1. Overview

This document contains the Modbus-TCP protocol data bit information forwarded by the BCQ system. The applicable all-in-one ESS model is: NE233L.

All data is forwarded on the same channel, with a default forwarding port number of 3200 and a default device address of 1.

Date	Version	Content
2024-01-01	1.0	Start Publishing
2024-11-21	1.1	2.4/3.4 Add new supplementary information

2. PCS data forwarding

2.1. read coil

Function code: 0x01

Description	Modbus address (decimal)
Overall fault bit	1
On-/off-grid run bit	2
Overall PCS alarm	3
PCS comm status	4

2.2. holding register

Function code: read 0x03, write 0x06

Modbus address		Data		
(decimal)	Rate	Type	Unit	Description
5001	1	INT16		1: Off-gird mode enabled; 0: on-grid enabled
5002	1	INT16		1: current source mode; 0: DC voltage source mode;
5003	1	INT16		1: On; 0: Off;
5004	1	INT16		Write 32768 to reset
5005	10	INT16	0 1kW	Only can be set under on-grid mode; Positive indicates discharging, negative indicates charging
	5001 5002 5003	(decimal) Rate 5001 1 5002 1 5003 1 5004 1	(decimal) Rate Type 5001 1 INT16 5002 1 INT16 5003 1 INT16 5004 1 INT16	(decimal) Rate Type Unit 5001 1 INT16 5002 1 INT16 5003 1 INT16 5004 1 INT16

2.3. input register

Description	Modbus address (decimal)	Rate	Data Type	Unit	Description
PCS AC current la RMS value	1	10	INT16	0.1A	

PCS AC current lb RMS		40			
value	2	10	INT16	0.1A	
PCS AC current Ic RMS		10			
value	3	10	INT16	0.1A	
PoC line voltage Uab RMS		10		0.01	
value	4		INT16	0.1V	
PoC line voltage Ubc RMS	_	10	INITAC	0.41/	
value	5		INT16	0.1V	
PoC line voltage Uca RMS value	6	10	INT16	0.1V	
DC bus overall voltage	7	10	INT16	0.1V	
DC current	8	10	INT16	0.1A	
	9	10	INT16	0.1A 0.1kW	
AC active power					
AC reactive power	10	10	INT16	0.1KVar	
power factor	11	100	INT16		
DC power	12	10	INT16	0.1kW	
Grid frequency	13	100	INT16	0.01Hz	
Charge and discharge power		10			
setting	14	10	INT16	0.1kW	
Reactive power setting	15	10	INT16	0.1kVar	
Forward operation status	16	1	INT16		见 2.4-9
Hardware fault word 1	17	1	INT16		见 2.4-1
Hardware fault word 2	18	1	INT16		见 2.4-2
Grid fault word	19	1	INT16		见 2.4-3
Bus fault word	20	1	INT16		见 2.4-4
AC capacitor fault word	21	1	INT16		见 2.4-5
System fault word	22	1	INT16		见 2.4-6
Switch fault word	23	1	INT16		见 2.4-7
Other fault word	24	1	INT16		见 2.4-8

2.4. Supplement

1. Hardware fault word 1

bit0 -- EPO fault flag;

bit1 -- IGBThardware over-current flag;

bit2 -- bus hardware over-voltage flag;

bit4 -- Power module wave-by-wave current limit flag;

Bit5 -- Balancing module hardware over-current flag;

1 For fault, 0 for normal; other are reserved;

2. Hardware fault word 2

bit0 -- 24V power fault flag;

bit1 -- fan fault flag;

bit2 -- connection fault flag;

bit6 -- SPD fault;

Bit7 --inductor over-temperature fault flag;

bit8 -- Power module over-temperature flag;

Bit9 -- Balancing module over-temperature flag;

bit10 -- 15V power fault flag;

bit11 -- System fire alarm fault flag;

```
bit12 -- Battery dry contact fault flag;
bit13 -- Dry contact overload fault flag;
bit14 -- Ambient temperature over-temperature fault flag;
bit15 -- Dry contact over-temperature fault flag;
1 For fault, 0 for normal; other are reserved;
```

3. Power grid fault word

```
bit0 -- APhase over-voltage fault flag;
bit1 - B Phase over-voltage fault flag;
bit2 - C Phase over-voltage fault flag;
bit3 -- APhase under-voltage fault flag;
bit4 -- B Phase under-voltage fault flag;
bit5 -- C Phase under-voltage fault flag;
bit6 -- Grid over-frequency;
bit7 -- Grid under-frequency;
bit8 -- Grid wrong phase sequence;
bit9 -- APhase software over-current;
bit10 -- BPhase software over-current;
bit11 -- CPhase software over-current;
bit12 -- Grid voltage imbalance;
bit13 -- Grid current imbalance;
Bit14 -- Grid missing phase;
bit15 -- N Line over-current;
1 For fault, 0 for normal; other are reserved;
```

4. bus fault word

```
bit0 -- pre-charge bus over-voltage;
bit1 -- Pre-charge bus under-voltage;;
bit2 -- uncontrolled rectification bus over-voltage;
bit3 -- uncontrolled rectification bus under-voltage;
Bit4 -- operation bus over-voltage;
bit5 -- operation bus under-voltage;
bit6 -- imbalance between positive and negative buses;
bit7 -- battery under-voltage;
bit8 -- current mode bus under-voltage;
bit9 -- battery over-voltage;
bit10 -- DC pre-charge over-current;
bit11 -- DC over-current;
bit12 -- Balancing module software over-current;
bit15 -- Battery reverse connection;
1For fault, 0 for normal; other are reserved;
```

5. AC capacitor fault word

```
Bit0 -- Pre-charge timeout;
Bit1 -- pre-charge Aphase overflow;
Bit2 -- pre-charge B phase overflow;
Bit3 -- pre-charge C Phase overflow.

1 For fault, 0 for normal; other are reserved;
```

6. System fault word

```
bit2 --AD Sampling zero-drift fault;
bit11 -- BMS Battery system fault;
bit12 -- STS communication fault;
bit13 -- BMS communication fault;
bit14 -- slave module CAN communication fault;
bit15 -- EMS communication fault;
1 For fault, 0 for normal; other are reserved;
```

7. Switch fault word

```
Bit0 -- Pre-charge relay failed to close;
Bit1 -- Pre-charge relay failed to disconnect;
Bit2 -- Pre-charge relay closing status error;
Bit3 -- Pre-charge relay disconnection status error;
Bit4 -- Main relay failed to close;
Bit5 -- Main relay failed to disconnect;
Bit6 -- Main relay closing status error;
Bit7 -- Main relay disconnection status error;
Bit8 -- AC main relay adhesion fault;
Bit9 -- DC relay open-circuit fault;
1 For fault, 0 for normal; other are reserved;
```

8. Other fault word

```
Bit0 --inverter voltage A Phase over-voltage fault flag;
Bit1 -- inverter voltage B Phase over-voltage fault flag;
Bit2 -- inverter voltage C Phase over-voltage fault flag;
Bit3 -- islanding fault flag;
Bit5 -- System resonance fault flag;
Bit6 -- Software over-voltage and over-current flag;
Bit8 -- HVRT timeout fault flag;
Bit9 -- inverter voltage A Phase under-voltage fault flag;
Bit10 -- inverter voltage B Phase under-voltage fault flag;
Bit11 -- inverter voltage C Phase under-voltage fault flag;
Bit12 -- off-grid no synchronization signal failure flag;
Bit14 -- off-grid short circuit fault flag;
Bit15 -- LVRT timeout fault flag;
```

1 For fault, 0 for normal; other are reserved;

9. Forwarding operational status

```
0 – shutdown;
1 -- standby;
2 -- charge;
3 -- discharge;
It's not bit , it's decimal
```

Instructions

- A. If the AC main relay adhesion fault, DC relay open circuit fault, AC main relay open circuit fault and other faults, please contact the manufacturer in time; If it is powered off, do not power it on again.
- B. Hardware fault words 1, hardware fault words 2 (except SPD fault, power module over temperature fault) need to be powered off and reset.
- C. Battery voltage fault, battery over voltage fault, battery reverse connection fault, power module
- D. Over temperature fault, after fault recovery, you can automatically reset;

For other faults (all faults except A, B, and C), when the module is shut down (after the shutdown command is sent), the module can be reset by sending the fault reset command.

