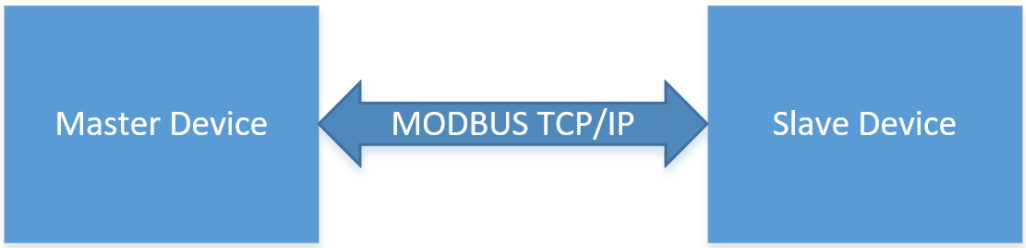
Modbus TCP Protocol

1.ModBus TCP

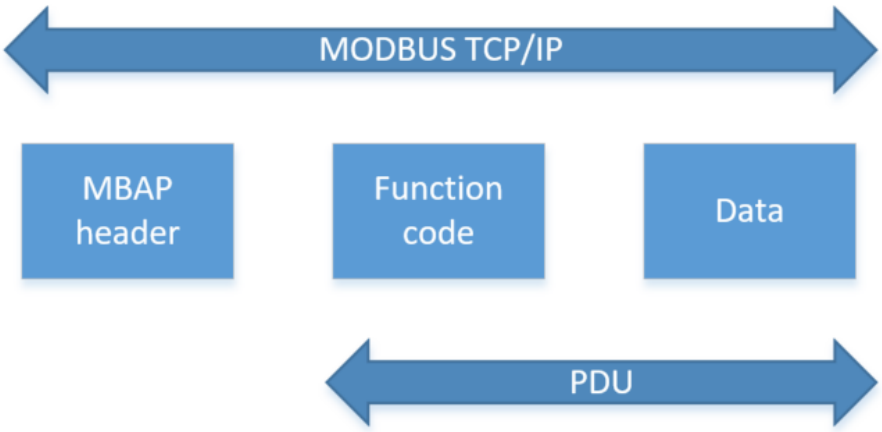
1.1Communication flow chart:



1.2 Communication description:

MODBUS-TCP Communication
Communication interface: MODBUS-TCP/IP
Communication connection mode: Ethernet connection
Communication working mode: half-duplex
Communication response time：less-than 100ms
Communication timeout：the default timeout period is 30S (support settings)
Communication IP Address：192.168.200.43
Communication Server Port：502

2.Data area



(Modbus TCP/IP): MBAP header		
Fields	Length	Description
Transaction Identifier	2 Bytes	Indentification of a MODBUS request/response transaction
Protocol Identifier	2 Bytes	0= MODBUS protocol
Length	2 Bytes	Number of following Bytes
Unit Identifier	1 Byte	Identification of a remote slave connected on a serial line or on other buses

(Modbus TCP/IP): Reading data request	
MBAP	7 Bytes
Function code (0x03/0x04)	1 Bytes
Starting Address of register	2 Bytes
Quantity of registers	2 Bytes

(Modbus TCP/IP): Reading successful response	
MBAP	7 Bytes
Function code (0x03/0x04)	1 Bytes
Quantity of Data Bytes	1 Bytes
Value of registers	(2*N) Bytes

(Modbus TCP/IP): Reading failed response	
MBAP	7 Bytes
Error Code (0x83/0x84)	1 Bytes
Exeption code (01 or 02 or 03 or 04)	1 Bytes

(Modbus TCP/IP)： Writing Data request(Writing multiple values)	
MBAP	7 Bytes
Function Code（0x10）	1 Byte
Starting Address of register	2 Byte
Quantity of registers	2 Byte
Quantity of datas	1 Byte
Value of registers	（2*N）Bytes

(Modbus TCP/IP)： Writing successful response(Writing multiple values)	
MBAP	7 Bytes
Function Code（0x10）	1 Byte
Starting Address of register	2 Bytes
Quantity of registers	2 Bytes

(Modbus TCP/IP)： Writing failed response(Writing multiple values)	
MBAP	7 Bytes
Error Code（0x90）	1 Byte
Exeption code（01 or 02 or 03 or 04）	1 Byte

(Modbus TCP/IP)： Writing Data request(Writing single value)	
MBAP	7 Bytes
Function Code（0x06）	1 Byte
Starting Address of register	2 Bytes
Value of registers	2 Bytes

(Modbus TCP/IP)： Writing successful response(Writing single value)	
MBAP	7 Bytes
Function Code（0x06）	1 Byte
Starting Address of register	2 Bytes
Value of registers	2 Bytes

(Modbus TCP/IP)： Writing failed response(Writing single value)	
MBAP	7 Bytes
Error Code（0x86）	1 Byte
Exeption code（01 or 02 or 03 or 04）	1 Byte

The address of the slave device		
Device Type	Device Subtype	Unit Identifier
system	ems	1
battery	battery stack	191~200
	battery cluster	201~230
meter	grid_gw_meter	101~109
	ess_gw_meter	111~119
	pv_gw_meter	121~129
	cp_gw_meter	131~139
	wn_gw_meter	141~149
	load_gw_meter	151~159
	ess_in_gw_meter	161~169
	hv_gw_meter	171~179
energy storage inverters	dcac	71~80
	dcdc	81~90
	sts	91~100
pv	pv_inv	21~30
other device	air conditioning	231~240

版本	修改内容	修订人	日期
V1.0	初版	Miaolin	2023.10.18
V1.1	R/W 寄存器增加地址备注	Miaolin	2024.07.28
V1.2	1、 新增 DCDC 柜 8 个支路寄存器数据点； 2、 修改 EMS 设备地址范围；	Miaolin	2024.08.20

3. Parameter address table

Address Register	variable	Belong to R/W	Data format	Data Model	Remarks
Industry Remote Control Parameter					
020CH	EMS_mode	R/W	Occupy 2 byte	unsigned short	0: Local_auto_mode 1: Remote_mode 2: Local_manual_mode 3: Modbus_tcp_mode (Unit Identifier: 1)
07D0H	Active power setpoint	R/W	Occupy 2 byte	short	0.1kW/bit (Unit Identifier: 71~80)
07D1H	Reactive power setpoint	R/W	Occupy 2 byte	short	0.1kVar/bit (Unit Identifier: 71~80)
07D2H	Modle On/Off Command	R/W	Occupy 2 byte	unsigned short	0: mode off 1: mode on (Unit Identifier: 71~80)
07D3H	Failure clearance command	R/W	Occupy 2 byte	unsigned short	0: False 1: True (Unit Identifier: 71~80)
EMS Data (Unit Identifier:1)					
1389H	EMS status	RO	Occupy 2 byte	unsigned short	1: normal 2: warning 3: fault
138AH~ 138EH	Reserved				
138FH	protocol version number	RO	Occupy 2 byte	unsigned short	
1390H	Reserved				
1391H	DI1	RO	Occupy 2 byte	unsigned short	0: NA 1: trigger 2: No trigger

1392H	DI2	RO	Occupy 2 byte	unsigned short	Same as above
1393H	DI3	RO	Occupy 2 byte	unsigned short	Same as above
1394H	DI4	RO	Occupy 2 byte	unsigned short	Same as above
1395H	DI5	RO	Occupy 2 byte	unsigned short	Same as above
1396H	DI6	RO	Occupy 2 byte	unsigned short	Same as above
1397H	DI7	RO	Occupy 2 byte	unsigned short	Same as above
1398H	DI8	RO	Occupy 2 byte	unsigned short	Same as above
1399H	DI9	RO	Occupy 2 byte	unsigned short	Same as above
139AH	DI10	RO	Occupy 2 byte	unsigned short	Same as above
139BH	DI11	RO	Occupy 2 byte	unsigned short	Same as above
139CH	DI12	RO	Occupy 2 byte	unsigned short	Same as above
139DH	DI13	RO	Occupy 2 byte	unsigned short	Same as above
139EH	DI14	RO	Occupy 2 byte	unsigned short	Same as above
139FH	DI15	RO	Occupy 2 byte	unsigned short	Same as above
13A0H	DI16	RO	Occupy 2 byte	unsigned short	Same as above
13A1H~ 13B3H	Reserved				
13B4H	Updata target	RO	Occupy 2 byte	unsigned short	0：NA 1：EMS_TARGET 2：BAMS_TARGET 3：BCMU_TARGET 4：BLMU_TARGET 5：ISO_TARGET 6：PCS_TARGET 7：ACCP_TARGET
13B5H~ 13EBH	Reserved				
13ECH 13EDH	EMS fault information 1	RO	Occupy 4 byte	unsigned int	Note1

