Alarm	0: Normal; 1: Fault;
4	30001	Online	RO	I32	1	Real data	0:Offline; 1:Online;
4	30003	Display SOC (%)	RO	I32	0.1	Real data	
4	30005	SOH (%)	RO	I32	1	Real data	
4	30007	Cluster total voltage (V)	RO	I32	0.1	Real data	
4	30009	Cluster total current (A)	RO	I32	0.1	Real data	
4	30011	Maximum single cell voltage (mV)	RO	I32	1	Real data	
4	30013	Maximum single cell voltage number	RO	I32	1	Real data	
4	30015	Minimum single cell voltage (mV)	RO	I32	1	Real data	
4	30017	Minimum single cell voltage number	RO	I32	1	Real data	
4	30019	Maximum battery temperature (°C)	RO	I32	0.1	Real data	
4	30021	Maximum battery temperature number	RO	I32	1	Real data	
4	30023	Minimum battery temperature (°C)	RO	I32	0.1	Real data	
4	30025	Minimum battery temperature number	RO	I32	1	Real data	
4	30027	System status	RO	I32	1	Real	0: Normal;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
						data	1: Charge forbidden; 2: Discharge forbidden; 3: Standby; 4: Shutdown;
4	30031	Positive terminal insulation resistance (kΩ)	RO	I32	1	Real data	
4	30033	Negative terminal insulation resistance (kΩ)	RO	I32	1	Real data	
4	30047	Pre-power-on stage	RO	I32	1	Real data	0: Waiting to start; 1: Pre-charging; 2: Pre-charging; 3: Pre-charge success; 4: Pre-charge failure;
4	30049	Slave registration status	RO	I32	1	Real data	0: Slave registration failed; 1: Slave registration successful
4	30051	Charge/Discharge status	RO	I32	1	Real data	0: Idle; 1: Discharging; 2: Charging;
4	30053	Fully charged	RO	I32	1	Real data	0: Normal; 1: Valid;
4	30055	Fully discharged	RO	I32	1	Real data	0: Normal; 1: Valid;
4	30057	Positive contact status	RO	I32	1	Real data	0: Open; 1: Closed;
4	30059	Pre-charge contactor status	RO	I32	1	Real data	0: Open; 1: Closed;
4	30061	Negative contactor status	RO	I32	1	Real data	0: Open; 1: Closed;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30063	Isolation switch feedback status	RO	I32	1	Real data	0: Open; 1: Closed;
4	30065	Slave detailed alarm status	RO	I32	1	Real data	
4	30067	Functional safety alarm detailed fault status word	RO	I32	1	Real data	
4	30069	Main control external fault alarm status word	RO	I32	1	Real data	
4	30071	Severe alarm status word	RO	I32	1	Real data	
4	30073	Alarm status word	RO	I32	1	Real data	
4	30075	Warning status word	RO	I32	1	Real data	
4	30077	Severe alarm 2 status word	RO	I32	1	Real data	
4	30079	Alarm 2 status word	RO	I32	1	Real data	
4	30081	Warning 2 status word	RO	I32	1	Real data	
4	30083	CAN slave ID allocation failure position	RO	I32	1	Real data	
4	30085	Daisy chain 1 communication error chip number	RO	I32	1	Real data	
4	30087	Daisy chain 2 communication error chip number	RO	I32	1	Real data	
4	30089	Main control software project number	RO	I32	1	Real data	
4	30091	Main control software main version number	RO	I32	1	Real data	
4	30093	Main control software sub version number	RO	I32	1	Real data	
4	30095	Main control software revision	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		version number					
4	30097	Main control hardware main version number	RO	I32	1	Real data	
4	30099	Main control hardware sub version number	RO	I32	1	Real data	
4	30101	Module number with maximum cell voltage	RO	I32	1	Real data	
4	30103	Maximum voltage cell position in module	RO	I32	1	Real data	
4	30105	Module number with minimum cell voltage	RO	I32	1	Real data	
4	30107	Minimum voltage cell position in module	RO	I32	1	Real data	
4	30109	Voltage difference between max/min cells (mV)	RO	I32	1	Real data	
4	30111	Average single cell voltage (mV)	RO	I32	1	Real data	
4	30113	Highest temperature slave controller number	RO	I32	1	Real data	
4	30115	Highest temperature cell position in module	RO	I32	1	Real data	
4	30117	Minimum temperature module number	RO	I32	1	Real data	
4	30119	Lowest temperature cell position in module	RO	I32	1	Real data	
4	30121	Average temperature (°C)	RO	I32	0.1	Real data	
4	30123	Maximum pole temperature (°C)	RO	I32	0.1	Real data	
4	30125	Highest temperature	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		terminal post position in module					
4	30127	Maximum acceptable charge current (A)	RO	I32	0.1	Real data	
4	30129	Maximum acceptable discharge current (A)	RO	I32	0.1	Real data	
4	30131	Maximum temperature difference between cells (℃)	RO	I32	0.1	Real data	
4	30133	Maximum cell temperature rise in cluster (℃)	RO	I32	0.1	Real data	
4	30135	Battery pack ID with maximum temperature rise	RO	I32	1	Real data	
4	30137	Highest temperature cell position in cluster	RO	I32	1	Real data	
4	30139	All highest temperature rise cell position in cluster	RO	I32	1	Real data	
4	30141	Internal cluster SOC (%)	RO	I32	0.1	Real data	
4	30143	Precharge total voltage (V)	RO	I32	0.1	Real data	
4	30145	Summed cell voltages (V)	RO	I32	0.1	Real data	
4	30147	K_total voltage (V)	RO	I32	0.1	Real data	
4	30149	Shunt sampled current (A)	RO	I32	0.1	Real data	
4	30151	CAN Hall sampled current (A)	RO	I32	0.1	Real data	
4	30153	Current/voltage Hall sampled current (A)	RO	I32	0.1	Real data	
4	30155	Insulation	RO	I32	1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		resistance (kΩ)				data	
4	30157	Power supply sampling voltage (mV)	RO	I32	1	Real data	
4	30159	High-voltage box maximum temperature	RO	I32	0.1	Real data	
4	30161	High-voltage box temperature 1 (℃)	RO	I32	0.1	Real data	
4	30163	High-voltage box temperature 2 (℃)	RO	I32	0.1	Real data	
4	30165	High-voltage box temperature 3 (℃)	RO	I32	0.1	Real data	
4	30167	High-voltage box temperature 4 (℃)	RO	I32	0.1	Real data	
4	30169	Battery cluster internal resistance (mΩ)	RO	I32	1	Real data	
4	30171	Monthly cumulative charge energy (kWh)	RO	I32	1	Real data	
4	30173	Monthly cumulative discharge energy (kWh)	RO	I32	1	Real data	
4	30175	Annual cumulative charge energy upper 16 bits	RO	I32	1	Real data	
4	30177	Annual cumulative charge energy lower 16 bits	RO	I32	1	Real data	
4	30179	Annual cumulative discharge energy upper 16 bits	RO	I32	1	Real data	
4	30181	Annual cumulative discharge energy lower 16 bits	RO	I32	1	Real data	
4	30183	Total accumulated charging capacity upper 16 bits	RO	I32	1	Real data	
4	30185	Total accumulated charging capacity	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		lower 16 bits					
4	30187	Total accumulated discharging capacity upper 16 bits	RO	I32	1	Real data	
4	30189	Total accumulated discharging capacity lower 16 bits	RO	I32	1	Real data	
4	30191	Alarm maximum voltage battery number	RO	I32	1	Real data	
4	30193	Alarm maximum voltage value (mV)	RO	I32	1	Real data	
4	30195	Halt maximum voltage battery number	RO	I32	1	Real data	
4	30197	Halt maximum voltage value (mV)	RO	I32	1	Real data	
4	30199	Alarm minimum voltage battery number	RO	I32	1	Real data	
4	30201	Alarm minimum voltage value (mV)	RO	I32	1	Real data	
4	30203	Halt minimum voltage battery number	RO	I32	1	Real data	
4	30205	Halt minimum voltage value (mV)	RO	I32	1	Real data	
4	30207	Battery pack overvoltage alarm voltage value (V)	RO	I32	0.1	Real data	
4	30209	Battery pack overvoltage halt voltage value (V)	RO	I32	0.1	Real data	
4	30211	Battery pack undervoltage alarm voltage value (V)	RO	I32	0.1	Real data	
4	30213	Battery pack undervoltage halt voltage value (V)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30215	Charging overcurrent alarm current value (A)	RO	I32	0.1	Real data	
4	30217	Charging overcurrent halt current value (A)	RO	I32	0.1	Real data	
4	30219	Discharging overcurrent alarm current value (A)	RO	I32	0.1	Real data	
4	30221	Discharging overcurrent halt current value (A)	RO	I32	0.1	Real data	
4	30223	Alarm maximum battery temperature point number	RO	I32	1	Real data	
4	30225	Alarm maximum battery temperature value (℃)	RO	I32	0.1	Real data	
4	30227	Halt maximum battery temperature point number	RO	I32	1	Real data	
4	30229	Halt maximum battery temperature value (℃)	RO	I32	0.1	Real data	
4	30231	Alarm minimum battery temperature point number	RO	I32	1	Real data	
4	30233	Alarm minimum battery temperature value (℃)	RO	I32	0.1	Real data	
4	30235	Halt minimum battery temperature point number	RO	I32	1	Real data	
4	30237	Halt minimum battery	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		temperature value (℃)					
4	30239	Alarm maximum high-voltage box temperature (℃)	RO	I32	0.1	Real data	
4	30241	Halt maximum high-voltage box temperature (℃)	RO	I32	0.1	Real data	
4	30243	Temperature rise alarm battery number	RO	I32	1	Real data	
4	30245	Temperature rise alarm temperature value (℃)	RO	I32	0.1	Real data	
4	30247	Temperature rise halt battery number	RO	I32	1	Real data	
4	30249	Temperature rise halt temperature value (℃)	RO	I32	0.1	Real data	
4	30251	Alarm maximum pole temperature point number	RO	I32	1	Real data	
4	30253	Alarm maximum pole temperature value (℃)	RO	I32	0.1	Real data	
4	30255	Halt maximum pole temperature point number	RO	I32	1	Real data	
4	30257	Halt maximum pole temperature value (℃)	RO	I32	0.1	Real data	
4	30259	Alarm maximum cell voltage difference value (mV)	RO	I32	0.1	Real data	
4	30261	Halt maximum cell voltage difference value (mV)	RO	I32	0.1	Real data	
4	30263	Alarm low insulation resistance value	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30265	Halt low insulation resistance value	RO	I32	1	Real data	
4	30267	BCU-BMU voltage difference alarm value	RO	I32	1	Real data	
4	30269	BCU-BMU voltage difference halt value	RO	I32	1	Real data	
4	30271	Cell temperature difference alarm value	RO	I32	1	Real data	
4	30273	Cell temperature difference halt value	RO	I32	1	Real data	
4	30275	Alarm maximum module voltage number	RO	I32	1	Real data	
4	30277	Alarm module overvoltage value (V)	RO	I32	0.1	Real data	
4	30279	Halt maximum module voltage number	RO	I32	1	Real data	
4	30281	Halt module overvoltage value (V)	RO	I32	0.1	Real data	
4	30283	Alarm minimum module voltage number	RO	I32	1	Real data	
4	30285	Alarm module undervoltage value (V)	RO	I32	0.1	Real data	
4	30287	Halt minimum module voltage number	RO	I32	1	Real data	
4	30289	Halt module undervoltage value (V)	RO	I32	0.1	Real data	
4	30291	Start Insulation Sampling	RO	I32	1	Real data	0:Disabled; 1:Enabled;