3. BMS data forwarding

3.1. read coil

	Modbus address
Description	(decimal)

group terminal over-voltage level 1 alarm group terminal over-voltage level 2 alarm group terminal over-voltage level 3 alarm group terminal under-voltage level 3 alarm group terminal under-voltage level 2 alarm group terminal under-voltage level 3 alarm group terminal under-voltage level 3 alarm group terminal discharge over-current level 1 alarm group terminal discharge over-current level 2 alarm group terminal discharge over-current level 2 alarm group terminal discharge over-current level 3 alarm group terminal charging over-current level 2 alarm group terminal charging over-current level 2 alarm group terminal charging over-current level 3 alarm group terminal charging over-current level 3 alarm group terminal insulation level 1 alarm group terminal insulation level 2 alarm group terminal insulation level 3 alarm 115 cell charging over-temperature level 3 alarm 116 cell charging over-temperature level 3 alarm 117 cell charging over-temperature level 3 alarm 118 cell charging over-temperature level 2 alarm 119 cell charging under-temperature level 3 alarm 119 cell charging under-temperature level 3 alarm 120 cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 1 alarm 122 Cell voltage over-voltage level 3 alarm 124 Cell voltage over-voltage level 3 alarm 125 Cell voltage over-voltage level 3 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage level 3 alarm 128 Cell voltage under-voltage level 3 alarm 129 Cell voltage over-voltage level 3 alarm 120 Cell voltage over-voltage difference level 1 alarm 128 Cell voltage over-voltage-difference level 1 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 3 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 Low SOC level 3 alarm 134 Low SOC level 3 alarm 135 Low SOC level 3 alarm 136 Dow SOC level 3 alarm 137 Dower plug-in box over-temperature level 3 alarm 140 Battery modu		
group terminal over-voltage level 3 alarm 103 group terminal under-voltage level 2 alarm 104 group terminal under-voltage level 2 alarm 105 group terminal under-voltage level 2 alarm 106 group terminal discharge over-current level 1 alarm 107 group terminal discharge over-current level 2 alarm 108 group terminal discharge over-current level 2 alarm 109 group terminal charging over-current level 3 alarm 109 group terminal charging over-current level 2 alarm 110 group terminal charging over-current level 3 alarm 110 group terminal charging over-current level 3 alarm 111 group terminal insulation level 1 alarm 112 group terminal insulation level 2 alarm 114 group terminal insulation level 3 alarm 115 cell charging over-temperature level 3 alarm 116 cell charging over-temperature level 3 alarm 117 cell charging over-temperature level 3 alarm 118 cell charging over-temperature level 3 alarm 118 cell charging over-temperature level 3 alarm 118 cell charging over-temperature level 3 alarm 119 cell charging under-temperature level 2 alarm 120 cell charging under-temperature level 3 alarm 120 cell charging under-temperature level 3 alarm 120 cell charging under-temperature level 3 alarm 120 Cell voltage over-voltage level 1 alarm 122 Cell voltage over-voltage level 2 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage over-voltage level 3 alarm 125 Cell voltage under-voltage level 3 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage level 3 alarm 126 Cell voltage over-voltage-difference level 1 alarm 126 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 3 alarm 130 Cell voltage over-temperature-difference level 3 alarm 131 Cell voltage over-temperature-difference level 3 alarm 133 Iow SOC level 3 alarm 134 Iow SOC level 3 alarm 135 Iow SOC level 3 alarm 136 Dower plug-in box over-temperature level 2 alarm 139 Battery module over-voltage level 2 alarm 140 Battery mod	group terminal over-voltage level 1 alarm	101
group terminal under-voltage level 1 alarm 104 group terminal under-voltage level 2 alarm 105 group terminal discharge over-current level 1 alarm 107 group terminal discharge over-current level 2 alarm 108 group terminal discharge over-current level 2 alarm 108 group terminal discharge over-current level 3 alarm 109 group terminal charging over-current level 3 alarm 109 group terminal charging over-current level 3 alarm 110 group terminal charging over-current level 2 alarm 111 group terminal charging over-current level 3 alarm 112 group terminal insulation level 1 alarm 113 group terminal insulation level 2 alarm 114 group terminal insulation level 3 alarm 115 cell charging over-temperature level 2 alarm 116 cell charging over-temperature level 2 alarm 117 cell charging over-temperature level 2 alarm 118 cell charging over-temperature level 3 alarm 118 cell charging under-temperature level 3 alarm 119 cell charging under-temperature level 3 alarm 120 cell voltage over-voltage level 1 alarm 120 cell voltage over-voltage level 3 alarm 121 Cell voltage over-voltage level 3 alarm 122 Cell voltage over-voltage level 3 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 3 alarm 125 Cell voltage under-voltage level 3 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage-difference level 1 alarm 128 Cell voltage under-voltage-difference level 3 alarm 129 Cell voltage over-voltage-difference level 3 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 2 alarm 131 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 3 alarm 134 low SOC level 3 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 2 alarm 137 power plug-in box over-temperature level 3 alarm 138 Battery module over-voltage level 3 alarm 140 Battery module over-voltage level 3 alarm 141		
group terminal under-voltage level 2 alarm 106 group terminal discharge over-current level 1 alarm 107 group terminal discharge over-current level 2 alarm 108 group terminal discharge over-current level 2 alarm 109 group terminal discharge over-current level 3 alarm 109 group terminal discharge over-current level 3 alarm 109 group terminal charging over-current level 3 alarm 110 group terminal charging over-current level 2 alarm 111 group terminal charging over-current level 3 alarm 112 group terminal insulation level 1 alarm 113 group terminal insulation level 2 alarm 114 group terminal insulation level 2 alarm 115 cell charging over-temperature level 3 alarm 116 cell charging over-temperature level 2 alarm 117 cell charging over-temperature level 2 alarm 118 cell charging over-temperature level 3 alarm 119 cell charging under-temperature level 3 alarm 119 cell charging under-temperature level 2 alarm 120 cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 3 alarm 122 Cell voltage over-voltage level 3 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage over-voltage level 3 alarm 125 Cell voltage under-voltage level 3 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage level 3 alarm 128 Cell voltage under-voltage level 3 alarm 129 Cell voltage over-voltage-difference level 1 alarm 129 Cell voltage over-voltage-difference level 1 alarm 120 Cell voltage over-voltage-difference level 2 alarm 121 Cell voltage over-voltage-difference level 3 alarm 122 Cell voltage over-temperature-difference level 2 alarm 130 Cell voltage over-temperature-difference level 3 alarm 131 Cell voltage over-temperature-difference level 3 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 3 alarm 134 low SOC level 3 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 3 alarm 137 power plug-in box over-temperature level 3 alarm 138 Battery module over-voltage level 2 alarm 140 Battery module over-voltage level		
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group terminal discharge over-current level 2 alarm group terminal discharge over-current level 3 alarm group terminal charging over-current level 3 alarm group terminal charging over-current level 2 alarm group terminal charging over-current level 3 alarm group terminal charging over-current level 3 alarm group terminal insulation level 1 alarm group terminal insulation level 1 alarm group terminal insulation level 2 alarm group terminal insulation level 3 alarm 115 cell charging over-temperature level 2 alarm 116 cell charging over-temperature level 3 alarm 117 cell charging over-temperature level 3 alarm 118 cell charging under-temperature level 3 alarm 120 cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 2 alarm 122 Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 3 alarm 125 Cell voltage under-voltage level 3 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 2 alarm 131 Cell voltage over-temperature-difference level 3 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 3 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 2 alarm 137 power plug-in box over-temperature level 3 alarm 138 power plug-in box over-temperature level 3 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm	group terminal under-voltage level 3 alarm	106
group terminal discharge over-current level 3 alarm group terminal charging over-current level 1 alarm group terminal charging over-current level 2 alarm group terminal charging over-current level 2 alarm group terminal insulation level 1 alarm group terminal insulation level 2 alarm group terminal insulation level 2 alarm group terminal insulation level 3 alarm group terminal insulation insulation insulation insulation insulation insulation	group terminal discharge over-current level 1 alarm	107
group terminal charging over-current level 1 alarm group terminal charging over-current level 2 alarm group terminal charging over-current level 2 alarm group terminal insulation level 1 alarm group terminal insulation level 2 alarm group terminal insulation level 2 alarm group terminal insulation level 3 alarm group termina	group terminal discharge over-current level 2 alarm	108
group terminal charging over-current level 2 alarm group terminal charging over-current level 3 alarm group terminal insulation level 1 alarm group terminal insulation level 2 alarm group terminal insulation level 2 alarm group terminal insulation level 3 alarm 116 cell charging over-temperature level 1 alarm 117 cell charging over-temperature level 3 alarm 118 cell charging under-temperature level 1 alarm 119 cell charging under-temperature level 2 alarm 120 cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 1 alarm 122 Cell voltage over-voltage level 2 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 2 alarm 125 Cell voltage under-voltage level 3 alarm 127 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-temperature-difference level 3 alarm 130 Cell voltage over-temperature-difference level 3 alarm 131 Cell voltage over-temperature-difference level 3 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 2 alarm 140 Battery module over-voltage level 3 alarm 142	group terminal discharge over-current level 3 alarm	109
group terminal charging over-current level 3 alarm group terminal insulation level 1 alarm group terminal insulation level 2 alarm group terminal insulation level 2 alarm group terminal insulation level 3 alarm tell charging over-temperature level 1 alarm tell charging over-temperature level 2 alarm tell charging over-temperature level 3 alarm tell charging under-temperature level 2 alarm tell charging under-temperature level 3 alarm tell charging under-temperature level 3 alarm tell voltage over-voltage level 1 alarm tell voltage over-voltage level 2 alarm tell voltage over-voltage level 3 alarm tell voltage over-voltage level 3 alarm tell voltage under-voltage level 3 alarm tell voltage under-voltage level 3 alarm tell voltage over-voltage level 3 alarm tell voltage over-voltage-difference level 1 alarm tell voltage over-voltage-difference level 3 alarm tell voltage over-voltage-difference level 3 alarm tell voltage over-temperature-difference level 3 alarm tow SOC level 1 alarm low SOC level 2 alarm 133 low SOC level 3 alarm power plug-in box over-temperature level 1 alarm 134 low SOC level 3 alarm power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 2 alarm 140 Battery module over-voltage level 3 alarm 141	group terminal charging over-current level 1 alarm	110
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cell charging over-temperature level 1 alarm cell charging over temperature level 2 alarm cell charging over-temperature level 3 alarm cell charging under-temperature level 1 alarm cell charging under-temperature level 2 alarm cell charging under-temperature level 3 alarm 120 cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 1 alarm 122 Cell voltage over-voltage level 2 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage over-voltage level 3 alarm 125 Cell voltage under-voltage level 1 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage level 3 alarm 128 Cell voltage over-voltage-difference level 1 alarm 129 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 3 alarm 141 Battery module over-voltage level 3 alarm	group terminal insulation level 2 alarm	114
cell charging over temperature level 2 alarm cell charging over-temperature level 3 alarm cell charging under-temperature level 1 alarm cell charging under-temperature level 2 alarm 120 cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 1 alarm 122 Cell voltage over-voltage level 2 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 3 alarm 125 Cell voltage under-voltage level 3 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage level 3 alarm 128 Cell voltage under-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-voltage-difference level 3 alarm 131 Cell voltage over-temperature-difference level 3 alarm 132 Cell voltage over-temperature-difference level 3 alarm 131 Cell voltage over-temperature-difference level 3 alarm 132 Cell voltage over-temperature-difference level 3 alarm 137 low SOC level 1 alarm 138 low SOC level 2 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 3 alarm 141 Battery module over-voltage level 3 alarm 142	group terminal insulation level 3 alarm	115
cell charging over-temperature level 3 alarm cell charging under-temperature level 1 alarm cell charging under-temperature level 2 alarm cell charging under-temperature level 3 alarm 120 cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 1 alarm 122 Cell voltage over-voltage level 2 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 3 alarm 125 Cell voltage under-voltage level 2 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-voltage-difference level 3 alarm 131 Cell voltage over-temperature-difference level 3 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 3 alarm 138 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 3 alarm 141 Battery module over-voltage level 3 alarm	cell charging over-temperature level 1 alarm	116
cell charging under-temperature level 1 alarm cell charging under-temperature level 2 alarm cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 1 alarm 122 Cell voltage over-voltage level 2 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 3 alarm 125 Cell voltage under-voltage level 2 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage level 3 alarm 127 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 Battery module over-voltage level 2 alarm 140 Battery module over-voltage level 3 alarm 142	cell charging over temperature level 2 alarm	117
cell charging under-temperature level 2 alarm cell charging under-temperature level 3 alarm 121 Cell voltage over-voltage level 1 alarm 122 Cell voltage over-voltage level 2 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 3 alarm 125 Cell voltage under-voltage level 1 alarm 126 Cell voltage under-voltage level 2 alarm 127 Cell voltage under-voltage level 3 alarm 127 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 3 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm	cell charging over-temperature level 3 alarm	118
cell charging under-temperature level 3 alarm Cell voltage over-voltage level 1 alarm 123 Cell voltage over-voltage level 2 alarm 124 Cell voltage over-voltage level 3 alarm 125 Cell voltage under-voltage level 1 alarm 126 Cell voltage under-voltage level 2 alarm 127 Cell voltage under-voltage level 3 alarm 128 Cell voltage under-voltage level 3 alarm 127 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm	cell charging under-temperature level 1 alarm	119
Cell voltage over-voltage level 1 alarm Cell voltage over-voltage level 2 alarm 123 Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 1 alarm 125 Cell voltage under-voltage level 2 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage level 3 alarm 128 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm	cell charging under-temperature level 2 alarm	120
Cell voltage over-voltage level 2 alarm Cell voltage over-voltage level 3 alarm 124 Cell voltage under-voltage level 1 alarm 125 Cell voltage under-voltage level 2 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage under-voltage level 3 alarm 128 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm	cell charging under-temperature level 3 alarm	121
Cell voltage over-voltage level 3 alarm Cell voltage under-voltage level 1 alarm 125 Cell voltage under-voltage level 2 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 3 alarm 141 Battery module over-voltage level 3 alarm	Cell voltage over-voltage level 1 alarm	122
Cell voltage under-voltage level 1 alarm Cell voltage under-voltage level 2 alarm 126 Cell voltage under-voltage level 3 alarm 127 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 2 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm	Cell voltage over-voltage level 2 alarm	123
Cell voltage under-voltage level 2 alarm Cell voltage under-voltage level 3 alarm 127 Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage over-voltage level 3 alarm	124
Cell voltage under-voltage level 3 alarm Cell voltage over-voltage-difference level 1 alarm 128 Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage under-voltage level 1 alarm	125
Cell voltage over-voltage-difference level 1 alarm Cell voltage over-voltage-difference level 2 alarm 129 Cell voltage over-voltage-difference level 3 alarm 130 Cell voltage over-temperature-difference level 1 alarm 131 Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage under-voltage level 2 alarm	126
Cell voltage over-voltage-difference level 2 alarm Cell voltage over-voltage-difference level 3 alarm Cell voltage over-temperature-difference level 1 alarm Cell voltage over-temperature-difference level 2 alarm Cell voltage over-temperature-difference level 3 alarm 132 Cell voltage over-temperature-difference level 3 alarm low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage under-voltage level 3 alarm	127
Cell voltage over-voltage-difference level 3 alarm Cell voltage over-temperature-difference level 1 alarm Cell voltage over-temperature-difference level 2 alarm 132 Cell voltage over-temperature-difference level 3 alarm low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage over-voltage-difference level 1 alarm	128
Cell voltage over-temperature-difference level 1 alarm Cell voltage over-temperature-difference level 2 alarm Cell voltage over-temperature-difference level 3 alarm low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage over-voltage-difference level 2 alarm	129
Cell voltage over-temperature-difference level 2 alarm Cell voltage over-temperature-difference level 3 alarm 133 low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage over-voltage-difference level 3 alarm	130
Cell voltage over-temperature-difference level 3 alarm low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm power plug-in box over-temperature level 1 alarm power plug-in box over-temperature level 2 alarm power plug-in box over-temperature level 3 alarm Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage over-temperature-difference level 1 alarm	131
low SOC level 1 alarm 134 low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage over-temperature-difference level 2 alarm	132
low SOC level 2 alarm 135 low SOC level 3 alarm 136 power plug-in box over-temperature level 1 alarm 137 power plug-in box over-temperature level 2 alarm 138 power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	Cell voltage over-temperature-difference level 3 alarm	133
low SOC level 3 alarm power plug-in box over-temperature level 1 alarm power plug-in box over-temperature level 2 alarm power plug-in box over-temperature level 3 alarm power plug-in box over-temperature level 3 alarm Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	low SOC level 1 alarm	134
power plug-in box over-temperature level 1 alarm power plug-in box over-temperature level 2 alarm power plug-in box over-temperature level 3 alarm Battery module over-voltage level 1 alarm Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	low SOC level 2 alarm	135
power plug-in box over-temperature level 2 alarm power plug-in box over-temperature level 3 alarm 139 Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	low SOC level 3 alarm	136
power plug-in box over-temperature level 3 alarm Battery module over-voltage level 1 alarm Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	power plug-in box over-temperature level 1 alarm	137
Battery module over-voltage level 1 alarm 140 Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	power plug-in box over-temperature level 2 alarm	138
Battery module over-voltage level 2 alarm 141 Battery module over-voltage level 3 alarm 142	power plug-in box over-temperature level 3 alarm	139
Battery module over-voltage level 3 alarm 142	Battery module over-voltage level 1 alarm	140
	Battery module over-voltage level 2 alarm	141
Battery module under-voltage level 1 alarm 143	Battery module over-voltage level 3 alarm	142
	Battery module under-voltage level 1 alarm	143