13EEH 13EFH	EMS fault information 2	RO	Occupy 4 byte	unsigned int	Note2
13F0H 13F1H	EMS fault information 3	RO	Occupy 4 byte	unsigned int	Note3
13F2H 13F3H	EMS fault information 4	RO	Occupy 4 byte	unsigned int	Note4
Battery Stack Data (Unit Identifier:191~200)					
1389H	Maximum charging current allowed	RO	Occupy 2byte	unsigned short	0.1A/bit
138AH	Maximum discharging current allowed	RO	Occupy 2byte	unsigned short	0.1A/bit
138BH	Total battery voltage	RO	Occupy 2byte	unsigned short	0.1V/bit
138CH	Total battery current	RO	Occupy 2byte	short	0.1A/bit
138DH	Insulated resistance	RO	Occupy 2 byte	unsigned short	kΩ
138EH	SOC	RO	Occupy 4 byte	unsigned short	0.1%
138FH	SOH	RO	Occupy 2 byte	unsigned short	0.1%
1390H	Allow charging flag	RO	Occupy 2 byte	unsigned short	0：no 1：yes
1391H	Allow discharging flag	RO	Occupy 2 byte	unsigned short	0：no 1：yes
1392H	apply charging flag	RO	Occupy 2 byte	unsigned short	0：no 1：yes
1393H	The environment temperature	RO	Occupy 2 byte	unsigned short	0.1℃/bit
1394H	Maximum pole temperature	RO	Occupy 2 byte	short	0.1℃/bit
1395H	Minimum monomer voltage	RO	Occupy 2 byte	short	0.001V/bit
1396H	Minimum voltage cluster number of the monomer	RO	Occupy 2 byte	short	
1397H	Single lowest voltage battery number	RO	Occupy 2 byte	short	
1398H	Minimum monomer voltage	RO	Occupy 2 byte	short	
1399H	Maximum monomer voltage	RO	Occupy 2 byte	short	0.001V/bit
139AH	The highest voltage cluster number of the monomer	RO	Occupy 2 byte	short	

139BH	Maximum single voltage battery number	RO	Occupy 2 byte	short	
139CH	Maximum voltage cell number	RO	Occupy 2 byte	short	
139DH	Minimum battery temperature	RO	Occupy 2 byte	short	0.1℃/bit
139EH	Minimum voltage cluster number of the monomer	RO	Occupy 2 byte	short	
139FH	Single lowest temperature battery number	RO	Occupy 2 byte	short	
13A0H	The lowest temperature of a monomer	RO	Occupy 2byte	short	
13A1H	Maximum monomer temperature	RO	Occupy 2byte	short	0.1℃/bit
13A2H	Monomer maximum temperature cluster no	RO	Occupy 2byte	short	
13A3H	Single maximum temperature battery number	RO	Occupy 2byte	short	
13A4H	Maximum temperature measurement point of monomer	RO	Occupy 2 byte	short	
13A5H 13A6H	BMS fault information 1	RO	Occupy 4 byte	unsigned int	Note5
13A7H 13A8H	BMS fault information 2	RO	Occupy 4 byte	unsigned int	
13A9H 13AAH	BMS fault information 3	RO	Occupy 4 byte	unsigned int	
13ABH 13ACH	BMS fault information 4	RO	Occupy 4 byte	unsigned int	
13ADH	communication status	RO	Occupy 2 byte	short	1: normal 0: lost
13AEH	Maximum pole temperature cluster number	RO	Occupy 2 byte	short	
13AFH	Maximum pole temperature battery number	RO	Occupy 2 byte	short	
13B0H	Maximum pole temperature measurement point	RO	Occupy 2 byte	short	
13B1H 13B2H	Total charge energy of battery stack	RO	Occupy 4 byte	unsigned int	0.1kWh/bit
13B3H 13B4H	Total discharge energy of battery stack	RO	Occupy 4 byte	unsigned int	0.1kWh/bit
13B5H	Total power of battery stack	RO	Occupy 2 byte	short	0.1kW/bit
13B6H	DI switch quantity state	RO	Occupy	unsigned	

13B7H			4byte	int	
13B8H 13B9H	DO switch quantity state	RO	Occupy 4 byte	unsigned int	
13BAH	Minimum pole temperature	RO	Occupy 2 byte	short	0.1℃/bit
13BBH	Minimum pole temperature cluster number	RO	Occupy 2 byte	short	
13BCH	Minimum pole temperature battery number	RO	Occupy 2 byte	short	
13BDH	Minimum pole temperature measurement point	RO	Occupy 2 byte	short	
13BEH	soc need calibration flag	RO	Occupy 2 byte	short	1：Calibration required 0：No calibration required
13BFH 13C0H	bms_fault5	RO	Occupy 4 byte	unsigned int	Note9
13C1H 13C2H	bms_fault6	RO	Occupy 4 byte	unsigned int	Note10
13C3H 13C4H	bms_fault7	RO	Occupy 4 byte	unsigned int	Note11
13C5H 13C6H	bms_fault8	RO	Occupy 4 byte	unsigned int	Note12
Battery cluster data (Unit Identifier:201~230)					
1389H	Cluster voltage	RO	Occupy 2 byte	unsigned short	0.1V/bit
138AH	Cluster Current	RO	Occupy 2 byte	short	0.1A/bit
138BH	SOC	RO	Occupy 2 byte	unsigned short	0.1%/bit
138CH	SOH	RO	Occupy 2 byte	unsigned short	0.1%/bit
138DH	Insulated resistance	RO	Occupy 2 byte	unsigned short	1kΩ/bit
138EH	Minimum monomer voltage	RO	Occupy 2 byte	short	0.001V/bit
138FH	Single lowest voltage battery number	RO	Occupy 2 byte	short	
1390H	Minimum monomer voltage	RO	Occupy 2 byte	short	
1391H	Maximum monomer voltage	RO	Occupy 2 byte	short	0.001V/Bit
1392H	Maximum single voltage battery	RO	Occupy	short	

	number		2 byte		
1393H	Maximum voltage cell number	RO	Occupy 2 byte	short	
1394H	Minimum battery temperature	RO	Occupy 2 byte	short	0.1℃/bit
1395H	Single lowest temperature battery number	RO	Occupy 2 byte	short	
1396H	Minimum temperature of a single cell	RO	Occupy 2 byte	short	
1397H	Maximum monomer temperature	RO	Occupy 2 byte	short	0.1℃/bit
1398H	Single maximum temperature battery number	RO	Occupy 2 byte	short	
1399H	Maximum temperature cell number	RO	Occupy 2 byte	short	
139AH	Main relay status	RO	Occupy 2 byte	short	
139BH	Precharged relay status	RO	Occupy 2 byte	short	
139CH	Negative relay status	RO	Occupy 2 byte	short	
139DH	Molded case circuit breaker status	RO	Occupy 2 byte	short	
139EH 139FH	bmu_fault1	RO	Occupy 4 byte	unsigned int	Note15
13A0H 13A1H	bmu_fault2	RO	Occupy 4 byte	unsigned int	Note16
13A2H 13A3H	bmu_fault3	RO	Occupy 4 byte	unsigned int	Note17
13A4H 13A5H	bmu_fault4	RO	Occupy 4 byte	unsigned int	Note18
13A6H	communication status	RO	Occupy 2 byte	int	
13A7H 13A8H	bmu_fault5	RO	Occupy 4 byte	unsigned int	Note19
13A9H 13AAH	bmu_fault6	RO	Occupy 4 byte	unsigned int	Note20
13ABH 13ACH	bmu_fault7	RO	Occupy 4 byte	unsigned int	Note21
13ADH 13AEH	bmu_fault8	RO	Occupy 4 byte	unsigned int	Note22
Industry PCS(DCAC) (Unit Identifier:71~80)					
1389H	AC line voltage A to B	RO	Occupy	unsigned	0.1V/Bit