4	30293	Precharge Control	RO	I32	1	Real data	1:Start; 2:Starting;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
							0:Stop; 3:Success
4	30295	Master Reset	RO	I32	1	Real data	1:Reset;
4	30297	Slave ID Reset Enable	RO	I32	1	Real data	1:Enable; 2:Disable;
4	30299	Set Master Address	RO	I32	1	Real data	
4	30301	Fan Forced Control	RO	I32	1	Real data	0:No Control; 1:Force On; 2:Force Off;
4	30303	Rack Cell Overvoltage Level3 Alarm Threshold	RO	I32	1	Real data	
4	30305	Rack Cell Overvoltage Level3 Recovery Threshold	RO	I32	1	Real data	
4	30307	Rack Cell Undervoltage Level3 Alarm Threshold	RO	I32	1	Real data	
4	30309	Rack Cell Undervoltage Level3 Recovery Threshold	RO	I32	1	Real data	
4	30311	Rack Total Overvoltage Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30313	Rack Total Overvoltage Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30315	Rack Total Undervoltage Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30317	Rack Total Undervoltage Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30319	Rack Charge	RO	I32	0.1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		Overcurrent Level3 Alarm Threshold				data	
4	30321	Rack Charge Overcurrent Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30323	Rack Discharge Overcurrent Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30325	Rack Discharge Overcurrent Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30327	Rack Charge Over-Temperature Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30329	Rack Charge Over-Temperature Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30331	Rack Charge Under-Temperature Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30333	Rack Charge Under-Temperature Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30335	Rack SOC Low Level3 Alarm Threshold	RO	I32	1	Real data	
4	30337	Rack SOC Low Level3 Recovery Threshold	RO	I32	1	Real data	
4	30339	Rack Terminal Over-Temperature Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30341	Rack Terminal	RO	I32	0.1	Real	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		Over-Temperature Level3 Recovery Threshold				data	
4	30343	Rack Insulation Failure Level3 Alarm Threshold	RO	I32	1	Real data	
4	30345	Rack Insulation Failure Level3 Recovery Threshold	RO	I32	1	Real data	
4	30347	Rack Cell Voltage Difference High Level3 Alarm Threshold	RO	I32	1	Real data	
4	30349	Rack Cell Voltage Difference High Level3 Recovery Threshold	RO	I32	1	Real data	
4	30351	Rack Total Voltage Difference High Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30353	Rack Total Voltage Difference High Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30355	Rack Discharge Over-Temperature Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30357	Rack Discharge Over-Temperature Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30359	Rack Discharge Under-Temperature Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30361	Rack Discharge Under-Temperature	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		Level3 Recovery Threshold					
4	30363	Rack Temperature Difference High Level3 Alarm Threshold	RO	I32	0.1	Real data	
4	30365	Rack Temperature Difference High Level3 Recovery Threshold	RO	I32	0.1	Real data	
4	30367	Rack HV Box Connector Over-Temperature Level1 Alarm Threshold	RO	I32	0.1	Real data	
4	30369	Rack HV Box Connector Over-Temperature Level1 Recovery Threshold	RO	I32	0.1	Real data	
4	30371	Rack Cell Overvoltage Level2 Alarm Threshold	RO	I32	1	Real data	
4	30373	Rack Cell Overvoltage Level2 Recovery Threshold	RO	I32	1	Real data	
4	30375	Rack Cell Undervoltage Level2 Alarm Threshold	RO	I32	1	Real data	
4	30377	Rack Cell Undervoltage Level2 Recovery Threshold	RO	I32	1	Real data	
4	30379	Rack Total Overvoltage Level2 Alarm Threshold	RO	I32	0.1	Real data	
4	30381	Rack Total Overvoltage Level2 Recovery Threshold	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30383	Rack Total Undervoltage Level2 Alarm Threshold	RO	I32	0.1	Real data	
4	30385	Rack Total Undervoltage Level2 Recovery Threshold	RO	I32	0.1	Real data	
4	30387	Rack Charge Overcurrent Level2 Alarm Threshold	RO	I32	0.1	Real data	
4	30389	Rack Charge Overcurrent Level2 Recovery Threshold	RO	I32	0.1	Real data	
4	30391	Rack Discharge Overcurrent Level2 Alarm Threshold	RO	I32	0.1	Real data	
4	30393	Rack Discharge Overcurrent Level2 Recovery Threshold	RO	I32	0.1	Real data	
4	30395	Rack Charge Over-Temperature Level2 Alarm Threshold	RO	I32	0.1	Real data	
4	30397	Rack Charge Over-Temperature Level2 Recovery Threshold	RO	I32	0.1	Real data	
4	30399	Rack Charge Under-Temperature Level2 Alarm Threshold	RO	I32	0.1	Real data	
4	30401	Rack Charge Under-Temperature Level2 Recovery Threshold	RO	I32	0.1	Real data	
4	30403	Rack SOC Low Level2 Alarm	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		Threshold					
4	30405	Rack SOC Low Level 2 Recovery Threshold	RO	I32	1	Real data	
4	30407	Rack Pole Temperature High Level 2 Alarm Threshold	RO	I32	0.1	Real data	
4	30409	Rack Pole Temperature High Level 2 Recovery Threshold	RO	I32	0.1	Real data	
4	30411	Rack Insulation Failure Level 2 Alarm Threshold	RO	I32	1	Real data	
4	30413	Rack Insulation Failure Level 2 Recovery Threshold	RO	I32	1	Real data	
4	30415	Rack Single Cell Voltage Difference High Level 2 Alarm Threshold	RO	I32	1	Real data	
4	30417	Rack Single Cell Voltage Difference High Level 2 Recovery Threshold	RO	I32	1	Real data	
4	30419	Rack Total Voltage Difference High Level 2 Alarm Threshold	RO	I32	0.1	Real data	
4	30421	Rack Total Voltage Difference High Level 2 Recovery Threshold	RO	I32	0.1	Real data	
4	30423	Rack Discharge Overtemperature Level 2 Alarm Threshold	RO	I32	0.1	Real data	
4	30425	Rack Discharge Overtemperature	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		Level 2 Recovery Threshold					
4	30427	Rack Discharge Undertemperature Level 2 Alarm Threshold	RO	I32	0.1	Real data	
4	30429	Rack Discharge Undertemperature Level 2 Recovery Threshold	RO	I32	0.1	Real data	
4	30431	Rack Temperature Difference High Level 2 Alarm Threshold	RO	I32	0.1	Real data	
4	30433	Rack Temperature Difference High Level 2 Recovery Threshold	RO	I32	0.1	Real data	
4	30435	Rack HV Box Connector Temperature High Level 2 Alarm Threshold	RO	I32	0.1	Real data	
4	30437	Rack HV Box Connector Temperature High Level 2 Recovery Threshold	RO	I32	0.1	Real data	
4	30439	Rack Single Cell Overvoltage Level 1 Alarm Threshold	RO	I32	1	Real data	
4	30441	Rack Single Cell Overvoltage Level 1 Recovery Threshold	RO	I32	1	Real data	
4	30443	Rack Single Cell Undervoltage Level 1 Alarm Threshold	RO	I32	1	Real data	
4	30445	Rack Single Cell Undervoltage Level 1 Recovery	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		Threshold					
4	30447	Rack Total Overvoltage Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30449	Rack Total Overvoltage Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30451	Rack Total Undervoltage Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30453	Rack Total Undervoltage Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30455	Rack Charge Overcurrent Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30457	Rack Charge Overcurrent Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30459	Rack Discharge Overcurrent Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30461	Rack Discharge Overcurrent Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30463	Rack Charge Overtemperature Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30465	Rack Charge Overtemperature Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30467	Rack Charge Undertemperature Level 1 Alarm Threshold	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30469	Rack Charge Undertemperature Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30471	Rack SOC Low Level 1 Alarm Threshold	RO	I32	1	Real data	
4	30473	Rack SOC Low Level 1 Recovery Threshold	RO	I32	1	Real data	
4	30475	Rack Terminal Temperature High Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30477	Rack Terminal Temperature High Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30479	Rack Insulation Failure Level 1 Alarm Threshold	RO	I32	1	Real data	
4	30481	Rack Insulation Failure Level 1 Recovery Threshold	RO	I32	1	Real data	
4	30483	Rack Single Cell Voltage Difference High Level 1 Alarm Threshold	RO	I32	1	Real data	
4	30485	Rack Single Cell Voltage Difference High Level 1 Recovery Threshold	RO	I32	1	Real data	
4	30487	Rack Total Voltage Difference High Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30489	Rack Total Voltage Difference High Level 1 Recovery Threshold	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30491	Rack Discharge Overtemperature Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30493	Rack Discharge Overtemperature Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30495	Rack Discharge Undertemperature Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30497	Rack Discharge Undertemperature Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30499	Rack Temperature Difference High Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30501	Rack Temperature Difference High Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30503	Rack HV Box Connector Temperature High Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30505	Rack HV Box Connector Temperature High Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30507	Rack Module Voltage Difference High Level 1 Alarm Threshold	RO	I32	0.1	Real data	
4	30509	Rack Module Voltage Difference High Level 2 Alarm Threshold	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30511	Rack Module Voltage Difference High Level 3 Alarm Threshold	RO	I32	0.1	Real data	
4	30513	Rack Module Voltage Difference High Level 1 Recovery Threshold	RO	I32	0.1	Real data	
4	30515	Rack Module Voltage Difference High Level 2 Recovery Threshold	RO	I32	0.1	Real data	
4	30517	Rack Module Voltage Difference High Level 3 Recovery Threshold	RO	I32	0.1	Real data	
4	30519	BCU Time	RO	I32	1	Real data	
4	30521	Precharge End Voltage Difference	RO	I32	0.1	Real data	
4	30523	Fan Activation Temperature	RO	I32	0.1	Real data	
4	30525	Fan Deactivation Temperature	RO	I32	0.1	Real data	