D. (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4.4.4
Battery module under-voltage level 2 alarm	144
Battery module under-voltage level 3 alarm	145
DI1 fault	146
DI2 fault	147
DI3 fault	148
DI4 fault	149
DI5 fault	150
DI6 fault	151
DI7 fault	152
DI8 fault	153
Internal communication lost	154
Cell voltage sampling abnormal	155
Cell temperature sampling abnormal	156
Display control detection fault	157
Inter-cluster over-voltage-difference	158
Inter-cluster trip fault	159
Battery limit fault	160
software version parameters inconsistent	161
Communication fault with PCS	162
PC forced control debugging mode	163
CAN Hall sensor fault	164
CAN Hall sensor communication fault	165
Hardware self-test abnormal	166
cell voltage wire harness fault	167
balancing fault	168
EMS communication fault	169
Communication fault with level-3 BMS	170
cell discharging over-temperature level 1 alarm	171
cell discharging over-temperature level 2 alarm	172
cell discharging over-temperature level 3 alarm	173
cell discharging under-temperature level 1 alarm	174
cell discharging under-temperature level 2 alarm	175
cell discharging under-temperature level 3 alarm	176
high SOC level 1 alarm	177
high SOC level 2 alarm	178
high SOC level 3 alarm	179
high temperature rise level 1 alarm	180
high temperature rise level 2 alarm	181
high temperature rise level 3 alarm	182
Alarm status	183
fault status	184
communication status	185
Alarm status fault status	183 184

Note: Level 1 alarms indicate minor faults, Level 2 alarms indicate moderate faults, and Level 3 and other alarms indicate severe faults.