			2 byte	short	
138AH	AC line voltage B to C	RO	Occupy 2 byte	unsigned short	0.1V/Bit
138BH	AC line voltage C to A	RO	Occupy 2 byte	unsigned short	0.1V/Bit
138CH	AC A current	RO	Occupy 2 byte	short	0.1A/Bit
138DH	AC B current	RO	Occupy 2 byte	short	0.1A/Bit
138EH	AC C current	RO	Occupy 2 byte	short	0.1A/Bit
138FH	AC Frequency	RO	Occupy 2 byte	unsigned short	0.01Hz/Bit
1390H	A active power	RO	Occupy 2 byte	short	0.1kW/Bit
1391H	B active power	RO	Occupy 2 byte	short	0.1kW/Bit
1392h	C active power	RO	Occupy 2 byte	short	0.1kW/Bit
1393H	A reactive power	RO	Occupy 2 byte	short	0.1kVar/Bit
1394H	B reactive power	RO	Occupy 2 byte	short	0.1kVar/Bit
1395H	C reactive power	RO	Occupy 2 byte	short	0.1kVar/Bit
1396H	A apparent power	RO	Occupy 2 byte	short	0.1kVA/Bit
1397H	B apparent power	RO	Occupy 2 byte	short	0.1kVA/Bit
1398H	C apparent power	RO	Occupy 2 byte	short	0.1kVA/Bit
1399H	A AC PF	RO	Occupy 2 byte	short	0.01PF/Bit
139AH	B AC PF	RO	Occupy 2 byte	short	0.01PF/Bit
139BH	C AC PF	RO	Occupy 2 byte	short	0.01PF/Bit
139CH	Total active power(Grid)	RO	Occupy 2 byte	short	0.1kW/Bit
139DH	Total reactive power(Grid)	RO	Occupy 2 byte	short	0.1kVar/Bit
139EH	Total apparent power(Grid)	RO	Occupy 2 byte	short	0.1kVA/Bit

139FH	Total AC PF	RO	Occupy 2 byte	short	0.01PF/Bit
13A0H	daily charged energy through AC port	RO	Occupy 2 byte	unsigned short	0.1kWh/Bit
13A1H	daily discharged energy through AC port	RO	Occupy 2 byte	unsigned short	0.1kWh/Bit
13A2H 13A3H	Accumulative charged energy	RO	Occupy 4 byte	unsigned int	0.1kWh/Bit
13A4H 13A5H	Accumulative discharged energy	RO	Occupy 4 byte	unsigned int	0.1kWh/Bit
13A6H	Module temperature	RO	Occupy 2 byte	short	0.1℃/Bit
13A7H	Ambient temperature	RO	Occupy 2 byte	short	0.1℃/Bit
13A8H	Grid interconnection mode	RO	Occupy 2 byte	short	0：Grid-tied 1：Off-grid
13A9H	Energy dispatching mode	RO	Occupy 2 byte	short	0: AC dispatching, 1: DC dispatching, 2: String dispatching(Active power)
13AAH	Start up mode	RO	Occupy 2 byte	short	0: Atuo startup, 1: Manual startup
13ABH	Control mode	RO	Occupy 2 byte	short	1: Local 2: Remote
13ACH	PF setpoint	RO	Occupy 2 byte	short	
13ADH	Active power setpoint	RO	Occupy 2 byte	short	
13AEH	Reactive power setpoint	RO	Occupy 2 byte	short	
13AFH	DCAC start-stop state	RO	Occupy 2 byte	unsigned short	0：mode off 1：mode on
13B0H	DCAC fault state	RO	Occupy 2 byte	unsigned short	
13B1H	DC String : start-stop state	RO	Occupy 2 byte	unsigned short	0：mode off 1：mode on
13B2H	DC String : fault state	RO	Occupy 2 byte	unsigned short	0：normal 1：fault
13B3H	DC String: DC power	RO	Occupy 2 byte	short	0.1kW/bit
13B4H	DC String: DC voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
13B5H	DC String: DC current	RO	Occupy	short	0.1A/Bit

			2 byte		
13B6H 13B7H	DC String: Accumulative charged energy	RO	Occupy 4 byte	unsigned int	0.1kWh/Bit
13B8H 13B9H	DC String: Accumulative discharged	RO	Occupy 4 byte	unsigned int	0.1kWh/Bit
13BAH	DC String: Photovoltaic power generation power	RO	Occupy 2 byte	short	0.1kW/bit
13BBH	DC String: Photovoltaic power generation voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
13BCH	DC String: Photovoltaic power generation current	RO	Occupy 2 byte	short	0.1A/Bit
13BDH 13BEH	Total DC branch: total photovoltaic power generation capacity	RO	Occupy 4 byte	unsigned int	0.1kWh/Bit
13BFH	DC control mode	RO	Occupy 2 byte	unsigned short	0: Fixed current, 1: Fixed power
13C0H	DC current setting	RO	Occupy 2 byte	short	0.1A/Bit
13C1H	DC power setting	RO	Occupy 2 byte	nshort	0.1kW/bit
13C2H	DC lower limit voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
13C3H	Average charge voltage of the battery	RO	Occupy 2 byte	unsigned short	0.1V/Bit
13C4H	Float charging voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
13C5H	Charging cut-off current	RO	Occupy 2 byte	unsigned short	0.1A/Bit
13C6H	Maximum charging current	RO	Occupy 2 byte	unsigned short	0.1A/Bit
13C7H	Maximum discharge current	RO	Occupy 2 byte	unsigned short	0.1A/Bit
13C8H 13C9H	DCAC fault message	RO	Occupy 4 byte	unsigned int	Note23
13CAH 13CBH	DCAC fault message	RO	Occupy 4 byte	unsigned int	Note24
13CCH 13CDH	DCAC fault message	RO	Occupy 4 byte	unsigned int	Note25
13CEH 13CFH	DCAC fault message	RO	Occupy 4 byte	unsigned int	Note26
13D0H	communication status	RO	Occupy 2 byte	short	1:normal 0:lost
Industry PCS(DCDC) (Unit Identifier:81~90)					

1389H	Start stop state	RO	Occupy 2 byte	unsigned short	0：Mode off 1：Mode on
138AH	Fault state	RO	Occupy 2 byte	unsigned short	0：normal 1：fault 2：warning
138BH	BUS side: power	RO	Occupy 4 byte	short	0.1kW/Bit
138CH	BUS side: voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
138DH	BUS side: current	RO	Occupy 2 byte	short	0.1A/Bit
138EH 138FH	BUS side: Accumulative charged energy	RO	Occupy 4 byte	unsigned int	0.1kWh/Bit
1390H 1391H	BUS side: Accumulative discharged energy	RO	Occupy 4 byte	unsigned int	0.1kWh/Bit
1392H	DC side: power	RO	Occupy 2 byte	short	0.1kW/Bit
1393H	DC side: voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
1394H	DC side: current	RO	Occupy 2 byte	short	0.1A/Bit
1395H 1396H	DC side: Accumulative discharged energy	RO	Occupy 4 byte	unsigned int	1kWh/Bit
1397H	DC side: control mode	RO	Occupy 2 byte	unsigned short	0: Fixed current, 1: Fixed power
1398H	DC side: current setting	RO	Occupy 2 byte	short	0.1A/Bit
1399H	DC side: power setting	RO	Occupy 2 byte	short	0.1kW/Bit
139AH	BUS side: lower limit voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
139BH	BUS side: Equalized charging voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
139CH	BUS side: Float charging voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
139DH	BUS side: Charging cut-off current	RO	Occupy 2 byte	unsigned short	0.1A/Bit
139EH	BUS side: Maximum charging current	RO	Occupy 2 byte	unsigned short	0.1A/Bit
139FH	BUS side: Maximum discharge current	RO	Occupy 2 byte	unsigned short	0.1A/Bit
13A0H 13A1H	DCDC fault message	RO	Occupy 4 byte	unsigned int	Note27
13A2H 13A3H	DCDC fault message	RO	Occupy 4 byte	unsigned int	Note28

13A4H 13A5H	DCDC fault message	RO	Occupy 4 byte	unsigned int	Note29
13A6H 13A7H	DCDC fault message	RO	Occupy 4 byte	unsigned int	
13A8H	communication status	RO	Occupy 2 byte	short	1: normal 0: lost
13A9H	Module temperature	RO	Occupy 2 byte	short	0.1℃/Bit
13AAH	Ambient temperature	RO	Occupy 2 byte	short	0.1℃/Bit
13ABH	control mode	RO	Occupy 2 byte	short	1. Local 2. Remote
.....					
DCDC Branch 1					
2711H	work state	RO	Occupy 2 byte	unsigned short	0 : mode off 1 : mode on 2 : sleep
2712H	fault state	RO	Occupy 2 byte	unsigned short	0 : normal 1 : fault 2 : warning
2713H	BUS side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2714H	DC side power	RO	Occupy 2 byte	short	0.1KW/Bit
2715H	DC side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2716H	DC side current	RO	Occupy 2 byte	short	0.1A/Bit
2717H 2718H	Total discharge energy of the DC	RO	Occupy 4 byte	unsigned int	0.1KWh/Bit
2719H	DC side sleep voltage	RO	Occupy 2 byte	short	0.1V/Bit
271AH	DC side max voltage	RO	Occupy 2 byte	short	0.1V/Bit
271BH	DC side max current	RO	Occupy 2 byte	short	0.1A/Bit
.....					
DCDC Branch 2					
27D9H	work state	RO	Occupy 2 byte	unsigned short	0 : mode off 1 : mode on 2 : sleep
27DAH	fault state	RO	Occupy 2 byte	unsigned short	0 : normal 1 : fault