5. Single Cell Register Definitions

Address code: 98

Table 5-1 Single Cell Register Definitions

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30001	Online	RO	I32	1	Real data	0:Offline; 1:Online;
4	30003	Cell Volt001(mV)	RO	I32	1	Real data	
4	30005	Cell Volt002(mV)	RO	I32	1	Real data	
4	30007	Cell Volt003(mV)	RO	I32	1	Real data	
4	30009	Cell Volt004(mV)	RO	I32	1	Real data	
4	30011	Cell Volt005(mV)	RO	I32	1	Real data	
4	30013	Cell Volt006(mV)	RO	I32	1	Real data	
4	30015	Cell Volt007(mV)	RO	I32	1	Real data	
4	30017	Cell Volt008(mV)	RO	I32	1	Real data	
4	30019	Cell Volt009(mV)	RO	I32	1	Real data	
4	30021	Cell Volt010(mV)	RO	I32	1	Real data	
4	30023	Cell Volt011(mV)	RO	I32	1	Real data	
4	30025	Cell Volt012(mV)	RO	I32	1	Real data	
4	30027	Cell Volt013(mV)	RO	I32	1	Real data	
4	30029	Cell Volt014(mV)	RO	I32	1	Real data	
4	30031	Cell Volt015(mV)	RO	I32	1	Real data	
4	30033	Cell Volt016(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30035	Cell Volt017(mV)	RO	I32	1	Real data	
4	30037	Cell Volt018(mV)	RO	I32	1	Real data	
4	30039	Cell Volt019(mV)	RO	I32	1	Real data	
4	30041	Cell Volt020(mV)	RO	I32	1	Real data	
4	30043	Cell Volt021(mV)	RO	I32	1	Real data	
4	30045	Cell Volt022(mV)	RO	I32	1	Real data	
4	30047	Cell Volt023(mV)	RO	I32	1	Real data	
4	30049	Cell Volt024(mV)	RO	I32	1	Real data	
4	30051	Cell Volt025(mV)	RO	I32	1	Real data	
4	30053	Cell Volt026(mV)	RO	I32	1	Real data	
4	30055	Cell Volt027(mV)	RO	I32	1	Real data	
4	30057	Cell Volt028(mV)	RO	I32	1	Real data	
4	30059	Cell Volt029(mV)	RO	I32	1	Real data	
4	30061	Cell Volt030(mV)	RO	I32	1	Real data	
4	30063	Cell Volt031(mV)	RO	I32	1	Real data	
4	30065	Cell Volt032(mV)	RO	I32	1	Real data	
4	30067	Cell Volt033(mV)	RO	I32	1	Real data	
4	30069	Cell Volt034(mV)	RO	I32	1	Real data	
4	30071	Cell Volt035(mV)	RO	I32	1	Real data	
4	30073	Cell Volt036(mV)	RO	I32	1	Real data	
4	30075	Cell Volt037(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30077	Cell Volt038(mV)	RO	I32	1	Real data	
4	30079	Cell Volt039(mV)	RO	I32	1	Real data	
4	30081	Cell Volt040(mV)	RO	I32	1	Real data	
4	30083	Cell Volt041(mV)	RO	I32	1	Real data	
4	30085	Cell Volt042(mV)	RO	I32	1	Real data	
4	30087	Cell Volt043(mV)	RO	I32	1	Real data	
4	30089	Cell Volt044(mV)	RO	I32	1	Real data	
4	30091	Cell Volt045(mV)	RO	I32	1	Real data	
4	30093	Cell Volt046(mV)	RO	I32	1	Real data	
4	30095	Cell Volt047(mV)	RO	I32	1	Real data	
4	30097	Cell Volt048(mV)	RO	I32	1	Real data	
4	30099	Cell Volt049(mV)	RO	I32	1	Real data	
4	30101	Cell Volt050(mV)	RO	I32	1	Real data	
4	30103	Cell Volt051(mV)	RO	I32	1	Real data	
4	30105	Cell Volt052(mV)	RO	I32	1	Real data	
4	30107	Cell Volt053(mV)	RO	I32	1	Real data	
4	30109	Cell Volt054(mV)	RO	I32	1	Real data	
4	30111	Cell Volt055(mV)	RO	I32	1	Real data	
4	30113	Cell Volt056(mV)	RO	I32	1	Real data	
4	30115	Cell Volt057(mV)	RO	I32	1	Real data	
4	30117	Cell Volt058(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30119	Cell Volt059(mV)	RO	I32	1	Real data	
4	30121	Cell Volt060(mV)	RO	I32	1	Real data	
4	30123	Cell Volt061(mV)	RO	I32	1	Real data	
4	30125	Cell Volt062(mV)	RO	I32	1	Real data	
4	30127	Cell Volt063(mV)	RO	I32	1	Real data	
4	30129	Cell Volt064(mV)	RO	I32	1	Real data	
4	30131	Cell Volt065(mV)	RO	I32	1	Real data	
4	30133	Cell Volt066(mV)	RO	I32	1	Real data	
4	30135	Cell Volt067(mV)	RO	I32	1	Real data	
4	30137	Cell Volt068(mV)	RO	I32	1	Real data	
4	30139	Cell Volt069(mV)	RO	I32	1	Real data	
4	30141	Cell Volt070(mV)	RO	I32	1	Real data	
4	30143	Cell Volt071(mV)	RO	I32	1	Real data	
4	30145	Cell Volt072(mV)	RO	I32	1	Real data	
4	30147	Cell Volt073(mV)	RO	I32	1	Real data	
4	30149	Cell Volt074(mV)	RO	I32	1	Real data	
4	30151	Cell Volt075(mV)	RO	I32	1	Real data	
4	30153	Cell Volt076(mV)	RO	I32	1	Real data	
4	30155	Cell Volt077(mV)	RO	I32	1	Real data	
4	30157	Cell Volt078(mV)	RO	I32	1	Real data	
4	30159	Cell Volt079(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30161	Cell Volt080(mV)	RO	I32	1	Real data	
4	30163	Cell Volt081(mV)	RO	I32	1	Real data	
4	30165	Cell Volt082(mV)	RO	I32	1	Real data	
4	30167	Cell Volt083(mV)	RO	I32	1	Real data	
4	30169	Cell Volt084(mV)	RO	I32	1	Real data	
4	30171	Cell Volt085(mV)	RO	I32	1	Real data	
4	30173	Cell Volt086(mV)	RO	I32	1	Real data	
4	30175	Cell Volt087(mV)	RO	I32	1	Real data	
4	30177	Cell Volt088(mV)	RO	I32	1	Real data	
4	30179	Cell Volt089(mV)	RO	I32	1	Real data	
4	30181	Cell Volt090(mV)	RO	I32	1	Real data	
4	30183	Cell Volt091(mV)	RO	I32	1	Real data	
4	30185	Cell Volt092(mV)	RO	I32	1	Real data	
4	30187	Cell Volt093(mV)	RO	I32	1	Real data	
4	30189	Cell Volt094(mV)	RO	I32	1	Real data	
4	30191	Cell Volt095(mV)	RO	I32	1	Real data	
4	30193	Cell Volt096(mV)	RO	I32	1	Real data	
4	30195	Cell Volt097(mV)	RO	I32	1	Real data	
4	30197	Cell Volt098(mV)	RO	I32	1	Real data	
4	30199	Cell Volt099(mV)	RO	I32	1	Real data	
4	30201	Cell Volt100(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30203	Cell Volt101(mV)	RO	I32	1	Real data	