Alarms such as cell under voltage, cell over voltage, low SOC, and high SOC occur more frequently during charging and discharging and can generally be ignored under normal circumstances.

3.2. holding register

Function code: read 0x03, write 0x06

Description	Modbus address (decimal)	Rate	type of data
Reset command		1	Positive-sequence
(remote adjustment)	5101	I	16-bit signed integer

3.3. input register

Description	Modbus address (decimal)	Rate	type of data
			Positive-sequence
cluster current value	101	10	16-bit signed integer
			Positive-sequence
cluster overall SOC	102	10	16-bit signed integer
			Positive-sequence
cluster overall SOH	103	1	16-bit signed integer
			Positive-sequence
cluster voltage	104	10	16-bit signed integer
			Positive-sequence
cluster battery status	105	1	16-bit signed integer
Max. battery			Positive-sequence
temperature	106	10	16-bit signed integer
Module No. with Max.			Positive-sequence
battery temperature	107	1	16-bit signed integer
Intra-module No. with			
Max. battery			Positive-sequence
temperature	108	1	16-bit signed integer
Min. battery			Positive-sequence
temperature	109	10	16-bit signed integer
Module No. with Min.			Positive-sequence
battery temperature	110	1	16-bit signed integer
Intra-module No. with			
Min. battery			Positive-sequence
temperature	111	1	16-bit signed integer

average battery			Positive-sequence
temperature	112	10	16-bit signed integer
overall number of cells			Positive-sequence
in the battery pack	113	1	16-bit signed integer
, ,			Positive-sequence
Cell average voltage	114	1000	16-bit signed integer
0 0			Positive-sequence
Max. cell voltage	115	1000	16-bit signed integer
Module No. with Max.			Positive-sequence
cell voltage	116	1	16-bit signed integer
Intra-module No. with			Positive-sequence
Max. cell voltage	117	1	16-bit signed integer
			Positive-sequence
Min. cell voltage	118	1000	16-bit signed integer
Module No. with Min.			Positive-sequence
cell voltage	119	1	16-bit signed integer
Intra-module No. with			Positive-sequence
Min. cell voltage	120	1	16-bit signed integer
-			Positive-sequence
cell average SOC	121	10	16-bit signed integer
Accumulated charging			Positive-sequence
power	122	10	32-bit signed integer
Accumulated			Positive-sequence
discharging power	124	10	32-bit signed integer
			Positive-sequence
System alarm status	126	1	16-bit signed integer
Max. allowable			Positive-sequence
charging power	127	10	16-bit signed integer
Max. allowable			Positive-sequence
discharge power	128	10	16-bit signed integer
Accumulated charging			Positive-sequence
energy in one day	129	10	16-bit signed integer
Accumulated			
discharging energy in			Positive-sequence
one day	130	10	16-bit signed integer

3.4. Supplement

- 3.4.1. Battery Cluster Status
 - 1 Initialization;
 - 2 Self-checking;
 - 3 Powering on;
 - 4 Power-on complete;

- 5 Charging disabled;
- 6 Discharge disabled;
- 7 Standby;
- 8 Fault power-off;
- 9 Fault cleared after power-off;
- 10 Test mode;
- 11 Single-cluster maintenance;
- 12 Powering down;
- 13 Power-down complete;

This is not parsed bit by bit but represented in decimal format.

3.4.2. System Alarm Status

- bit0 -- Charging disabled flag;
- bit1 -- Discharge disabled flag;
- bit2 -- Alarm status;
- bit3 -- Fully charged status;
- bit5 -- Fully discharged status;

1 indicates valid, and 0 indicates invalid. Other bits are reserved.

4. Battery cell data forwarding

4.1. input register

	Modbus		
	address		
Description	(decimal)	Rate	type of data
	1001		Positive-sequence 16-bit signed
Cell voltage 001	1001	1000	integer
	1002		Positive-sequence 16-bit signed
Cell voltage 002	1002	1000	integer
	1003		Positive-sequence 16-bit signed
Cell voltage 003	1003	1000	integer
	1004		Positive-sequence 16-bit signed
Cell voltage 004	1004	1000	integer
	1005		Positive-sequence 16-bit signed
Cell voltage 005	1005	1000	integer
	1006		Positive-sequence 16-bit signed
Cell voltage 006	1006	1000	integer
	1007		Positive-sequence 16-bit signed
Cell voltage 007	1007	1000	integer
Cell voltage 008	1008	1000	Positive-sequence 16-bit signed

			integer
			Positive-sequence 16-bit signed
Cell voltage 009	1009	1000	integer
0			Positive-sequence 16-bit signed
Cell voltage 010	1010	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 011	1011	1000	integer
_	1010		Positive-sequence 16-bit signed
Cell voltage 012	1012	1000	integer
	4042		Positive-sequence 16-bit signed
Cell voltage 013	1013	1000	integer
	1014		Positive-sequence 16-bit signed
Cell voltage 014	1014	1000	integer
	1015		Positive-sequence 16-bit signed
Cell voltage 015	1015	1000	integer
	1016		Positive-sequence 16-bit signed
Cell voltage 016	1016	1000	integer
	1017		Positive-sequence 16-bit signed
Cell voltage 017	1017	1000	integer
	1018		Positive-sequence 16-bit signed
Cell voltage 018	1010	1000	integer
	1019		Positive-sequence 16-bit signed
Cell voltage 019	1019	1000	integer
	1020	1000	Positive-sequence 16-bit signed
Cell voltage 020	1020	1000	integer
	1021		Positive-sequence 16-bit signed
Cell voltage 021	1021	1000	integer
	1022		Positive-sequence 16-bit signed
Cell voltage 022		1000	integer
	1023		Positive-sequence 16-bit signed
Cell voltage 023		1000	integer
	1024		Positive-sequence 16-bit signed
Cell voltage 024		1000	integer
	1025		Positive-sequence 16-bit signed
Cell voltage 025		1000	integer
0 11 11 222	1026	4.5.5.	Positive-sequence 16-bit signed
Cell voltage 026	_	1000	integer
0 11 11 25-	1027	4000	Positive-sequence 16-bit signed
Cell voltage 027		1000	integer
0-1114 000	1028	4000	Positive-sequence 16-bit signed
Cell voltage 028		1000	integer 40 hit sime d
Call valtage 000	1029	4000	Positive-sequence 16-bit signed
Cell voltage 029		1000	integer