					2 : warning
27DBH	BUS side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
27DCH	DC side power	RO	Occupy 2 byte	short	0.1KW/Bit
27DDH	DC side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
27DEH	DC side current	RO	Occupy 2 byte	short	0.1A/Bit
27DFH 27E0H	Total discharge energy of the DC	RO	Occupy 4 byte	unsigned int	0.1KWh/Bit
27E1H	DC side sleep voltage	RO	Occupy 2 byte	short	0.1V/Bit
27E2H	DC side max voltage	RO	Occupy 2 byte	short	0.1V/Bit
27E3H	DC side max current	RO	Occupy 2 byte	short	0.1A/Bit
.....					
DCDC Branch 3					
28A1H	work state	RO	Occupy 2 byte	unsigned short	0 : mode off 1 : mode on 2 : sleep
28A2H	fault state	RO	Occupy 2 byte	unsigned short	0 : normal 1 : fault 2 : warning
28A3H	BUS side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
28A4H	DC side power	RO	Occupy 2 byte	short	0.1KW/Bit
28A5H	DC side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
28A6H	DC side current	RO	Occupy 2 byte	short	0.1A/Bit
28A7H 28A8H	Total discharge energy of the DC	RO	Occupy 4 byte	unsigned int	0.1KWh/Bit
28A9H	DC side sleep voltage	RO	Occupy 2 byte	short	0.1V/Bit
28AAH	DC side max voltage	RO	Occupy 2 byte	short	0.1V/Bit
28ABH	DC side max current	RO	Occupy 2 byte	short	0.1A/Bit
.....					
DCDC Branch 4					

2969H	work state	RO	Occupy 2 byte	unsigned short	0 : mode off 1 : mode on 2 : sleep
296AH	fault state	RO	Occupy 2 byte	unsigned short	0 : normal 1 : fault 2 : warning
296BH	BUS side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
296CH	DC side power	RO	Occupy 2 byte	short	0.1KW/Bit
296DH	DC side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
296EH	DC side current	RO	Occupy 2 byte	short	0.1A/Bit
296FH 2970H	Total discharge energy of the DC	RO	Occupy 4 byte	unsigned int	0.1KWh/Bit
2971H	DC side sleep voltage	RO	Occupy 2 byte	short	0.1V/Bit
2972H	DC side max voltage	RO	Occupy 2 byte	short	0.1V/Bit
2973H	DC side max current	RO	Occupy 2 byte	short	0.1A/Bit
.....					
DCDC Branch 5					
2A31H	work state	RO	Occupy 2 byte	unsigned short	0 : mode off 1 : mode on 2 : sleep
2A32H	fault state	RO	Occupy 2 byte	unsigned short	0 : normal 1 : fault 2 : warning
2A33H	BUS side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2A34H	DC side power	RO	Occupy 2 byte	short	0.1KW/Bit
2A35H	DC side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2A36H	DC side current	RO	Occupy 2 byte	short	0.1A/Bit
2A37H 2A38H	Total discharge energy of the DC	RO	Occupy 4 byte	unsigned int	0.1KWh/Bit
2A39H	DC side sleep voltage	RO	Occupy 2 byte	short	0.1V/Bit
2A3AH	DC side max voltage	RO	Occupy 2 byte	short	0.1V/Bit

2A3BH	DC side max current	RO	Occupy 2 byte	short	0.1A/Bit
.....					
DCDC Branch 6					
2AF9H	work state	RO	Occupy 2 byte	unsigned short	0 : mode off 1 : mode on 2 : sleep
2AFAH	fault state	RO	Occupy 2 byte	unsigned short	0 : normal 1 : fault 2 : warning
2AFBH	BUS side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2AFCH	DC side power	RO	Occupy 2 byte	short	0.1KW/Bit
2AFDH	DC side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2AFEH	DC side current	RO	Occupy 2 byte	short	0.1A/Bit
2AFFH 2B00H	Total discharge energy of the DC	RO	Occupy 4 byte	unsigned int	0.1KWh/Bit
2B01H	DC side sleep voltage	RO	Occupy 2 byte	short	0.1V/Bit
2B02H	DC side max voltage	RO	Occupy 2 byte	short	0.1V/Bit
2B03H	DC side max current	RO	Occupy 2 byte	short	0.1A/Bit
.....					
DCDC Branch 7					
2BC1H	work state	RO	Occupy 2 byte	unsigned short	0 : mode off 1 : mode on 2 : sleep
2BC2H	fault state	RO	Occupy 2 byte	unsigned short	0 : normal 1 : fault 2 : warning
2BC3H	BUS side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2BC4H	DC side power	RO	Occupy 2 byte	short	0.1KW/Bit
2BC5H	DC side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2BC6H	DC side current	RO	Occupy 2 byte	short	0.1A/Bit
2BC7H 2BC8H	Total discharge energy of the DC	RO	Occupy 4 byte	unsigned int	0.1KWh/Bit

2BC9H	DC side sleep voltage	RO	Occupy 2 byte	short	0.1V/Bit
2BCAH	DC side max voltage	RO	Occupy 2 byte	short	0.1V/Bit
2BCBH	DC side max current	RO	Occupy 2 byte	short	0.1A/Bit
.....					
DCDC Branch 8					
2C89H	work state	RO	Occupy 2 byte	unsigned short	0 : mode off 1 : mode on 2 : sleep
2C8AH	fault state	RO	Occupy 2 byte	unsigned short	0 : normal 1 : fault 2 : warning
2C8BH	BUS side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2C8CH	DC side power	RO	Occupy 2 byte	short	0.1KW/Bit
2C8DH	DC side voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
2C8EH	DC side current	RO	Occupy 2 byte	short	0.1A/Bit
2C8FH 2C90H	Total discharge energy of the DC	RO	Occupy 4 byte	unsigned int	0.1KWh/Bit
2C91H	DC side sleep voltage	RO	Occupy 2 byte	short	0.1V/Bit
2C92H	DC side max voltage	RO	Occupy 2 byte	short	0.1V/Bit
2C93H	DC side max current	RO	Occupy 2 byte	short	0.1A/Bit
.....					
Industry Meter (Unit Identifier:101~179)					
1386H 1387H	A phase Voltage	RO	Occupy 4 byte	unsigned int	0.1V/Bit
1388H 1389H	B phase Voltage	RO	Occupy 4 byte	unsigned int	0.1V/Bit
138AH 138BH	C phase Voltage	RO	Occupy 4 byte	unsigned int	0.1V/Bit
138CH 138DH	A phase Current	RO	Occupy 4 byte	int	0.1A/Bit
138EH 138FH	B phase Current	RO	Occupy 4 byte	int	0.1A/Bit
1390H	C phase Current	RO	Occupy	int	0.1A/Bit

1391H			4 byte		
1392H	Frequent	RO	Occupy 2 byte	unsigned short	0.01Hz/Bit
1393H	A PF	RO	Occupy 2 byte	short	0.01PF/Bit
1394H	B PF	RO	Occupy 2 byte	short	0.01PF/Bit
1395H	C PF	RO	Occupy 2 byte	short	0.01PF/Bit
1396H	Total PF	RO	Occupy 2 byte	short	0.01PF/Bit
1397H 1398H	A active power	RO	Occupy 4 byte	int	0.1kW/Bit
1399H 139AH	B active power	RO	Occupy 4 byte	int	0.1kW/Bit
139BH 139CH	C active power	RO	Occupy 4 byte	int	0.1kW/Bit
139DH 139EH	A reactive power	RO	Occupy 4 byte	int	0.1kVar/Bit
139FH 13A0H	B reactive power	RO	Occupy 4 byte	int	0.1kVar/Bit
13A1H 13A2H	C reactive power	RO	Occupy 4 byte	int	0.1kVar/Bit
13A3H 13A4H	A apparent power	RO	Occupy 4 byte	int	0.1kVA/Bit
13A5H 13A6H	B apparent power	RO	Occupy 4 byte	int	0.1kVA/Bit
13A7H 13A8H	C apparent power	RO	Occupy 4 byte	int	0.1kVA/Bit
13A9H 13AAH	Total Active power	RO	Occupy 4 byte	int	0.1kW/Bit
13ABH 13ACH	Total reactive power	RO	Occupy 4 byte	int	0.1kVar/bit
13ADH 13AEH	Total apparent power	RO	Occupy 4 byte	int	0.1kVA/Bit
13AFH 13B0H	Positive active electric energy	RO	Occupy 4 byte	unsigned int	0.01kWh/Bit
13B1H 13B2H	Reverse active electric energy	RO	Occupy 4 byte	unsigned int	0.01kWh/Bit
13B3H 13B4H	The current maximum positive active power demand	RO	Occupy 4 byte	unsigned int	0.01kW/Bit
13B5H	communication status	RO	Occupy 2 byte	short	1: normal 0: lost