4	30205	Cell Volt102(mV)	RO	I32	1	Real data	
4	30207	Cell Volt103(mV)	RO	I32	1	Real data	
4	30209	Cell Volt104(mV)	RO	I32	1	Real data	
4	30211	Cell Volt105(mV)	RO	I32	1	Real data	
4	30213	Cell Volt106(mV)	RO	I32	1	Real data	
4	30215	Cell Volt107(mV)	RO	I32	1	Real data	
4	30217	Cell Volt108(mV)	RO	I32	1	Real data	
4	30219	Cell Volt109(mV)	RO	I32	1	Real data	
4	30221	Cell Volt110(mV)	RO	I32	1	Real data	
4	30223	Cell Volt111(mV)	RO	I32	1	Real data	
4	30225	Cell Volt112(mV)	RO	I32	1	Real data	
4	30227	Cell Volt113(mV)	RO	I32	1	Real data	
4	30229	Cell Volt114(mV)	RO	I32	1	Real data	
4	30231	Cell Volt115(mV)	RO	I32	1	Real data	
4	30233	Cell Volt116(mV)	RO	I32	1	Real data	
4	30235	Cell Volt117(mV)	RO	I32	1	Real data	
4	30237	Cell Volt118(mV)	RO	I32	1	Real data	
4	30239	Cell Volt119(mV)	RO	I32	1	Real data	
4	30241	Cell Volt120(mV)	RO	I32	1	Real data	
4	30243	Cell Volt121(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30245	Cell Volt122(mV)	RO	I32	1	Real data	
4	30247	Cell Volt123(mV)	RO	I32	1	Real data	
4	30249	Cell Volt124(mV)	RO	I32	1	Real data	
4	30251	Cell Volt125(mV)	RO	I32	1	Real data	
4	30253	Cell Volt126(mV)	RO	I32	1	Real data	
4	30255	Cell Volt127(mV)	RO	I32	1	Real data	
4	30257	Cell Volt128(mV)	RO	I32	1	Real data	
4	30259	Cell Volt129(mV)	RO	I32	1	Real data	
4	30261	Cell Volt130(mV)	RO	I32	1	Real data	
4	30263	Cell Volt131(mV)	RO	I32	1	Real data	
4	30265	Cell Volt132(mV)	RO	I32	1	Real data	
4	30267	Cell Volt133(mV)	RO	I32	1	Real data	
4	30269	Cell Volt134(mV)	RO	I32	1	Real data	
4	30271	Cell Volt135(mV)	RO	I32	1	Real data	
4	30273	Cell Volt136(mV)	RO	I32	1	Real data	
4	30275	Cell Volt137(mV)	RO	I32	1	Real data	
4	30277	Cell Volt138(mV)	RO	I32	1	Real data	
4	30279	Cell Volt139(mV)	RO	I32	1	Real data	
4	30281	Cell Volt140(mV)	RO	I32	1	Real data	
4	30283	Cell Volt141(mV)	RO	I32	1	Real data	
4	30285	Cell Volt142(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30287	Cell Volt143(mV)	RO	I32	1	Real data	
4	30289	Cell Volt144(mV)	RO	I32	1	Real data	
4	30291	Cell Volt145(mV)	RO	I32	1	Real data	
4	30293	Cell Volt146(mV)	RO	I32	1	Real data	
4	30295	Cell Volt147(mV)	RO	I32	1	Real data	
4	30297	Cell Volt148(mV)	RO	I32	1	Real data	
4	30299	Cell Volt149(mV)	RO	I32	1	Real data	
4	30301	Cell Volt150(mV)	RO	I32	1	Real data	
4	30303	Cell Volt151(mV)	RO	I32	1	Real data	
4	30305	Cell Volt152(mV)	RO	I32	1	Real data	
4	30307	Cell Volt153(mV)	RO	I32	1	Real data	
4	30309	Cell Volt154(mV)	RO	I32	1	Real data	
4	30311	Cell Volt155(mV)	RO	I32	1	Real data	
4	30313	Cell Volt156(mV)	RO	I32	1	Real data	
4	30315	Cell Volt157(mV)	RO	I32	1	Real data	
4	30317	Cell Volt158(mV)	RO	I32	1	Real data	
4	30319	Cell Volt159(mV)	RO	I32	1	Real data	
4	30321	Cell Volt160(mV)	RO	I32	1	Real data	
4	30323	Cell Volt161(mV)	RO	I32	1	Real data	
4	30325	Cell Volt162(mV)	RO	I32	1	Real data	
4	30327	Cell Volt163(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30329	Cell Volt164(mV)	RO	I32	1	Real data	
4	30331	Cell Volt165(mV)	RO	I32	1	Real data	
4	30333	Cell Volt166(mV)	RO	I32	1	Real data	
4	30335	Cell Volt167(mV)	RO	I32	1	Real data	
4	30337	Cell Volt168(mV)	RO	I32	1	Real data	
4	30339	Cell Volt169(mV)	RO	I32	1	Real data	
4	30341	Cell Volt170(mV)	RO	I32	1	Real data	
4	30343	Cell Volt171(mV)	RO	I32	1	Real data	
4	30345	Cell Volt172(mV)	RO	I32	1	Real data	
4	30347	Cell Volt173(mV)	RO	I32	1	Real data	
4	30349	Cell Volt174(mV)	RO	I32	1	Real data	
4	30351	Cell Volt175(mV)	RO	I32	1	Real data	
4	30353	Cell Volt176(mV)	RO	I32	1	Real data	
4	30355	Cell Volt177(mV)	RO	I32	1	Real data	
4	30357	Cell Volt178(mV)	RO	I32	1	Real data	
4	30359	Cell Volt179(mV)	RO	I32	1	Real data	
4	30361	Cell Volt180(mV)	RO	I32	1	Real data	
4	30363	Cell Volt181(mV)	RO	I32	1	Real data	
4	30365	Cell Volt182(mV)	RO	I32	1	Real data	
4	30367	Cell Volt183(mV)	RO	I32	1	Real data	
4	30369	Cell Volt184(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30371	Cell Volt185(mV)	RO	I32	1	Real data	
4	30373	Cell Volt186(mV)	RO	I32	1	Real data	
4	30375	Cell Volt187(mV)	RO	I32	1	Real data	
4	30377	Cell Volt188(mV)	RO	I32	1	Real data	
4	30379	Cell Volt189(mV)	RO	I32	1	Real data	
4	30381	Cell Volt190(mV)	RO	I32	1	Real data	
4	30383	Cell Volt191(mV)	RO	I32	1	Real data	
4	30385	Cell Volt192(mV)	RO	I32	1	Real data	
4	30387	Cell Volt193(mV)	RO	I32	1	Real data	
4	30389	Cell Volt194(mV)	RO	I32	1	Real data	
4	30391	Cell Volt195(mV)	RO	I32	1	Real data	
4	30393	Cell Volt196(mV)	RO	I32	1	Real data	
4	30395	Cell Volt197(mV)	RO	I32	1	Real data	
4	30397	Cell Volt198(mV)	RO	I32	1	Real data	
4	30399	Cell Volt199(mV)	RO	I32	1	Real data	
4	30401	Cell Volt200(mV)	RO	I32	1	Real data	
4	30403	Cell Volt201(mV)	RO	I32	1	Real data	
4	30405	Cell Volt202(mV)	RO	I32	1	Real data	
4	30407	Cell Volt203(mV)	RO	I32	1	Real data	
4	30409	Cell Volt204(mV)	RO	I32	1	Real data	