Cell voltage 030 1030 1030 1030 1030 1030 1030 1030 1030 1030 1031 1031 1031 1031 1031 1032 1032 1033 1033 1033 1033 1033 1033 1034 Cell voltage 033 1034 Cell voltage 034 1035 Cell voltage 035 Cell voltage 036 Cell voltage 036 Cell voltage 037 Cell voltage 037 Cell voltage 038 1037 Cell voltage 038 1038 1039 Cell voltage 038 Cell voltage 038 Cell voltage 039 Cell voltage 040 Cell voltage 040 Cell voltage 041 1041 1050 Cell voltage 042 Cell voltage 043 Cell voltage 044 Cell voltage 045 Cell voltage 046 Cell voltage 047 Cell voltage 048 Cell voltage 048 Cell voltage 049 Cell voltage	
Cell voltage 031 1031 1000 integer Cell voltage 032 1032 1000 integer Cell voltage 033 1033 1000 integer Cell voltage 034 1034 1000 integer Cell voltage 034 1034 1000 integer Cell voltage 035 1035 1000 integer Cell voltage 036 1036 1000 integer Cell voltage 037 1037 Positive-sequence 16-bit signed integer Cell voltage 038 1038 1000 integer Cell voltage 038 1039 Positive-sequence 16-bit signed integer Cell voltage 039 1039 1000 integer Cell voltage 040 1040 1000 integer Cell voltage 041 1041 1000 integer Cell voltage 042 1042 1000 integer Cell voltage 043 1043 1000 integer	ell voltage 030
Cell voltage 031 1000 integer Cell voltage 032 1032 1000 integer Cell voltage 033 1000 integer Cell voltage 033 1000 integer Cell voltage 034 1034 1000 integer Cell voltage 035 1035 1000 integer Cell voltage 036 1036 1000 integer Cell voltage 037 1037 1000 integer Cell voltage 037 1038 1000 integer Cell voltage 038 1038 1000 integer Cell voltage 039 1039 1000 integer Cell voltage 040 1040 1000 integer Cell voltage 041 1041 1000 integer Cell voltage 042 1041 1000 integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Cell voltage 042 1042 1000 integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer	
Cell voltage 032 1032 1000 integer Cell voltage 033 1033 1000 integer Cell voltage 034 1034 1000 integer Cell voltage 035 1035 1000 integer Cell voltage 035 1036 1000 integer Cell voltage 036 1036 1000 integer Cell voltage 037 1037 1000 integer Cell voltage 037 1038 1000 integer Cell voltage 038 1038 1000 integer Cell voltage 039 1039 1000 integer Cell voltage 040 1040 1000 integer Cell voltage 041 1041 1000 integer Cell voltage 042 1042 1000 integer Cell voltage 043 1043 1000 integer	ell voltage 031
Cell voltage 032 1032 1000 integer Cell voltage 033 1033 1000 integer Cell voltage 034 1034 1000 integer Cell voltage 035 1035 1000 integer Cell voltage 035 1036 1000 integer Cell voltage 036 1036 1000 integer Cell voltage 037 1037 1000 integer Cell voltage 037 1038 1000 integer Cell voltage 038 1038 1000 integer Cell voltage 039 1039 1000 integer Cell voltage 040 1040 1000 integer Cell voltage 041 1041 1000 integer Cell voltage 042 1042 1000 integer Cell voltage 043 1043 1000 integer	
Cell voltage 033 1033 1000 Positive-sequence 16-bit signed integer	ell voltage 032
Cell voltage 033 1033 1000 integer Cell voltage 034 1034 1000 integer Cell voltage 035 1035 1000 integer Cell voltage 035 1036 1000 integer Cell voltage 036 1036 1000 integer Cell voltage 037 1000 integer Cell voltage 037 1000 integer Cell voltage 038 1000 integer Cell voltage 039 1039 Positive-sequence 16-bit signed integer Cell voltage 040 1040 1000 integer Cell voltage 041 1041 1000 integer Cell voltage 042 1042 Positive-sequence 16-bit signed integer Cell voltage 043 1043 Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer	
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Cell voltage 034 1034 1000 integer Cell voltage 035 1035 1000 integer Cell voltage 036 1036 1000 integer Cell voltage 036 1037 1000 integer Cell voltage 037 1037 1000 integer Cell voltage 038 1000 integer Cell voltage 039 1039 1000 integer Cell voltage 040 1040 1000 integer Cell voltage 040 1040 1000 integer Cell voltage 041 1041 1000 integer Cell voltage 042 1042 1000 integer Cell voltage 043 1043 1000 integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Cell voltage 043 1043 1000 integer	
Cell voltage 035 1035 1000	ell voltage 034
Cell voltage 035 1036 1000 integer Cell voltage 036 1036 1000 integer Cell voltage 037 1037 Positive-sequence 16-bit signed integer Cell voltage 038 1038 1000 integer Cell voltage 039 1039 Positive-sequence 16-bit signed integer Cell voltage 040 1040 Positive-sequence 16-bit signed integer Cell voltage 041 1000 integer Cell voltage 041 Positive-sequence 16-bit signed integer Cell voltage 042 1042 Positive-sequence 16-bit signed integer Cell voltage 043 1000 integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Cell voltage 043 1000 integer	
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Cell voltage 036 1036 1037 1000 Integer Positive-sequence 16-bit signed integer Cell voltage 038 1038 1000 Cell voltage 038 1038 1000 Cell voltage 038 1039 1000 Cell voltage 039 1040 Cell voltage 040 1040 1041 1041 1041 1042 Cell voltage 042 1043 Cell voltage 043 1044 1044 Integer Positive-sequence 16-bit signed integer	on voltage eee
Cell voltage 037 1037 1000 Positive-sequence 16-bit signed integer	ell voltage 036
Cell voltage 037 1038 1038 1039 Cell voltage 039 1039 Cell voltage 040 1040 Cell voltage 040 1041 Cell voltage 041 Cell voltage 042 Cell voltage 043 1042 1043 1044 1059 1060 1070 Integer Positive-sequence 16-bit signed integer	Cii voitage 000
Cell voltage 038 1038 1000 Positive-sequence 16-bit signed integer	foll voltage 037
Cell voltage 038 1038 1000 integer Positive-sequence 16-bit signed integer Cell voltage 040 1040 1040 1040 Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Cell voltage 041 1041 1042 1042 1043 1043 1043 1044 Positive-sequence 16-bit signed integer	eli voltage 037
Cell voltage 039 1039 1000 Positive-sequence 16-bit signed integer	tall walks as 020
Cell voltage 039 1039 1040 1040 1040 1040 1040 1041 1041 1041 1041 1041 1042 1042 1042 1043 1043 1043 1044	eli voltage 038
Cell voltage 040 1040 1040 1000	
Cell voltage 040 1040 1040 1000 integer Positive-sequence 16-bit signed integer Cell voltage 042 1042 1000 Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Cell voltage 043 1043 1000 Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed	ell voltage 039
Cell voltage 040 1041 Cell voltage 041 1041 1000 Integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer Cell voltage 042 1043 Cell voltage 043 1044 Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer	
Cell voltage 041 1041 1000 integer Positive-sequence 16-bit signed integer Cell voltage 042 1043 1040 Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer 1044 Positive-sequence 16-bit signed 1044	ell voltage 040
Cell voltage 041 1000 integer Positive-sequence 16-bit signed integer Cell voltage 042 1000 Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed integer 1043 Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed	
Cell voltage 042 1042 1000 integer Positive-sequence 16-bit signed integer 1043 1000 integer Positive-sequence 16-bit signed	ell voltage 041
Cell voltage 042 1000 integer Positive-sequence 16-bit signed integer 1043 1000 integer Positive-sequence 16-bit signed integer Positive-sequence 16-bit signed	
Cell voltage 043 1043 1000 integer Positive-sequence 16-bit signed	ell voltage 042
Cell voltage 043 1000 integer Positive-sequence 16-bit signed	
Positive-sequence 16-bit signed	ell voltage 043
1044	
	ell voltage 044
Positive-sequence 16-bit signed	
Cell voltage 045 1045 1000 integer	ell voltage 045
Positive-sequence 16-bit signed	- Voltage 040
1046	all voltage 046
	eli vullaye 040
Positive-sequence 16-bit signed	vall valta 047
Cell voltage 047 1000 integer	eii voitage 047
Positive-sequence 16-bit signed	
Cell voltage 048 1000 integer	ell voltage 048
Positive-sequence 16-bit signed	
Cell voltage 049 1000 integer	ell voltage 049
Positive-sequence 16-bit signed	
Cell voltage 050 1000 integer	ell voltage 050
Positive-sequence 16-bit signed	
Cell voltage 051 1051 1000 integer	ell voltage 051

			Desitive assumes 16 hit signed
Cell voltage 052	1052	1000	Positive-sequence 16-bit signed integer
	1052		Positive-sequence 16-bit signed
Cell voltage 053	1053	1000	integer
	1054		Positive-sequence 16-bit signed
Cell voltage 054	1054	1000	integer
	1055		Positive-sequence 16-bit signed
Cell voltage 055	1055	1000	integer
	1056		Positive-sequence 16-bit signed
Cell voltage 056	1030	1000	integer
	1057		Positive-sequence 16-bit signed
Cell voltage 057	1057	1000	integer
	1058		Positive-sequence 16-bit signed
Cell voltage 058	1056	1000	integer
	1050		Positive-sequence 16-bit signed
Cell voltage 059	1059	1000	integer
	4000		Positive-sequence 16-bit signed
Cell voltage 060	1060	1000	integer
	4004		Positive-sequence 16-bit signed
Cell voltage 061	1061	1000	integer
	4000		Positive-sequence 16-bit signed
Cell voltage 062	1062	1000	integer
	1000		Positive-sequence 16-bit signed
Cell voltage 063	1063	1000	integer
	4004		Positive-sequence 16-bit signed
Cell voltage 064	1064	1000	integer
	1005		Positive-sequence 16-bit signed
Cell voltage 065	1065	1000	integer
	1000		Positive-sequence 16-bit signed
Cell voltage 066	1066	1000	integer
	1007		Positive-sequence 16-bit signed
Cell voltage 067	1067	1000	integer
	1000		Positive-sequence 16-bit signed
Cell voltage 068	1068	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 069	1069	1000	integer
	10==		Positive-sequence 16-bit signed
Cell voltage 070	1070	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 071	1071	1000	integer
	4070		Positive-sequence 16-bit signed
Cell voltage 072	1072	1000	integer
_	4070		Positive-sequence 16-bit signed
Cell voltage 073	1073	1000	integer
		1.000	3801