13B6H	ct_ratio	RO	Occupy 2 byte	short	
13B7H	pt_ratio	RO	Occupy 2 byte	unsigned short	
13B8H	Reserved4	RO	Occupy 2 byte	short	
13B9H	Reserved5	RO	Occupy 2 byte	short	
13BAH	Reserved6	RO	Occupy 2 byte	short	
13BBH	Reserved7	RO	Occupy 2 byte	short	
13BCH	Reserved8	RO	Occupy 2 byte	short	
13BDH	Reserved9	RO	Occupy 2 byte	short	
Industry STS data (Unit Identifier:91~100)					
1389H	Line voltage between A to B(Grid)	RO	Occupy 2 byte	unsigned short	0.1V/Bit
138AH	Line voltage between B to C(Grid)	RO	Occupy 2 byte	unsigned short	0.1V/Bit
138BH	Line voltage between C to A(Grid)	RO	Occupy 2 byte	unsigned short	0.1V/Bit
138CH	A phase current(Grid)	RO	Occupy 2 byte	short	0.1A/Bit
138DH	B phase current(Grid)	RO	Occupy 2 byte	short	0.1A/Bit
138EH	C phase current(Grid)	RO	Occupy 2 byte	short	0.1A/Bit
138FH	Frequency(Grid)	RO	Occupy 2 byte	unsigned short	0.01Hz/Bit
1390H	A active power(Grid)	RO	Occupy 2 byte	short	0.1kW/Bit
1391H	B active power(Grid)	RO	Occupy 2 byte	short	0.1kW/Bit
1392H	C active power(Grid)	RO	Occupy 2 byte	short	0.1kW/Bit
1393H	A reactive power(Grid)	RO	Occupy 2 byte	short	0.1kVar/Bit
1394H	B reactive power(Grid)	RO	Occupy 2 byte	short	0.1kVar/Bit
1395H	C reactive power(Grid)	RO	Occupy 2 byte	short	0.1kVar/Bit

1396H	A apparent power(Grid)	RO	Occupy 2 byte	short	0.1kVA/Bit
1397H	B apparent power(Grid)	RO	Occupy 2 byte	short	0.1kVA/Bit
1398H	C apparent power(Grid)	RO	Occupy 2 byte	short	0.1kVA/Bit
1399H	A PF(Grid)	RO	Occupy 2 byte	short	0.01PF/Bit
139AH	B PF(Grid)	RO	Occupy 2 byte	short	0.01PF/Bit
139BH	C PF(Grid)	RO	Occupy 2 byte	short	0.01PF/Bit
139CH	Total active power(Grid)	RO	Occupy 2 byte	short	0.1kW/Bit
139DH	Total reactive power(Grid)	RO	Occupy 2 byte	short	0.1kVar/Bit
139EH	Total apparent power(Grid)	RO	Occupy 2 byte	short	0.1kVA/Bit
139FH	Total PF (Grid)	RO	Occupy 2 byte	short	0.01PF/Bit
13A0H	Line voltage between A to B(Load)	RO	Occupy 2 byte	unsigned short	0.1V/Bit
13A1H	Line voltage between B to C(Load)	RO	Occupy 2 byte	unsigned short	0.1V/Bit
13A2H	Line voltage between C to A(Load)	RO	Occupy 2 byte	unsigned short	0.1V/Bit
13A3H	A current(Load)	RO	Occupy 2 byte	short	0.1A/Bit
13A4H	B current(Load)	RO	Occupy 2 byte	short	0.1A/Bit
13A5H	C current(Load)	RO	Occupy 2 byte	short	0.1A/Bit
13A6H	Frequency(Load)	RO	Occupy 2 byte	unsigned short	0.01Hz/Bit
13A7H	A active power(Load)	RO	Occupy 2 byte	short	0.1kW/Bit
13A8H	B active power(Load)	RO	Occupy 2 byte	short	0.1kW/Bit
13A9H	C active power(Load)	RO	Occupy 2 byte	short	0.1kW/Bit
13AAH	A reactive power(Load)	RO	Occupy 2 byte	short	0.1kVar/Bit
13ABH	B reactive power(Load)	RO	Occupy 2 byte	short	0.1kVar/Bit

13ACH	C reactive power(Load)	RO	Occupy 2 byte	short	0.1kVar/Bit
13ADH	A apparent power(Load)	RO	Occupy 2 byte	short	0.1kVA/Bit
13AEH	B apparent power(Load)	RO	Occupy 2 byte	short	0.1kVA/Bit
13AFH	C apparent power(Load)	RO	Occupy 2 byte	short	0.1kVA/Bit
13B0H	A PF(Load)	RO	Occupy 2 byte	short	0.01PF/Bit
13B1H	B PF(Load)	RO	Occupy 2 byte	short	0.01PF/Bit
13B2H	C PF(Load)	RO	Occupy 2 byte	short	0.01PF/Bit
13B3H	Total active power(Load)	RO	Occupy 2 byte	short	
13B4H	Total reactive power(Load)	RO	Occupy 2 byte	short	
13B5H	Total apparent power(Load)	RO	Occupy 2 byte	short	
13B6H	Total PF (Load)	RO	Occupy 2 byte	short	
13B7H	STS_CommTimeout	RO	Occupy 2 byte	unsigned short	0: Not limited t: t (s)
13B8H 13B9H	STS fault message	RO	Occupy 4 byte	unsigned int	Note30
13BAH 13BBH	STS fault message	RO	Occupy 4 byte	unsigned int	Note31
13BCH	communication status	RO	Occupy 2 byte	short	1: normal 0: lost
13BDH	Grid interconnection mode	RO	Occupy 2 byte	short	0: Grid-tied 1: Off-grid
13BEH	work state	RO	Occupy 2 byte	short	1: normal 2: warning 3: fault
13BFH	reserve4	RO	Occupy 2 byte	short	
13C0H	reserve5	RO	Occupy 2 byte	short	
13C1H	reserve6	RO	Occupy 2 byte	short	
13C2H	reserve7	RO	Occupy 2 byte	short	
13C3H	reserve8	RO	Occupy	short	

			2 byte		
13C4H	reserve9	RO	Occupy 2 byte	short	
13C5H	reserve10	RO	Occupy 2 byte	short	
13C6H	reserve11	RO	Occupy 2 byte	short	
Industry PV INV (Unit Identifier:21~30)					
1389H	Active regulator	RO	Occupy 2 byte	unsigned short	1%/Bit
138AH	A Phase voltage	RO	Occupy 12 byte	unsigned short	0.1V/Bit
138BH	B Phase voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
138CH	C Phase voltage	RO	Occupy 2 byte	unsigned short	0.1V/Bit
138DH	A Phase current	RO	Occupy 2 byte	short	0.1A/Bit
138EH	B Phase current	RO	Occupy 2 byte	short	0.1A /Bit
138FH	C Phase current	RO	Occupy 2 byte	short	0.1A /Bit
1390H	A Phase frequency	RO	Occupy 2 byte	unsigned short	0.01Hz/Bit
1391H	B Phase frequency	RO	Occupy 2 byte	short	0.01Hz/Bit
1392H	C Phase frequency	RO	Occupy 2 byte	short	0.01Hz/Bit
1393H	Feed Engery to grid in today	RO	Occupy 2 byte	short	0.1 kWh/Bit
1394H	Feedingpower	RO	Occupy 2 byte	short	0.1 kW/Bit
1395H	Work Mode	RO	Occupy 2 byte	short	Note32
1396H	Inverter internaltemperature	RO	Occupy 2 byte	short	0.01℃/Bit
1397H 1398H	Total Feed Energy togrid	RO	Occupy 4 byte	unsigned int	0.1kWh/Bit
1399H 139AH	Fault information1	RO	Occupy 4 byte	unsigned int	Note33
139BH 139CH	Fault information1	RO	Occupy 4 byte	unsigned int	
139DH	communication status	RO	Occupy	short	