4	30411	Cell Volt205(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30413	Cell Volt206(mV)	RO	I32	1	Real data	
4	30415	Cell Volt207(mV)	RO	I32	1	Real data	
4	30417	Cell Volt208(mV)	RO	I32	1	Real data	
4	30419	Cell Volt209(mV)	RO	I32	1	Real data	
4	30421	Cell Volt210(mV)	RO	I32	1	Real data	
4	30423	Cell Volt211(mV)	RO	I32	1	Real data	
4	30425	Cell Volt212(mV)	RO	I32	1	Real data	
4	30427	Cell Volt213(mV)	RO	I32	1	Real data	
4	30429	Cell Volt214(mV)	RO	I32	1	Real data	
4	30431	Cell Volt215(mV)	RO	I32	1	Real data	
4	30433	Cell Volt216(mV)	RO	I32	1	Real data	
4	30435	Cell Volt217(mV)	RO	I32	1	Real data	
4	30437	Cell Volt218(mV)	RO	I32	1	Real data	
4	30439	Cell Volt219(mV)	RO	I32	1	Real data	
4	30441	Cell Volt220(mV)	RO	I32	1	Real data	
4	30443	Cell Volt221(mV)	RO	I32	1	Real data	
4	30445	Cell Volt222(mV)	RO	I32	1	Real data	
4	30447	Cell Volt223(mV)	RO	I32	1	Real data	
4	30449	Cell Volt224(mV)	RO	I32	1	Real data	
4	30451	Cell Volt225(mV)	RO	I32	1	Real data	
4	30453	Cell Volt226(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30455	Cell Volt227(mV)	RO	I32	1	Real data	
4	30457	Cell Volt228(mV)	RO	I32	1	Real data	
4	30459	Cell Volt229(mV)	RO	I32	1	Real data	
4	30461	Cell Volt230(mV)	RO	I32	1	Real data	
4	30463	Cell Volt231(mV)	RO	I32	1	Real data	
4	30465	Cell Volt232(mV)	RO	I32	1	Real data	
4	30467	Cell Volt233(mV)	RO	I32	1	Real data	
4	30469	Cell Volt234(mV)	RO	I32	1	Real data	
4	30471	Cell Volt235(mV)	RO	I32	1	Real data	
4	30473	Cell Volt236(mV)	RO	I32	1	Real data	
4	30475	Cell Volt237(mV)	RO	I32	1	Real data	
4	30477	Cell Volt238(mV)	RO	I32	1	Real data	
4	30479	Cell Volt239(mV)	RO	I32	1	Real data	
4	30481	Cell Volt240(mV)	RO	I32	1	Real data	
4	30483	Cell Volt241(mV)	RO	I32	1	Real data	
4	30485	Cell Volt242(mV)	RO	I32	1	Real data	
4	30487	Cell Volt243(mV)	RO	I32	1	Real data	
4	30489	Cell Volt244(mV)	RO	I32	1	Real data	
4	30491	Cell Volt245(mV)	RO	I32	1	Real data	
4	30493	Cell Volt246(mV)	RO	I32	1	Real data	
4	30495	Cell Volt247(mV)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30497	Cell Volt248(mV)	RO	I32	1	Real data	
4	30499	Cell Volt249(mV)	RO	I32	1	Real data	
4	30501	Cell Volt250(mV)	RO	I32	1	Real data	
4	30503	Cell Volt251(mV)	RO	I32	1	Real data	
4	30505	Cell Volt252(mV)	RO	I32	1	Real data	
4	30507	Cell Volt253(mV)	RO	I32	1	Real data	
4	30509	Cell Volt254(mV)	RO	I32	1	Real data	
4	30511	Cell Volt255(mV)	RO	I32	1	Real data	
4	30513	Cell Volt256(mV)	RO	I32	1	Real data	
4	30515	Cell Volt257(mV)	RO	I32	1	Real data	
4	30517	Cell Volt258(mV)	RO	I32	1	Real data	
4	30519	Cell Volt259(mV)	RO	I32	1	Real data	
4	30521	Cell Volt260(mV)	RO	I32	1	Real data	
4	30523	Cell Temp001(℃)	RO	I32	0.1	Real data	
4	30525	Cell Temp002(℃)	RO	I32	0.1	Real data	
4	30527	Cell Temp003(℃)	RO	I32	0.1	Real data	
4	30529	Cell Temp004(℃)	RO	I32	0.1	Real data	
4	30531	Cell Temp005(℃)	RO	I32	0.1	Real data	
4	30533	Cell Temp006(℃)	RO	I32	0.1	Real data	
4	30535	Cell Temp007(℃)	RO	I32	0.1	Real data	
4	30537	Cell Temp008(℃)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30539	Cell Temp009(℃)	RO	I32	0.1	Real data	
4	30541	Cell Temp010(℃)	RO	I32	0.1	Real data	
4	30543	Cell Temp011(℃)	RO	I32	0.1	Real data	
4	30545	Cell Temp012(℃)	RO	I32	0.1	Real data	
4	30547	Cell Temp013(℃)	RO	I32	0.1	Real data	
4	30549	Cell Temp014(℃)	RO	I32	0.1	Real data	
4	30551	Cell Temp015(℃)	RO	I32	0.1	Real data	
4	30553	Cell Temp016(℃)	RO	I32	0.1	Real data	
4	30555	Cell Temp017(℃)	RO	I32	0.1	Real data	
4	30557	Cell Temp018(℃)	RO	I32	0.1	Real data	
4	30559	Cell Temp019(℃)	RO	I32	0.1	Real data	
4	30561	Cell Temp020(℃)	RO	I32	0.1	Real data	
4	30563	Cell Temp021(℃)	RO	I32	0.1	Real data	
4	30565	Cell Temp022(℃)	RO	I32	0.1	Real data	
4	30567	Cell Temp023(℃)	RO	I32	0.1	Real data	
4	30569	Cell Temp024(℃)	RO	I32	0.1	Real data	
4	30571	Cell Temp025(℃)	RO	I32	0.1	Real data	
4	30573	Cell Temp026(℃)	RO	I32	0.1	Real data	
4	30575	Cell Temp027(℃)	RO	I32	0.1	Real data	
4	30577	Cell Temp028(℃)	RO	I32	0.1	Real data	
4	30579	Cell Temp029(℃)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30581	Cell Temp030(℃)	RO	I32	0.1	Real data	
4	30583	Cell Temp031(℃)	RO	I32	0.1	Real data	
4	30585	Cell Temp032(℃)	RO	I32	0.1	Real data	
4	30587	Cell Temp033(℃)	RO	I32	0.1	Real data	
4	30589	Cell Temp034(℃)	RO	I32	0.1	Real data	
4	30591	Cell Temp035(℃)	RO	I32	0.1	Real data	
4	30593	Cell Temp036(℃)	RO	I32	0.1	Real data	
4	30595	Cell Temp037(℃)	RO	I32	0.1	Real data	
4	30597	Cell Temp038(℃)	RO	I32	0.1	Real data	
4	30599	Cell Temp039(℃)	RO	I32	0.1	Real data	
4	30601	Cell Temp040(℃)	RO	I32	0.1	Real data	
4	30603	Cell Temp041(℃)	RO	I32	0.1	Real data	
4	30605	Cell Temp042(℃)	RO	I32	0.1	Real data	
4	30607	Cell Temp043(℃)	RO	I32	0.1	Real data	
4	30609	Cell Temp044(℃)	RO	I32	0.1	Real data	
4	30611	Cell Temp045(℃)	RO	I32	0.1	Real data	
4	30613	Cell Temp046(℃)	RO	I32	0.1	Real data	
4	30615	Cell Temp047(℃)	RO	I32	0.1	Real data	
4	30617	Cell Temp048(℃)	RO	I32	0.1	Real data	
4	30619	Cell Temp049(℃)	RO	I32	0.1	Real data	