			Desitive assurance 16 bit signed
Cell voltage 074	1074	1000	Positive-sequence 16-bit signed integer
	4075		Positive-sequence 16-bit signed
Cell voltage 075	1075	1000	integer
	4070		Positive-sequence 16-bit signed
Cell voltage 076	1076	1000	integer
	4077		Positive-sequence 16-bit signed
Cell voltage 077	1077	1000	integer
	1070		Positive-sequence 16-bit signed
Cell voltage 078	1078	1000	integer
-	1070		Positive-sequence 16-bit signed
Cell voltage 079	1079	1000	integer
0			Positive-sequence 16-bit signed
Cell voltage 080	1080	1000	integer
0			Positive-sequence 16-bit signed
Cell voltage 081	1081	1000	integer
our remage co.		1.000	Positive-sequence 16-bit signed
Cell voltage 082	1082	1000	integer
Con voltago coz		1000	Positive-sequence 16-bit signed
Cell voltage 083	1083	1000	integer
Cell voltage 003		1000	Positive-sequence 16-bit signed
Coll voltage 094	1084	1000	,
Cell voltage 084		1000	integer
Call voltage 005	1085	1000	Positive-sequence 16-bit signed
Cell voltage 085		1000	integer
0-1114	1086	4000	Positive-sequence 16-bit signed
Cell voltage 086		1000	integer
0 11 11 007	1087	4000	Positive-sequence 16-bit signed
Cell voltage 087		1000	integer
	1088	4000	Positive-sequence 16-bit signed
Cell voltage 088		1000	integer
	1089		Positive-sequence 16-bit signed
Cell voltage 089		1000	integer
	1090		Positive-sequence 16-bit signed
Cell voltage 090		1000	integer
	1091		Positive-sequence 16-bit signed
Cell voltage 091		1000	integer
	1092		Positive-sequence 16-bit signed
Cell voltage 092	1002	1000	integer
	1093		Positive-sequence 16-bit signed
Cell voltage 093	1090	1000	integer
	1094		Positive-sequence 16-bit signed
Cell voltage 094	1034	1000	integer
	100E		Positive-sequence 16-bit signed
Cell voltage 095	1095	1000	integer

			Positive-sequence 16-bit signed
Cell voltage 096	1096	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 097	1097	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 098	1098	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 099	1099	1000	integer
<u> </u>			Positive-sequence 16-bit signed
Cell voltage 100	1100	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 101	1101	1000	integer
Ton vollage 101		1000	Positive-sequence 16-bit signed
Cell voltage 102	1102	1000	integer
Con voltago 102		1000	Positive-sequence 16-bit signed
Cell voltage 103	1103	1000	integer
Och voltage 100		1000	Positive-sequence 16-bit signed
Cell voltage 104	1104	1000	integer
Cell voltage 104		1000	
Coll voltage 105	1105	1000	Positive-sequence 16-bit signed
Cell voltage 105		1000	integer
0-1114	1106	4000	Positive-sequence 16-bit signed
Cell voltage 106		1000	integer
0 11 11 407	1107	4000	Positive-sequence 16-bit signed
Cell voltage 107		1000	integer
	1108		Positive-sequence 16-bit signed
Cell voltage 108		1000	integer
	1109		Positive-sequence 16-bit signed
Cell voltage 109		1000	integer
	1110		Positive-sequence 16-bit signed
Cell voltage 110	_	1000	integer
	1111		Positive-sequence 16-bit signed
Cell voltage 111		1000	integer
	1112		Positive-sequence 16-bit signed
Cell voltage 112	2	1000	integer
	1113		Positive-sequence 16-bit signed
Cell voltage 113	1113	1000	integer
	1114		Positive-sequence 16-bit signed
Cell voltage 114	1114	1000	integer
	1115		Positive-sequence 16-bit signed
Cell voltage 115	1113	1000	integer
	4440		Positive-sequence 16-bit signed
Cell voltage 116	1116	1000	integer
	4447		Positive-sequence 16-bit signed
Cell voltage 117	1117	1000	integer
<u> </u>	l .	1	

			TD ''' 40.1'' '
Cell voltage 118	1118	1000	Positive-sequence 16-bit signed integer
Cell voltage 119	1119	1000	Positive-sequence 16-bit signed integer
	1120		Positive-sequence 16-bit signed
Cell voltage 120		1000	integer
	1121		Positive-sequence 16-bit signed
Cell voltage 121	1121	1000	integer
	1100		Positive-sequence 16-bit signed
Cell voltage 122	1122	1000	integer
	4400		Positive-sequence 16-bit signed
Cell voltage 123	1123	1000	integer
		1000	Positive-sequence 16-bit signed
Cell voltage 124	1124	1000	integer
Och vollage 124		1000	Positive-sequence 16-bit signed
Call valtage 405	1125	4000	
Cell voltage 125		1000	integer
	1126		Positive-sequence 16-bit signed
Cell voltage 126		1000	integer
	1127		Positive-sequence 16-bit signed
Cell voltage 127	1121	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 128	1128	1000	integer
		1000	Positive-sequence 16-bit signed
Cell voltage 129	1129	1000	integer
Och voltage 123		1000	
0 11 11 400	1130	4000	Positive-sequence 16-bit signed
Cell voltage 130		1000	integer
	1131		Positive-sequence 16-bit signed
Cell voltage 131	-	1000	integer
	1132		Positive-sequence 16-bit signed
Cell voltage 132	1102	1000	integer
	4400		Positive-sequence 16-bit signed
Cell voltage 133	1133	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 134	1134	1000	integer
Con vollage 101		1000	Positive-sequence 16-bit signed
Coll voltage 125	1135	1000	
Cell voltage 135		1000	integer
0 11 11 400	1136	4000	Positive-sequence 16-bit signed
Cell voltage 136		1000	integer
	1137		Positive-sequence 16-bit signed
Cell voltage 137		1000	integer
	1138		Positive-sequence 16-bit signed
Cell voltage 138	1130	1000	integer
	4400		Positive-sequence 16-bit signed
Cell voltage 139	1139	1000	integer
<u> </u>	<u> </u>	1	

			Dagiting and the state of the s
Cell voltage 140	1140	1000	Positive-sequence 16-bit signed integer
Cell voltage 141	1141	1000	Positive-sequence 16-bit signed integer
Och voltage 141		1000	Positive-sequence 16-bit signed
Cell voltage 142	1142	1000	integer
Cell voltage 142		1000	Positive-sequence 16-bit signed
Cell voltage 143	1143	1000	integer
Cell voltage 143		1000	
Cell voltage 144	1144	1000	Positive-sequence 16-bit signed integer
Cell Vollage 144		1000	Positive-sequence 16-bit signed
Coll voltage 145	1145	1000	,
Cell voltage 145		1000	integer
Call valtage 146	1146	1000	Positive-sequence 16-bit signed
Cell voltage 146		1000	integer AC hit size of
0 11 11 447	1147	4000	Positive-sequence 16-bit signed
Cell voltage 147		1000	integer
	1148		Positive-sequence 16-bit signed
Cell voltage 148		1000	integer
	1149		Positive-sequence 16-bit signed
Cell voltage 149		1000	integer
	1150		Positive-sequence 16-bit signed
Cell voltage 150		1000	integer
	1151	1000	Positive-sequence 16-bit signed
Cell voltage 151	1101	1000	integer
	1152		Positive-sequence 16-bit signed
Cell voltage 152	1102	1000	integer
	1153		Positive-sequence 16-bit signed
Cell voltage 153	1100	1000	integer
	1151		Positive-sequence 16-bit signed
Cell voltage 154	1154	1000	integer
	1155		Positive-sequence 16-bit signed
Cell voltage 155	1155	1000	integer
	4450		Positive-sequence 16-bit signed
Cell voltage 156	1156	1000	integer
	4457		Positive-sequence 16-bit signed
Cell voltage 157	1157	1000	integer
_	4450		Positive-sequence 16-bit signed
Cell voltage 158	1158	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 159	1159	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 160	1160	1000	integer
		1200	Positive-sequence 16-bit signed
Cell voltage 161	1161	1000	integer
Con voltago 101		1.000	

			Positive-sequence 16-bit signed
Cell voltage 162	1162	1000	integer
Con voltage 102		1000	Positive-sequence 16-bit signed
Cell voltage 163	1163	1000	integer
- Com ventage 100		1.000	Positive-sequence 16-bit signed
Cell voltage 164	1164	1000	integer
- Com romage (C)		1.000	Positive-sequence 16-bit signed
Cell voltage 165	1165	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 166	1166	1000	integer
- Com romage roo		1.000	Positive-sequence 16-bit signed
Cell voltage 167	1167	1000	integer
Con voitage 107		1000	Positive-sequence 16-bit signed
Cell voltage 168	1168	1000	integer
Con voilago 100		1000	Positive-sequence 16-bit signed
Cell voltage 169	1169	1000	integer
Con voltage 100		1000	Positive-sequence 16-bit signed
Cell voltage 170	1170	1000	integer
Con voltage 170		1000	Positive-sequence 16-bit signed
Cell voltage 171	1171	1000	integer
Och Voltage 17 1		1000	Positive-sequence 16-bit signed
Cell voltage 172	1172	1000 1000 1000 1000	integer
Och Voltage 172			Positive-sequence 16-bit signed
Cell voltage 173	1173		integer
Och voltage 170		1000	Positive-sequence 16-bit signed
Cell voltage 174	1174	1000	integer
Con voltage 174		1000	Positive-sequence 16-bit signed
Cell voltage 175	1175	1000	integer
Con voltago 170		1000	Positive-sequence 16-bit signed
Cell voltage 176	1176	1000	integer
Con voltago 170		1000	Positive-sequence 16-bit signed
Cell voltage 177	1177	1000	integer
		1.000	Positive-sequence 16-bit signed
Cell voltage 178	1178	1000	integer
22		1.000	Positive-sequence 16-bit signed
Cell voltage 179	1179	1000	integer
25 15.1.4.90 110		1.000	Positive-sequence 16-bit signed
Cell voltage 180	1180	1000	integer
		1.555	Positive-sequence 16-bit signed
Cell voltage 181	1181	1000	integer
		1.555	Positive-sequence 16-bit signed
Cell voltage 182	1182	1000	integer
g		1000	Positive-sequence 16-bit signed
Cell voltage 183	1183	1000	integer