			2 byte		
139EH	real communication status	RO	Occupy 2 byte	short	1: normal 0: lost
139FH	mppt voltage 1	RO	Occupy 2 byte	short	0.1V/Bit
13A0H	mppt voltage 2	RO	Occupy 2 byte	short	0.1V/Bit
13A1H	mppt voltage 3	RO	Occupy 2 byte	short	0.1V/Bit
13A2H	mppt voltage 4	RO	Occupy 2 byte	short	0.1V/Bit
13A3H	mppt voltage 5	RO	Occupy 2 byte	short	0.1V/Bit
13A4H	mppt voltage 6	RO	Occupy 2 byte	short	0.1V/Bit
13A5H	mppt voltage 7	RO	Occupy 2 byte	short	0.1V/Bit
13A6H	mppt voltage 8	RO	Occupy 2 byte	short	0.1V/Bit
13A7H	mppt voltage 9	RO	Occupy 2 byte	short	0.1V/Bit
13A8H	mppt voltage 10	RO	Occupy 2 byte	short	0.1V/Bit
13A9H	mppt voltage 11	RO	Occupy 2 byte	short	0.1V/Bit
13AAH	mppt voltage 12	RO	Occupy 2 byte	short	0.1V/Bit
13ABH	mppt current 1	RO	Occupy 2 byte	short	0.1A/Bit
13ACH	mppt current 2	RO	Occupy 2 byte	short	0.1A/Bit
13ADH	mppt current 3	RO	Occupy 2 byte	short	0.1A/Bit
13AEH	mppt current 4	RO	Occupy 2 byte	short	0.1A/Bit
13AFH	mppt current 5	RO	Occupy 2 byte	short	0.1A/Bit
13B0H	mppt current 6	RO	Occupy 2 byte	short	0.1A/Bit
13B1H	mppt current 7	RO	Occupy 2 byte	short	0.1A/Bit
13B2H	mppt current 8	RO	Occupy 2 byte	short	0.1A/Bit

13B3H	mppt current 9	RO	Occupy 2 byte	short	0.1A/Bit
13B4H	mppt current 10	RO	Occupy 2 byte	short	0.1A/Bit
13B5H	mppt current 11	RO	Occupy 2 byte	short	0.1A/Bit
13B6H	mppt current 12	RO	Occupy 2 byte	short	0.1A/Bit
Air-condition data (Unit Identifier:231~240)					
1389H	Working condition of equipment	RO	Occupy 2 byte	short	1: Standby 2: Run 3: Fault
138AH	Cabinet return air temperature (indoor temperature)	RO	Occupy 2 byte	short	0.1℃/Bit
138BH	Air return humidity inside the cabinet (indoor humidity)	RO	Occupy 2 byte	short	0.1%/Bit
138CH~ 138FH	Reserved				
1390H	Refrigeration stopping point	RO	Occupy 2 byte	short	0.1℃/Bit
1391H	Refrigeration return difference	RO	Occupy 2 byte	short	0.1℃/Bit
1392H	Heating stop point	RO	Occupy 2 byte	short	0.1℃/Bit
1393H	Heating return difference	RO	Occupy 2 byte	Unsigned short	0.1℃/Bit
1394H~ 1396H	Reserved				
1397H 1398H	Air conditioning warning information	RO	Occupy 4 byte	unsigned int	Note34
1399H 139AH	Air conditioning warning information	RO	Occupy 4 byte	unsigned int	
139BH	communication status	RO	Occupy 2 byte	short	1: normal 0: lost
139CH	electric heater state	RO	Occupy 2 byte	short	0： cease 1： run
139DH	compressor state	RO	Occupy 2 byte	short	0： cease 1： run

4.Annex

4.1 Note1

bit	Data parsing	解析
0	ATS_switch_fault	ATS 切换异常
1	RRCR_fault	RRCR 装置异常
2		
3		
4		
5	Gps_lost	GPS 通讯丢失
6		
7	SD lost	SD 卡丢失
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18	DG_PV_Conflict	油机和光伏冲突
19	PV_INV_Fault	光伏逆变器故障
20	AirConFault	空调故障
21		
22		
23	GC_Fault	油机故障
24		
25	OverCurr	过流故障
26	PCSModeFault	PCS 工作模式错误
27	BatEnergyLow	电池能量低故障
28		
29		
30		
31		

4.2 Note2

bit	Data parsing	解析	Status
0	YX_system_epo_signal	急停信号	fault
1	YX_main_switch_feedback	配电总开关分闸反馈（仅 H30 有 PCS 输出端）	info
2	YX_fire_system_fault	消防系统故障	warning
3	YX_fire_warning	消防告警（温度/烟雾/可燃气体告警）	fault
4	YX_fire_action	消防动作	fault
5	YX_ATS grid_signal	双电源开关主电信号	info
6	YX_ATS backup_signal	双电源开关备电信号	info
7	YX_SPD_signal (Lightening Strike)	SPD 信号（雷击）	warning
8	YX_water_signal	水浸信号	fault
9	YX_door_signal	门禁信号	info
10	YX_rrcr_k1_signal	RRCR_K1	info
11	YX_rrcr_k2_signal	RRCR_K2	info
12	YX_rrcr_k3_signal	RRCR_K3	info
13	YX_rrcr_k4_signal	RRCR_K4	info
14			
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29			
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4.3 Note3

Reserved

4.4 Note4

Reserved

4.5 Note5

bit	Data parsing	解析	Status
0	BMU_SN_repeat	BMU SN 重复	warning
1	BMU_ID_repeat	BMU ID 重复	warning
2	BMU_ID_discontinue	BMU ID 不连续	warning
3	Cluster_LMU_num_diff	各簇 LMU 数量不一致	warning
4	EMS_com_loss	EMS 通讯丢失判断	warning
5	Cluster_volt_diff	簇总压差异检测	warning
6	BMU_parallel_failure	并机失败检测	warning
7	None_BMU_eror	无 BMU 报警	warning
8			
9	LMU_software_verion_diff	LMU 软件版本不一致	warning
10	ISO_software_version_diff	ISO 软件版本不一致	warning
11	BMU_software_version_diff	BMU 软件版本不一致	warning
12	SOC too high	SOC 过高	warning
13	SOC too low	SOC 过低	warning
14	BCMU config para diff	BCMU 配置参数不一致	warning
15			
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29			
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4.6 Note6

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4.7 Note7

bit	Data parsing	解析	Status
0			
1	Battery Pole_over_temp	极柱过温	fault
2	Cell_over_temp	单体过温	fault
3	Chag_low_temp	充电低温	fault
4	Dchg_low_temp	放电低温	fault
5	Cell_temp_diff	温差	fault
6	Cell_over_volt	单体过压	fault
7	Cell_low_volt	单体欠压	fault
8	Chag_over_current	充电过流	fault
9	Dchg_over_current	放电过流	fault
10	Insulation_err	绝缘故障	fault
11	LMU_com_err	BLMU 通讯故障	fault
12	TOPBMU_com_err	TOPBMU 通讯故障	fault
13	Temp_sensor_err	温度传感器损坏	fault
14	Relay_err	继电器故障	fault
15	INV com err	逆变器通信故障	fault
16	Shutdown under voltage	欠压关机故障	fault
17	Total_volt_err	总压检测异常	fault
18	ISO_communication_lost	ISO 通讯丢失	fault
19	LMU_SN_repeat	BLMU SN 重复	fault
20	LMU_ID_repeat	BLMU ID 重复	fault
21	LMU_ID_discontinue	BLMU ID 不连续	fault
22	Current_sensor_err	电流传感器损坏	fault
23	EMS communication lost	EMS 通讯丢失	info

24	no BLMU fault	无 BLMU 故障	info
25	BMU_ID_repeat	BMU ID 重复	fault
26	Overvoltage shutdown	过压关机故障	fault
27	MCCB_fault	塑壳断路器故障	fault
28	Cell_volt_diff	压差故障	fault
29	Cluster_over_volt	簇电压过压	fault
30	Cluster_low_volt	簇电压欠压	fault
31	HV_box_over_temp	BCMU 高压箱过温	fault

4.8 Note8

bit	Data parsing	解析	Status
0	EMS cut	EMS 单切	info
1	BLMU ID allocation exception	BLMU ID 分配异常	fault
2	Abnormal voltage difference between front and rear ends of high voltage box	高压箱前后端电压不一致	fault
3	BCMU high voltage box wiring harness disconnection	BCMU 高压箱线束断线	fault
4	ISO link exception	ISO 模块链路异常	fault
5	precharge failure	系统预充异常	fault
6	BMU_SN_repeat	BCMU SN 重复	fault
7			
8			
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10			
11			
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4.9 Note9

bit	Data parsing	解析	Status	备注
0	Battery	极柱过温	warning	0：No Warning
1	Pole_over_temp			1：Level I Fault
2				2：Level II Fault
3				3：Level III Fault
4				
5				
6				
7				
8	Cell_over_temp	电芯过温	warning	0：No Warning
9				1：Level I Fault
10				2：Level II Fault
11				3：Level III Fault
12				
13				
14				
15				
16	Charge_low_temp	电芯充电低温	warning	0：No Warning
17				1：Level I Fault
18				2：Level II Fault
19				3：Level III Fault
20				
21				
22				
23				
24	Discharge_low_temp	电芯放电低温	warning	0：No Warning
25				1：Level I Fault
26				2：Level II Fault
27				3：Level III Fault
28				