4	30621	Cell Temp050(℃)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30623	Cell Temp051(℃)	RO	I32	0.1	Real data	
4	30625	Cell Temp052(℃)	RO	I32	0.1	Real data	
4	30627	Cell Temp053(℃)	RO	I32	0.1	Real data	
4	30629	Cell Temp054(℃)	RO	I32	0.1	Real data	
4	30631	Cell Temp055(℃)	RO	I32	0.1	Real data	
4	30633	Cell Temp056(℃)	RO	I32	0.1	Real data	
4	30635	Cell Temp057(℃)	RO	I32	0.1	Real data	
4	30637	Cell Temp058(℃)	RO	I32	0.1	Real data	
4	30639	Cell Temp059(℃)	RO	I32	0.1	Real data	
4	30641	Cell Temp060(℃)	RO	I32	0.1	Real data	
4	30643	Cell Temp061(℃)	RO	I32	0.1	Real data	
4	30645	Cell Temp062(℃)	RO	I32	0.1	Real data	
4	30647	Cell Temp063(℃)	RO	I32	0.1	Real data	
4	30649	Cell Temp064(℃)	RO	I32	0.1	Real data	
4	30651	Cell Temp065(℃)	RO	I32	0.1	Real data	
4	30653	Cell Temp066(℃)	RO	I32	0.1	Real data	
4	30655	Cell Temp067(℃)	RO	I32	0.1	Real data	
4	30657	Cell Temp068(℃)	RO	I32	0.1	Real data	
4	30659	Cell Temp069(℃)	RO	I32	0.1	Real data	
4	30661	Cell Temp070(℃)	RO	I32	0.1	Real data	
4	30663	Cell Temp071(℃)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30665	Cell Temp072(℃)	RO	I32	0.1	Real data	
4	30667	Cell Temp073(℃)	RO	I32	0.1	Real data	
4	30669	Cell Temp074(℃)	RO	I32	0.1	Real data	
4	30671	Cell Temp075(℃)	RO	I32	0.1	Real data	
4	30673	Cell Temp076(℃)	RO	I32	0.1	Real data	
4	30675	Cell Temp077(℃)	RO	I32	0.1	Real data	
4	30677	Cell Temp078(℃)	RO	I32	0.1	Real data	
4	30679	Cell Temp079(℃)	RO	I32	0.1	Real data	
4	30681	Cell Temp080(℃)	RO	I32	0.1	Real data	
4	30683	Cell Temp081(℃)	RO	I32	0.1	Real data	
4	30685	Cell Temp082(℃)	RO	I32	0.1	Real data	
4	30687	Cell Temp083(℃)	RO	I32	0.1	Real data	
4	30689	Cell Temp084(℃)	RO	I32	0.1	Real data	
4	30691	Cell Temp085(℃)	RO	I32	0.1	Real data	
4	30693	Cell Temp086(℃)	RO	I32	0.1	Real data	
4	30695	Cell Temp087(℃)	RO	I32	0.1	Real data	
4	30697	Cell Temp088(℃)	RO	I32	0.1	Real data	
4	30699	Cell Temp089(℃)	RO	I32	0.1	Real data	
4	30701	Cell Temp090(℃)	RO	I32	0.1	Real data	
4	30703	Cell Temp091(℃)	RO	I32	0.1	Real data	
4	30705	Cell Temp092(℃)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30707	Cell Temp093(℃)	RO	I32	0.1	Real data	
4	30709	Cell Temp094(℃)	RO	I32	0.1	Real data	
4	30711	Cell Temp095(℃)	RO	I32	0.1	Real data	
4	30713	Cell Temp096(℃)	RO	I32	0.1	Real data	
4	30715	Cell Temp097(℃)	RO	I32	0.1	Real data	
4	30717	Cell Temp098(℃)	RO	I32	0.1	Real data	
4	30719	Cell Temp099(℃)	RO	I32	0.1	Real data	
4	30721	Cell Temp100(℃)	RO	I32	0.1	Real data	
4	30723	Cell Temp101(℃)	RO	I32	0.1	Real data	
4	30725	Cell Temp102(℃)	RO	I32	0.1	Real data	
4	30727	Cell Temp103(℃)	RO	I32	0.1	Real data	
4	30729	Cell Temp104(℃)	RO	I32	0.1	Real data	
4	30731	Cell Temp105(℃)	RO	I32	0.1	Real data	
4	30733	Cell Temp106(℃)	RO	I32	0.1	Real data	
4	30735	Cell Temp107(℃)	RO	I32	0.1	Real data	
4	30737	Cell Temp108(℃)	RO	I32	0.1	Real data	
4	30739	Cell Temp109(℃)	RO	I32	0.1	Real data	
4	30741	Cell Temp110(℃)	RO	I32	0.1	Real data	
4	30743	Cell Temp111(℃)	RO	I32	0.1	Real data	
4	30745	Cell Temp112(℃)	RO	I32	0.1	Real data	
4	30747	Cell Temp113(℃)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30749	Cell Temp114(℃)	RO	I32	0.1	Real data	
4	30751	Cell Temp115(℃)	RO	I32	0.1	Real data	
4	30753	Cell Temp116(℃)	RO	I32	0.1	Real data	
4	30755	Cell Temp117(℃)	RO	I32	0.1	Real data	
4	30757	Cell Temp118(℃)	RO	I32	0.1	Real data	
4	30759	Cell Temp119(℃)	RO	I32	0.1	Real data	
4	30761	Cell Temp120(℃)	RO	I32	0.1	Real data	
4	30763	Cell Temp121(℃)	RO	I32	0.1	Real data	
4	30765	Cell Temp122(℃)	RO	I32	0.1	Real data	
4	30767	Cell Temp123(℃)	RO	I32	0.1	Real data	
4	30769	Cell Temp124(℃)	RO	I32	0.1	Real data	
4	30771	Cell Temp125(℃)	RO	I32	0.1	Real data	
4	30773	Cell Temp126(℃)	RO	I32	0.1	Real data	
4	30775	Cell Temp127(℃)	RO	I32	0.1	Real data	
4	30777	Cell Temp128(℃)	RO	I32	0.1	Real data	
4	30779	Cell Temp129(℃)	RO	I32	0.1	Real data	
4	30781	Cell Temp130(℃)	RO	I32	0.1	Real data	
4	30783	Cell Temp131(℃)	RO	I32	0.1	Real data	
4	30785	Cell Temp132(℃)	RO	I32	0.1	Real data	
4	30787	Cell Temp133(℃)	RO	I32	0.1	Real data	
4	30789	Cell Temp134(℃)	RO	I32	0.1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30791	Cell Temp135(℃)	RO	I32	0.1	Real data	
4	30793	Cell Temp136(℃)	RO	I32	0.1	Real data	
4	30795	Cell Temp137(℃)	RO	I32	0.1	Real data	
4	30797	Cell Temp138(℃)	RO	I32	0.1	Real data	
4	30799	Cell Temp139(℃)	RO	I32	0.1	Real data	
4	30801	Cell Temp140(℃)	RO	I32	0.1	Real data	
4	30803	Terminal Temp1+(℃)	RO	I32	0.1	Real data	
4	30805	Terminal Temp2+(℃)	RO	I32	0.1	Real data	
4	30807	Terminal Temp3+(℃)	RO	I32	0.1	Real data	
4	30809	Terminal Temp4+(℃)	RO	I32	0.1	Real data	
4	30811	Terminal Temp5+(℃)	RO	I32	0.1	Real data	
4	30813	Terminal Temp1-(℃)	RO	I32	0.1	Real data	
4	30815	Terminal Temp2-(℃)	RO	I32	0.1	Real data	
4	30817	Terminal Temp3-(℃)	RO	I32	0.1	Real data	
4	30819	Terminal Temp4-(℃)	RO	I32	0.1	Real data	
4	30821	Terminal Temp5-(℃)	RO	I32	0.1	Real data	