			Desitive assumes 16 hit signed
Cell voltage 184	1184	1000	Positive-sequence 16-bit signed integer
Con voitage 104		1000	Positive-sequence 16-bit signed
Cell voltage 185	1185	1000	integer
Con voilage 100		1000	Positive-sequence 16-bit signed
Cell voltage 186	1186	1000	integer
Och voltage 100		1000	Positive-sequence 16-bit signed
Cell voltage 187	1187	1000	integer
Cell voltage 107		1000	
Call valtage 100	1188	1000	Positive-sequence 16-bit signed
Cell voltage 188		1000	integer
0-1114	1189	4000	Positive-sequence 16-bit signed
Cell voltage 189		1000	integer
0 11 11 100	1190	4000	Positive-sequence 16-bit signed
Cell voltage 190		1000	integer
	1191		Positive-sequence 16-bit signed
Cell voltage 191		1000	integer
	1192		Positive-sequence 16-bit signed
Cell voltage 192	1102	1000	integer
	1193		Positive-sequence 16-bit signed
Cell voltage 193	1193	1000	integer
	4404		Positive-sequence 16-bit signed
Cell voltage 194	1194	1000	integer
	110=		Positive-sequence 16-bit signed
Cell voltage 195	1195	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 196	1196	1000	integer
<u> </u>			Positive-sequence 16-bit signed
Cell voltage 197	1197	1000	integer
		1	Positive-sequence 16-bit signed
Cell voltage 198	1198	1000	integer
Con voitage 100		1000	Positive-sequence 16-bit signed
Cell voltage 199	1199	1000	integer
Och voltage 199		1000	Positive-sequence 16-bit signed
Call valtage 200	1200	1000	
Cell voltage 200		1000	integer
0 11 11 001	1201	1000	Positive-sequence 16-bit signed
Cell voltage 201		1000	integer
	1202		Positive-sequence 16-bit signed
Cell voltage 202		1000	integer
	1203		Positive-sequence 16-bit signed
Cell voltage 203	1200	1000	integer
	1204		Positive-sequence 16-bit signed
Cell voltage 204	1204	1000	integer
	1205		Positive-sequence 16-bit signed
Cell voltage 205	1205	1000	integer
	I		-

			Desitive assumes 16 hit signed
Cell voltage 206	1206	1000	Positive-sequence 16-bit signed integer
	1207		Positive-sequence 16-bit signed
Cell voltage 207	1207	1000	integer
	1208		Positive-sequence 16-bit signed
Cell voltage 208	1200	1000	integer
	1209		Positive-sequence 16-bit signed
Cell voltage 209		1000	integer
	1210		Positive-sequence 16-bit signed
Cell voltage 210		1000	integer
0 11 11 044	1211	4000	Positive-sequence 16-bit signed
Cell voltage 211		1000	integer
0-1114	1212	4000	Positive-sequence 16-bit signed
Cell voltage 212		1000	integer
Call voltage 242	1213	1000	Positive-sequence 16-bit signed
Cell voltage 213		1000	integer
Cell voltage 214	1214	1000	Positive-sequence 16-bit signed integer
Cell Voltage 214		1000	Positive-sequence 16-bit signed
Cell voltage 215	1215	1000	integer
Cell voltage 213		1000	Positive-sequence 16-bit signed
Cell voltage 216	1216	1000	integer
Con voltage 2 To		1000	Positive-sequence 16-bit signed
Cell voltage 217	1217	1000	integer
our romage z rr		1.000	Positive-sequence 16-bit signed
Cell voltage 218	1218	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 219	1219	1000	integer
-	4000		Positive-sequence 16-bit signed
Cell voltage 220	1220	1000	integer
	1001		Positive-sequence 16-bit signed
Cell voltage 221	1221	1000	integer
	1222		Positive-sequence 16-bit signed
Cell voltage 222	1222	1000	integer
	1223		Positive-sequence 16-bit signed
Cell voltage 223	1223	1000	integer
	1224		Positive-sequence 16-bit signed
Cell voltage 224	1227	1000	integer
	1225		Positive-sequence 16-bit signed
Cell voltage 225		1000	integer
	1226		Positive-sequence 16-bit signed
Cell voltage 226	-	1000	integer
	1227	4.5.5.5	Positive-sequence 16-bit signed
Cell voltage 227		1000	integer

Coll voltage 229			L POCITIVO COGLIONOO 16 bit cignod
Cell voltage 228	1228	1000	Positive-sequence 16-bit signed integer
	1220		Positive-sequence 16-bit signed
Cell voltage 229	1229	1000	integer
	1220		Positive-sequence 16-bit signed
Cell voltage 230	1230	1000	integer
	4004		Positive-sequence 16-bit signed
Cell voltage 231	1231	1000	integer
	4000		Positive-sequence 16-bit signed
Cell voltage 232	1232	1000	integer
	4000		Positive-sequence 16-bit signed
Cell voltage 233	1233	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 234	1234	1000	integer
Ŭ .			Positive-sequence 16-bit signed
Cell voltage 235	1235	1000	integer
Jon vollage 200		1000	Positive-sequence 16-bit signed
Cell voltage 236	1236	1000	integer
Con voltage 200		1000	Positive-sequence 16-bit signed
Cell voltage 237	1237	1000	integer
Och Voltage 201		1000	Positive-sequence 16-bit signed
Coll voltage 229	1238	1000	integer
Cell voltage 238		1000	-
Call valtage 220	1239	1000	Positive-sequence 16-bit signed
Cell voltage 239		1000	integer
0-1114	1240	4000	Positive-sequence 16-bit signed
Cell voltage 240		1000	integer
0 11 11 044	4044	4000	Positive-sequence 16-bit signed
Cell voltage 241	1241	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 242	1242	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 243	1243	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 244	1244	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 245	1245	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 246	1246	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 247	1247	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 248	1248	1000	integer
-			Positive-sequence 16-bit signed
Cell voltage 249	1249	1000	integer

			[B
0-1114	4050	4000	Positive-sequence 16-bit signed
Cell voltage 250	1250	1000	integer
Call valtage 251	1051	1000	Positive-sequence 16-bit signed
Cell voltage 251	1251	1000	integer
0-1114050	4050	4000	Positive-sequence 16-bit signed
Cell voltage 252	1252	1000	integer
0 11 11 050	4050	4000	Positive-sequence 16-bit signed
Cell voltage 253	1253	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 254	1254	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 255	1255	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 256	1256	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 257	1257	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 258	1258	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 259	1259	1000	integer
			Positive-sequence 16-bit signed
Cell voltage 260	1260	1000	integer
	1501	1000 1000 1000 10 10 10	Positive-sequence 16-bit signed
cell temperature 001	1501	10	integer
	4500	1000 1000 1000 10 10	Positive-sequence 16-bit signed
cell temperature 002	1502	10	integer
	4500		Positive-sequence 16-bit signed
cell temperature 003	1503	10	integer
·			Positive-sequence 16-bit signed
cell temperature 004	1504	10	integer
			Positive-sequence 16-bit signed
cell temperature 005	1505	10	integer
			Positive-sequence 16-bit signed
cell temperature 006	1506	10	integer
			Positive-sequence 16-bit signed
cell temperature 007	1507	10	integer
- 2 12porataro 001		1.0	Positive-sequence 16-bit signed
cell temperature 008	1508	10	integer
23.1 tomporataro 000		1.0	Positive-sequence 16-bit signed
cell temperature 009	1509	10	integer
oon tomporature 000		10	Positive-sequence 16-bit signed
cell temperature 010	1510	10	integer
oon tomporature 010		10	Positive-sequence 16-bit signed
cell temporature 011	1511	10	,
cell temperature 011		10	integer