29				
30				
31				

4.10 Note10

bit	Data parsing	解析	Status	备注
0	Cell_temp_diff	电芯温差	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
1				
2				
3				
4				
5				
6				
7				
8	Cell_over_volt	电芯过压	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
9				
10				
11				
12				
13				
14				
15				
16	Cell_low_volt	电芯欠压	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
17				
18				
19				
20				
21				
22				
23				
24	Cell_volt_diff	电芯压差	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
25				
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4.11 Note11

bit	Data parsing	解析	Status	备注
0	Cluster_over_volt	簇电压过压	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
1				
2				
3				
4				
5				
6				
7				
8	Cluster_low_volt	簇电压欠压	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
9				
10				
11				
12				
13				
14				
15				
16	Module_charge_over_current	模组充电过流	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
17				
18				
19				
20				
21				
22				
23				
24	Module_discharge_over_current	模组放电过流	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
25				
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4.12 Note12

bit	Data parsing	解析	Status	备注
0	Insulation_err	绝缘故障	warning	0：No Warning

1				1：Level I Fault 2：Level II Fault 3：Level III Fault
2				
3				
4				
5				
6				
7				
8	SOC low	SOC 低	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
9				
10				
11				
12				
13				
14				
15				
16	HV_box_over_temp	高压箱温度高	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
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4.13 Note13

bit	**Panel Screen Print**	**Interface Description**
0	DI1	Fire-fighting low concentration alarm
1	DI2	
2	DI3	QS Fault Alarm Feedback

3	DI4	Fire Alarm Fire Alarm
4	DI5	Fire Cylinder Operation Signal
5	DI6	Failure of the fire-fighting system
6	DI7	PCS downtime feedback
7	DI8	SPD signal
8	DI9	Flood signal
9	DI10	Access control signals
10	DI11	QS shunt release signal feedback
11	DI12	
12	DI13	
13	DI14	
14	DI15	emergency stop
15	DI16	
16		
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4.14 Note14

bit	**Panel Screen Print**	**Interface Description**
0	DO1	Distribution main switch tap control
1	DO2	System Failure Indicator

2	DO3	BMS fault signal feedback/request for PCS shutdown
3	DO4	QS Split Gate Control
4	DO5	QS closing control
5	DO6	
6	DO7	
7	DO8	
8	DO9	
9	DO10	
10	DO11	
11	DO12	
12	DO13	
13	DO14	
14	DO15	
15	DO16	
16		
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4.15 Note15

bit	Data parsing	解析	Status
0			
1	Chag_over_current	充电过流报警	warning

2	Dchg_over_current	放电过流报警	warning
3	Pole_over_temp	极柱高温报警	warning
4	Cell_over_temp	CELL 高温报警	warning
5	Chag_low_temp	充电低温报警	warning
6	Dchg_low_temp	放电低温报警	warning
7	Cell_over_volt	单体过压报警	warning
8	Cell_low_volt	单体欠压报警	warning
9	Cell_temp_diff	单体温差报警	warning
10	Cell_volt_diff	单体压差报警	warning
11	Insulation_err	绝缘报警	warning
12	LMU_com_err	LMU 通讯故障报警	warning
13	Temp_sen_err	温度传感器故障	warning
14	LMU_wire_err	线束故障	warning
15	BMU_com_err	高压箱通讯故障	warning
16	Total_volt_err	总压检测异常报警	warning
17	Relay_err	继电器故障	warning
18	BMU_cut_station	簇切除状态	warning
19	ISO_com_err	ISO 通讯丢失报警	warning
20	LMU_SN_repeat	LMU SN 重复	warning
21	LMU_ID_repeat	LMU ID 重复	warning
22	LMU_ID_discontinue	LMU ID 不连续	warning
23	Current_sensor_err	电流传感器失效	warning
24	None_LMU_err	无 LMU 故障	warning
25	None_ISO_boot	ISO 无底层故障	warning
26	MCCB_fault	塑壳断路器故障	warning
27	Fan_fault	风扇故障	warning
28	BLMU_config_abnormal	BLMU 配置参数不一致	warning
29	temperature rise fault	温升故障	warning
30	BLMU ID allocation exception	BLMU ID 分配异常	warning
31	BLMU software version is inconsistent	BLMU 软件版本不一致	warning

4.16 Note16

bit	Data parsing	解析
0	Overvoltage shutdown	过压关机
1	Shutdown under voltage	欠压关机

2	High pressure box temperature sensor off line	高压箱温度传感器断线
3	Abnormal voltage difference between front and rear ends	前后端电压差异常
4	Board level hardware failure	板级硬件故障
5	ISO link exception	ISO 链路异常
6	precharge failure	预充故障
7	Abnormal network module	网络模块异常
8	BLMU AFE abnormality	BLMU AFE 异常
9	BLMU hardware failure	BLMU 硬件故障
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4.17 Note17

bit	Data parsing	解析	Status
0			
1	Pole_over_temp	极柱过温	fault

2	Cell_over_temp	单体过温	fault
3	Chag_low_temp	充电低温	fault
4	Dchg_low_temp	放电低温	fault
5	Cell_temp_diff	温差	fault
6	Cell_over_volt	单体过压	fault
7	Cell_low_volt	单体欠压	fault
8	Chag_over_current	充电过流	fault
9	Dchg_over_current	放电过流	fault
10	Insulation_err	绝缘故障	fault
11	LMU_com_err	BLMU 通讯故障	fault
12	TOPBMU_com_err	TOPBMU 通讯故障	fault
13	Temp_sen_err	温度传感器损坏	fault
14	Relay_err	继电器故障	fault
15	INV com err	逆变器通信故障	fault
16	Shutdown under voltage	欠压关机故障	fault
17	Total_volt_err	总压检测异常	fault
18	ISO_com_err	ISO 通讯丢失	fault
19	LMU_SN_repeat	BLMU SN 重复	fault
20	LMU_id_repeat	BLMU ID 重复	fault
21	LMU_id_discontinue	BLMU ID 不连续	fault
22	Current_sensor_err	电流传感器损坏	fault
23	ems com lost	EMS 通讯丢失	info
24	no blmu fault	无 BLMU 故障	info
25	BMU_id_repeat	BMU ID 重复	fault
26	Overvoltage shutdown	过压关机故障	fault
27	MCCB_fault	塑壳断路器故障	fault
28	Cell_volt_diff	压差故障	fault
29	Cluster_over_volt	簇电压过压	fault
30	Cluster_low_volt	簇电压欠压	fault
31	HV_box_over_temp	BCMU 高压箱过温	fault

4.18 Note18

bit	Data parsing	解析	Status
0	ems cut	EMS 单切	info
1	BLMU ID allocation exception	BLMU ID 分配异常	fault
2	Abnormal voltage difference between front and rear ends	高压箱前后端电压不一致	fault

3	BCMU high voltage box wiring harness disconnection	BCMU 高压箱线束断线	fault
4	ISO link exception	ISO 模块链路异常	fault
5	precharge failure	系统预充异常	fault
6	BMU_sn_repeat	BCMU SN 重复	fault
7			
8			
9			
10			
11			
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13			
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4.19 Note19

bit	Data parsing	解析	Status	备注
0	Battery	极柱过温	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
1	Pole_over_temp			
2				
3				
4				
5				

6				
7				
8	Cell_over_temp	电芯过温	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
9				
10				
11				
12				
13				
14				
15				
16	Charge_low_temp	电芯充电低温	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
17				
18				
19				
20				
21				
22				
23				
24	Discharge_low_temp	电芯放电低温	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
25				
26				
27				
28				
29				
30				
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4.20 Note20

bit	Data parsing	解析	Status	备注
0	Cell_temp_diff	电芯温差	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
1				
2				
3				
4				
5				
6				
7				
8	Cell_over_volt	电芯过压	warning	0：No Warning 1：Level I Fault 2：Level II Fault
9				
10				

11				3：Level III Fault
12				
13				
14				
15				
16	Cell_low_volt	电芯欠压	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
17				
18				
19				
20				
21				
22				
23				
24	Cell_volt_diff	电芯压差	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
25				
26				
27				
28				
29				
30				
31				

4.21 Note21

bit	Data parsing	解析	Status	备注
0	Cluster_over_volt	簇电压过压	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
1				
2				
3				
4				
5				
6				
7				
8	Cluster_low_volt	簇电压欠压	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
9				
10				
11				
12				
13				
14				
15				