6. Liquid Cooling Unit Register Definitions

Address code: 170

Table 6-1 Liquid Cooling Unit Register Definitions

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
2	10001	Coolant outlet high temperature alarm	RO	BOOL	1	Alarm	0:Normal; 1:Fault; 255:Alarm disabled
2	10002	Coolant outlet low temperature alarm	RO	BOOL	1	Alarm	0:Normal; 1:Fault; 255:Alarm disabled
2	10003	Coolant outlet temperature sensor fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault; 255:Alarm disabled
2	10004	Coolant inlet temperature sensor fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault; 255:Alarm disabled
2	10005	Variable-frequency drive communication failure	RO	BOOL	1	Alarm	0:Normal; 1:Fault; 255:Alarm disabled
2	10006	System high pressure lockout alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10007	System low pressure lockout alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10008	High discharge temperature lockout alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10009	Variable-frequency drive overcurrent	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
		lockout alarm					disabled
2	10010	Variable-frequency drive overtemperature lockout alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10011	Variable-frequency drive overvoltage lockout alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10012	Variable-frequency drive undervoltage lockout alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10013	Variable-frequency drive phase loss lockout alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10014	Variable-frequency drive other fault lockout alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10015	Low coolant level	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10016	Coolant outlet high pressure alarm	RO	BOOL	1	Alarm	0:Normal; 1:Latched; 255:Alarm disabled
2	10018	Water replenishment tank alarm	RO	BOOL	1	Alarm	0:normal; 1:lock; 255:enable
4	30001	Online	RO	I32	1	Real data	0:Offline; 1:Online;
4	30003	Current System Mode	RO	I32	1	Real data	0:Stop; 1:Internal Circulation; 2:Cooling; 3:Heating; 4:Full Auto
4	30005	Coolant inlet temperature(℃)	RO	I32	0.1	Real data	3276.7: No communica

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
							tion
4	30007	Coolant outlet temperature(℃)	RO	I32	0.1	Real data	3276.7: No communication
4	30017	Ambient Temperature(℃)	RO	I32	0.1	Real data	3276.7: No communication
4	30019	Coolant Inlet Pressure(Bar)	RO	I32	0.01	Real data	3276.7: No communication
4	30021	Coolant Outlet Pressure(Bar)	RO	I32	0.01	Real data	3276.7: No communication
4	30023	Current Highest Alarm Level	RO	I32	1	Real data	0:No alarm; 1:Critical; 2:Medium; 3:Normal
4	30025	Pump Current Speed	RO	I32	0.1	Real data	
4	30027	Pump Status	RO	I32	1	Real data	0:Off; 1:On
4	30029	Heartbeat	RO	I32	1	Real data	
4	30031	Compressor Status	RO	I32	1	Real data	0:Off; 1:On
4	30033	Software Code	RO	I32	1	Real data	
4	30035	Software Version	RO	I32	1	Real data	
4	30037	Compressor Total Runtime(Hours)	RO	I32	1	Real data	
4	30039	Compressor Start Count	RO	I32	1	Real data	
4	30041	Heater Total Runtime(Hours)	RO	I32	1	Real data	
4	30043	Heater Start Count	RO	I32	1	Real data	
4	30045	Pump Total Runtime(Hours)	RO	I32	1	Real data	
4	30047	Pump Start Count	RO	I32	1	Real data	
4	30049	External Fan Total Runtime(Hours)	RO	I32	1	Real data	