			Positive sequence 16 bit signed
cell temperature 012	1512	10	Positive-sequence 16-bit signed integer
ceii terriperature 012		10	Positive-sequence 16-bit signed
cell temperature 013	1513	10	integer
ceii terriperature 013		10	
call tamparatura 014	1514	10	Positive-sequence 16-bit signed
cell temperature 014		10	integer 40 hit signed
II town a noti wa 045	1515	40	Positive-sequence 16-bit signed
cell temperature 015		10	integer
	1516	40	Positive-sequence 16-bit signed
cell temperature 016		10	integer
	1517	1.0	Positive-sequence 16-bit signed
cell temperature 017		10	integer
	1518		Positive-sequence 16-bit signed
cell temperature 018		10	integer
	1519		Positive-sequence 16-bit signed
cell temperature 019		10	integer
	1520		Positive-sequence 16-bit signed
cell temperature 020		10	integer
	1521		Positive-sequence 16-bit signed
cell temperature 021	1021	10	integer
	1522		Positive-sequence 16-bit signed
cell temperature 022	1322	10	integer
	1523		Positive-sequence 16-bit signed
cell temperature 023	1323	10	integer
	1524		Positive-sequence 16-bit signed
cell temperature 024	1324	10	integer
	1505		Positive-sequence 16-bit signed
cell temperature 025	1525	10	integer
	4500		Positive-sequence 16-bit signed
cell temperature 026	1526	10	integer
	4507		Positive-sequence 16-bit signed
cell temperature 027	1527	10	integer
	4500		Positive-sequence 16-bit signed
cell temperature 028	1528	10	integer
,			Positive-sequence 16-bit signed
cell temperature 029	1529	10	integer
, , ,			Positive-sequence 16-bit signed
cell temperature 030	1530	10	integer
,		1	Positive-sequence 16-bit signed
cell temperature 031	1531	10	integer
2511 tomporataro 001		.0	Positive-sequence 16-bit signed
cell temperature 032	1532	10	integer
Son tomporature 002		10	Positive-sequence 16-bit signed
cell temperature 033	1533	10	integer
cen temperature 033		10	штеует

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	1534	40	Positive-sequence 16-bit signed
cell temperature 034		10	integer
	1535		Positive-sequence 16-bit signed
cell temperature 035		10	integer
	1536		Positive-sequence 16-bit signed
cell temperature 036		10	integer
	1537		Positive-sequence 16-bit signed
cell temperature 037		10	integer
	1538		Positive-sequence 16-bit signed
cell temperature 038		10	integer
	1539		Positive-sequence 16-bit signed
cell temperature 039	1559	10	integer
	1540		Positive-sequence 16-bit signed
cell temperature 040	1540	10	integer
	4544		Positive-sequence 16-bit signed
cell temperature 041	1541	10	integer
	4540		Positive-sequence 16-bit signed
cell temperature 042	1542	10	integer
			Positive-sequence 16-bit signed
cell temperature 043	1543	10	integer
			Positive-sequence 16-bit signed
cell temperature 044	1544	10	integer
1			Positive-sequence 16-bit signed
cell temperature 045	1545	10	integer
on temperature or to		1	Positive-sequence 16-bit signed
cell temperature 046	1546	10	integer
con temperature or to		10	Positive-sequence 16-bit signed
cell temperature 047	1547	10	integer
oon tomporature our		10	Positive-sequence 16-bit signed
cell temperature 048	1548	10	integer
con temperature 040		10	Positive-sequence 16-bit signed
cell temperature 049	1549	10	integer
cell temperature 049		10	
coll temperature 050	1550	10	Positive-sequence 16-bit signed
cell temperature 050		10	Integer Positive sequence 16 bit signed
coll tomporature 054	1551	10	Positive-sequence 16-bit signed
cell temperature 051		10	integer
a all tames a set on 050	1552	40	Positive-sequence 16-bit signed
cell temperature 052		10	integer
	1553		Positive-sequence 16-bit signed
cell temperature 053		10	integer
	1554		Positive-sequence 16-bit signed
cell temperature 054		10	integer
	1555		Positive-sequence 16-bit signed
cell temperature 055		10	integer

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	1556	40	Positive-sequence 16-bit signed
cell temperature 056		10	integer
	1557		Positive-sequence 16-bit signed
cell temperature 057		10	integer
	1558		Positive-sequence 16-bit signed
cell temperature 058	1000	10	integer
	1559		Positive-sequence 16-bit signed
cell temperature 059	1559	10	integer
	4500		Positive-sequence 16-bit signed
cell temperature 060	1560	10	integer
			Positive-sequence 16-bit signed
cell temperature 061	1561	10	integer
oon tomporatare co.			Positive-sequence 16-bit signed
cell temperature 062	1562	10	integer
ceii terriperature 002		10	
	1563	40	Positive-sequence 16-bit signed
cell temperature 063		10	integer
	1564		Positive-sequence 16-bit signed
cell temperature 064		10	integer
	1565		Positive-sequence 16-bit signed
cell temperature 065	1000	10	integer
	1566		Positive-sequence 16-bit signed
cell temperature 066	1566	10	integer
			Positive-sequence 16-bit signed
cell temperature 067	1567	10	integer
			Positive-sequence 16-bit signed
cell temperature 068	1568	10	integer
our temperature coo			Positive-sequence 16-bit signed
cell temperature 069	1569	10	integer
cell temperature 009		10	Positive-sequence 16-bit signed
	1570	40	'
cell temperature 070		10	integer
	1571		Positive-sequence 16-bit signed
cell temperature 071		10	integer
	1572		Positive-sequence 16-bit signed
cell temperature 072	<u> </u>	10	integer
	1573		Positive-sequence 16-bit signed
cell temperature 073	1073	10	integer
	4574		Positive-sequence 16-bit signed
cell temperature 074	1574	10	integer
		1	Positive-sequence 16-bit signed
cell temperature 075	1575	10	integer
,		1	Positive-sequence 16-bit signed
cell temperature 076	1576	10	integer
con temperature 070		10	Positive-sequence 16-bit signed
coll tomporature 077	1577	10	,
cell temperature 077		10	integer

			Positive-sequence 16-bit signed
cell temperature 078	1578	10	integer
ceii terriperature 070		10	Positive-sequence 16-bit signed
cell temperature 079	1579	10	integer
ceii temperature 079		10	
II to 000	1580	10	Positive-sequence 16-bit signed
cell temperature 080		10	integer
	1581	4.0	Positive-sequence 16-bit signed
cell temperature 081		10	integer
	1582		Positive-sequence 16-bit signed
cell temperature 082		10	integer
	1583		Positive-sequence 16-bit signed
cell temperature 083		10	integer
	1584		Positive-sequence 16-bit signed
cell temperature 084		10	integer
	1585		Positive-sequence 16-bit signed
cell temperature 085	1303	10	integer
	1506		Positive-sequence 16-bit signed
cell temperature 086	1586	10	integer
	4507		Positive-sequence 16-bit signed
cell temperature 087	1587	10	integer
			Positive-sequence 16-bit signed
cell temperature 088	1588	10	integer
	1500		Positive-sequence 16-bit signed
cell temperature 089	1589	10	integer
	1500		Positive-sequence 16-bit signed
cell temperature 090	1590	10	integer
·			Positive-sequence 16-bit signed
cell temperature 091	1591	10	integer
			Positive-sequence 16-bit signed
cell temperature 092	1592	10	integer
-			Positive-sequence 16-bit signed
cell temperature 093	1593	10	integer
			Positive-sequence 16-bit signed
cell temperature 094	1594	10	integer
con temperature out		10	Positive-sequence 16-bit signed
cell temperature 095	1595	10	integer
con temperature 030		10	Positive-sequence 16-bit signed
cell temperature 096	1596	10	integer
con temperature 030		10	
coll tomporature 007	1597	10	Positive-sequence 16-bit signed
cell temperature 097		10	Integer
coll tomor suctions 000	1598	10	Positive-sequence 16-bit signed
cell temperature 098		10	integer AC hit simual
	1599	40	Positive-sequence 16-bit signed
cell temperature 099		10	integer

	1600		Positive-sequence 16-bit signed
cell temperature 100	1000	10	integer

5. I/O module data forwarding

5.1. read coil

Function code: 0x01

	Modbus address
Description	(decimal)
Temperature detector alarm	401
Smoke detector alarm	402
fire suppression alarm	403
immersion alarm	404
Cabinet door lock status	405
Emergency stop switch	406
status	400
Incoming circuit breaker	407
status	407
Busbar circuit breaker	408
status	400
running indicator	409
Fault indicator	410
Dehumidification fan	411
Incoming circuit breaker trip	412
Busbar circuit breaker trip	413
DO06	414
DO07	415
DO08	416

6. Water-cooled air conditioner data forwarding

6.1. read coil

	Modbus address	
description	(decimal)	

High temperature of outlet water alarm	701
Outlet water low temperature alarm	702
Outlet water temperature sensor	
failure	703
Return water temperature sensor	
failure	704
Hydration alarm	705
System pressure is too high alarm	706
Outlet water pressure is too high alarm	707
Water-cooled offline	708
Fault status	709

6.2. holding register

Function code: read 0x03, write 0x06

System power on and			Positive-sequence 16-bit
off	5201	1	signed integer
			Positive-sequence 16-bit
Mode settings	5202	1	signed integer
Control temperature			Positive-sequence 16-bit
selection	5203	1	signed integer

6.3. input register

			Positive-sequence 16-bit signed
Outlet water temperature	701	10	integer
Return water			Positive-sequence 16-bit signed
temperature	702	10	integer
			Positive-sequence 16-bit signed
Exhaust gas temperature	703	10	integer
			Positive-sequence 16-bit signed
ambient temperature	704	10	integer
			Positive-sequence 16-bit signed
Inlet water pressure	705	100	integer
			Positive-sequence 16-bit signed
Water pressure	706	100	integer
Current speed of water			Positive-sequence 16-bit signed
pump	707	10	integer
water pump status	708	1	Positive-sequence 16-bit signed

			integer
			Positive-sequence 16-bit signed
Current system mode	709	1	integer