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30051	External Fan Start Count	RO	I32	1	Real data	
4	30053	Current Protocol Control Mode	RO	I32	1	Real data	0:modbus mode; 1:can mode
4	30055	System Power On/Off	RO	I32	1	Real data	0:Shutdown ; 1:Startup
4	30057	Mode Setting	RO	I32	1	Real data	0:Stop; 1:Internal Circulation; 2:Cooling; 3:Heating; 4:Full Auto
4	30059	Control Temp Selection	RO	I32	1	Real data	0:Cell Average Temp; 1:Outlet Temp; 2:Return Temp; 3:Cell Weighted Temp
4	30061	Battery Operation Status	RO	I32	1	Real data	0:Not running; 1:Running
4	30063	Cooling Setpoint(℃)	RO	I32	0.1	Real data	
4	30065	Heating Setpoint(℃)	RO	I32	0.1	Real data	
4	30067	Cooling Differential(℃)	RO	I32	0.1	Real data	
4	30069	Heating Differential(℃)	RO	I32	0.1	Real data	
4	30071	Pump Gear Selection	RO	I32	1	Real data	0:Default; 1:Gear 1; 2:Gear 2; 3:Gear 3
4	30073	ID	RO	I32	1	Real data	
4	30075	Baud Rate(bps)	RO	I32	1	Real data	2:4800; 3:9600; 4:19200;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
							5:38400; 6:57600
4	30077	Compressor Gear Selection	RO	I32	1	Real data	0:Default; 1:Gear 1; 2:Gear 2; 3:Gear 3
4	30079	Protocol Control Mode Selection	RO	I32	1	Real data	0:modbus mode; 1:can mode
4	30081	Cell Operation Cooling Setpoint(℃)	RO	I32	0.1	Real data	
4	30083	Cell Temp Cooling Stop Point(℃)	RO	I32	0.1	Real data	
4	30085	Cell Operation Heating Setpoint(℃)	RO	I32	0.1	Real data	
4	30087	Cell Temp Heating Stop Point(℃)	RO	I32	0.1	Real data	
4	30089	Battery Standby Cooling Setpoint(℃)	RO	I32	0.1	Real data	
4	30091	Cell Temp Self-circulation Start Diff(℃)	RO	I32	0.1	Real data	
4	30093	Cell Temp Self-circulation Stop Diff(℃)	RO	I32	0.1	Real data	
4	30095	Minimum Allowed Cell Temp(℃)	RO	I32	0.1	Real data	
4	30097	Maximum Allowed Cell Temp(℃)	RO	I32	0.1	Real data	
4	30099	Mute Mode Enable	RO	I32	1	Real data	0:Off;1:On
4	30101	Mute Mode External Fan Speed Limit(%)	RO	I32	1	Real data	
4	30105	AutoStartOn	RO	I32	1	Real data	0:start up;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
							1:holding;2: close down;

7. Other Register Definitions

Address code: 172

Table 7-1 Dehumidifier Register Definitions

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
2	10501	Fan module circuit fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault
2	10502	Dehumidification module circuit fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault
2	10503	Humidity sensor fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault
2	10504	External temperature sensor fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault
2	10505	Internal temperature sensor fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault
2	10506	High temperature alarm fault	RO	BOOL	1	Alarm	0:Normal; 1:Fault
4	30501	Online	RO	I32	1	Real data	0:Offline; 1:Online;
4	30503	Humidity Control Circuit Status	RO	I32	1	Real data	0:Stop; 1:Start
4	30505	Fan Module Circuit Status	RO	I32	1	Real data	0:Normal; 1:Fault
4	30507	Dehumidification Module Circuit Status	RO	I32	1	Real data	0:Normal; 1:Fault
4	30509	Humidity Sensor Status	RO	I32	1	Real data	0:Normal; 1:Fault
4	30511	External Temperature Sensor Status	RO	I32	1	Real data	0:Normal; 1:Fault
4	30513	Internal Temperature Sensor Status	RO	I32	1	Real data	0:Normal; 1:Fault
4	30515	Defrost Status	RO	I32	1	Real data	0:Normal; 1:Defrosting

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30517	High Temperature Alarm	RO	I32	1	Real data	0:Normal; 1:Fault
4	30519	Dew Point Temperature Circuit Working Status	RO	I32	1	Real data	0:Close; 1:Open
4	30521	Internal Temperature Value(℃)	RO	I32	0.1	Real data	
4	30523	Ambient Temperature Value(℃)	RO	I32	0.1	Real data	
4	30525	Ambient Humidity Value(%RH)	RO	I32	0.1	Real data	
4	30527	Dew Point Temperature(℃)	RO	I32	0.1	Real data	
4	30529	Humidity Control Manual Switch	RO	I32	1	Real data	0:Normal; 1:Manual On
4	30531	Humidity Control Start Value(%RH)	RO	I32	0.1	Real data	
4	30533	Humidity Control Stop Value(%RH)	RO	I32	0.1	Real data	
4	30535	Temperature Alarm Upper Limit(℃)	RO	I32	0.1	Real data	
4	30537	Temperature Alarm Lower Limit(℃)	RO	I32	0.1	Real data	
4	30539	Dew Point Temperature Starting Value(℃)	RO	I32	0.1	Real data	
4	30541	Dew Point Temperature Return Difference Value(℃)	RO	I32	0.1	Real data	

Table 7-2 DIDO Register Definitions

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
4	30001	Online	RO	I32	1	Real	0:Offline;1:Online;

Function Code (HEX)	Register Address (DEC)	Signal Name	Read/ Write	Data Type	Coeff.	Attr.	Explanation
						data	
4	30003	Smoke alarm	RO	I32	1	Real data	0:Normal;1:Alarm;
4	30005	Temp alarm	RO	I32	1	Real data	0:Normal;1:Alarm;
4	30007	Exhaust fan status	RO	I32	1	Real data	0:Off;1:On;
4	30009	Intake fan status	RO	I32	1	Real data	0:Off;1:On;
4	30011	Door access	RO	I32	1	Real data	0:Closed;1:Open;
4	30013	EPO	RO	I32	1	Real data	0:Normal;1:Alarm;
4	30015	QF1 AC breaker status	RO	I32	1	Real data	0:Closed;1:Open;
4	30017	AC SPD fault	RO	I32	1	Real data	0:Normal;1:Alarm;
4	30019	Water leakage	RO	I32	1	Real data	0:Normal;1:Alarm;
4	30021	External fire alarm	RO	I32	1	Real data	0:Normal;1:Alarm;
4	30023	Green indicator	RO	I32	1	Real data	0:Off;1:On;
4	30025	Yellow indicator	RO	I32	1	Real data	0:Off;1:On;
4	30027	Red indicator	RO	I32	1	Real data	0:Off;1:On;
4	30029	Flash buzzer	RO	I32	1	Real data	0:Normal;1:Trigger;
4	30031	Intake/Exhaust fan	RO	I32	1	Real data	0:Off;1:On;
4	30033	Cooling fan	RO	I32	1	Real data	0:Off;1:On;
4	30035	EMS EPO	RO	I32	1	Real data	0:Normal;1:Trigger;
4	30037	Fire alarm	RO	I32	1	Real data	0:Normal;1:Trigger;