16 17 18 19 20 21 22 23	Module_charge_over_current	模组充电过流	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
24 25 26 27 28 29 30 31	Module_discharge_over_current	模组放电过流	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault

4.22 Note22

bit	Data parsing	解析	Status	备注
0 1 2 3 4 5 6 7	Insulation_err	绝缘故障	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
8 9 10 11 12 13 14 15	SOC low	SOC 低	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault
16 17 18 19 20	HV_box_over_temp	高压箱温度高	warning	0：No Warning 1：Level I Fault 2：Level II Fault 3：Level III Fault

21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
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4.23 Note23

bit	Data parsing	解析
0	AC-Group: AC bus over voltage	AC 模块组：交流母线过压
1	AC-Group: AC bus over frequency	AC 模块组：交流母线过频
2	AC-Group: AC bus under voltage	AC 模块组：交流母线欠压
3	AC-Group: islanding protection	AC 模块组：逆变器孤岛保护
4	AC-Group: DC input over voltage	AC 模块组：直流输入过压
5	AC-Group: On/Off-grid toggling error	AC 模块组：并离网切换错误
6	AC-Group: AC phase reversed	AC 模块组：交流反序
7	AC-Group: DC input under voltage	AC 模块组：直流输入欠压
8	AC-Group: Overload alarm	AC 模块组：过载报警
9	AC-Group: AC bus voltage Abnormal	AC 模块组：交流母线电压异常
10	AC-Group: AC phase lost	AC 模块组：交流缺相
11	AC-Group: AC bus voltage asymmetric	AC 模块组：交流母线电压不平衡
12	AC-Group: AC bus under frequency	AC 模块组：交流母线欠频
13	AC-Group: Battery under energy	AC 模块组：电池电量不足
14	AC-Group: DC input over current	AC 模块组：直流输入过流
15	AC-Group: Off-grid Volt phase reversed	AC 模块组：离网电压反序
16	AC-Group: PLL fault	AC 模块组：锁相失败
17	AC-Group: Ambient over temperature	AC 模块组：环境温度过温
18	AC-Group: Ambient temp. sensor fault	AC 模块组：环温探头故障
19	AC-Group: Cabinet temp. sensor fault	AC 模块组：柜温探头故障
20	AC-Group: Cabinet over temperature	AC 模块组：机柜温度过温
21	AC-Group: Off-grid voltage phase lost	AC 模块组：离网电压缺相
22	AC-Group: AC current harmonic Abnormal	AC 模块组：交流电流谐波异常
23		
24		

25		
26		
27		
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29		
30		
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4.24 Note24

bit	Data parsing	解析
0	AC-Group: 24V auxiliary power fault	AC 模块组: 24V 辅助电源故障
1	AC-Group: emergency stopped(EPO)	AC 模块组: 紧急停机
2	AC-Group: Grounding fault	AC 模块组: 接地故障
3	AC-Group: DC bus over voltage	AC 模块组: 直流母线过压
4	AC-Group: Module over temperature	AC 模块组: 模块温度过温
5	AC-Group: Module current asymmetric	AC 模块组: 模块电流不平衡
6	AC-Group: Fan fault	AC 模块组: 风扇故障
7	AC-Group: DC relay open circuit	AC 模块组: 直流继电器开路
8	AC-Group: Calibration parameter Abnormal	AC 模块组: 校准参数异常
9	AC-Group: Bus voltage unbalanced	AC 模块组: 母线电压不平衡
10	AC-Group: Fuse blown	AC 模块组: 保险故障
11	AC-Group: DSP initializing fault	AC 模块组: DSP 初始化故障
12	AC-Group: DC soft start failed	AC 模块组: 直流软启动失败
13	AC-Group: CAN A comm. fault	AC 模块组: CANA 通讯故障
14	AC-Group: DC input reversed	AC 模块组: 直流输入反接
15	AC-Group: AC current DC component Abnormal	AC 模块组: 交流电流直流分量异常
16	AC-Group: Transformer over temp.	AC 模块组: 变压器过温
17	AC-Group: U2 comm. 2 Abnormal	AC 模块组: U2 通信异常 2
18	AC-Group: Tripped by BMS or DC switch	AC 模块组: BMS 故障或直流开关断开
19	AC-Group: SPD fault	AC 模块组: 防雷器故障
20	AC-Group: Overload timeout fault	AC 模块组: 过载超时故障
21	AC-Group: AC soft start failed	AC 模块组: 交流软启动失败
22	AC-Group: Synchronous signal 1 fault	AC 模块组: 同步信号故障 1
23	AC-Group: DSP version fault	AC 模块组: DSP 版本故障
24	AC-Group: AC relay open circuit	AC 模块组: 交流继电器开路
25	AC-Group: Sampling zero Abnormal	AC 模块组: 采样零点异常
26	AC-Group: U2 comm. 1 Abnormal	AC 模块组: U2 通信异常 1
27	AC-Group: 15V auxiliary power fault	AC 模块组: 15V 辅助电源故障

28	AC-Group: Module ID reduplicated	AC 模块组：模块重号故障
29	AC-Group: RS485 comm. fault	AC 模块组: RS485 通讯故障
30	AC-Group: CAN B comm. fault	AC 模块组: CANB 通讯故障
31	AC-Group: Restart too much	AC 模块组：重启过多

4.25 Note25

bit	Data parsing	**解析**
0	AC-Group: CPLD version fault	AC 模块组: CPLD 版本故障
1	AC-Group: Hardware version fault	AC 模块组：硬件版本故障
2	AC-Group: DC relay short circuit	AC 模块组：直流继电器短路
3	AC-Group: DC bus under voltage	AC 模块组：直流母线欠压
4	AC-Group: AC relay short circuit	AC 模块组：交流继电器短路
5	AC-Group: Synchronous signal 2 fault	AC 模块组：同步信号故障 2
6	AC-Group: Parameter mismatch	AC 模块组：参数不匹配
7	AC-Group: CAN C comm. fault	AC 模块组: CANC 通讯故障
8	AC-Group: Ambient humidity too high	AC 模块组：环境湿度过高
9	AC-Group: BMS voltage Abnormal	AC 模块组: BMS 电压异常
10	AC-Group: BMS current Abnormal	AC 模块组: BMS 电流异常
11	AC-Group: BMS temperature Abnormal	AC 模块组: BMS 温度异常
12	AC-Group: BMS shutdown	AC 模块组: BMS 关机故障
13	AC-Group: Insulation detection Abnormal	AC 模块组：绝缘检测异常
14	AC-Group: Hardware sampling Abnormal	AC 模块组：硬件采样异常
15	AC-Group: Remote comm. Lost	AC 模块组：远程通信丢失
16	PCS: Pv under voltage	PCS：光伏欠压
17	PCS: Pv over voltage	PCS：光伏过压
18	PCS: Pv contactor short circuit	PCS：光伏接触器短路
19	PCS: Pv contactor open circuit	PCS：光伏接触器开路
20	PCS: PE-N contactor short circuit	PCS: PE-N 接触器短路
21	PCS: PE-N contactor open circuit	PCS: PE-N 接触器开路
22	PCS: Neutral contactor short circuit	PCS: N 接触器短路
23	PCS: Neutral contactor open circuit	PCS: N 接触器开路
24	PCS: Grid access abnormal	PCS：电网接入异常
25	PCS: Grid power down	PCS：电网掉电
26	PCS: Grid voltage distortion	PCS：电网电压畸变
27	PCS: input dry contact 4 failed	PCS：输入干接点 4 失效
28	PCS: input dry contact 5 failed	PCS：输入干接点 5 失效

4.26 Note26

bit	Data parsing	解析	Status
0	AC-Group: module 1 Alarm	AC 模块组：模块 1 告警	warning
1	AC-Group: module 2 Alarm	AC 模块组：模块 2 告警	warning
2	AC-Group: module 3 Alarm	AC 模块组：模块 3 告警	warning
3	AC-Group: module 4 Alarm	AC 模块组：模块 4 告警	warning
4	AC-Group: module 5 Alarm	AC 模块组：模块 5 告警	warning
5	AC-Group: module 6 Alarm	AC 模块组：模块 6 告警	warning
6	AC-Group: module 7 Alarm	AC 模块组：模块 7 告警	warning
7	AC-Group: module 8 Alarm	AC 模块组：模块 8 告警	warning
8	AC-Group: module 9 Alarm	AC 模块组：模块 9 告警	warning
9	AC-Group: module 10 Alarm	AC 模块组：模块 10 告警	warning
10	Rack Func board Alarm	机架功能板告警	warning
11	reserved	/	warning
12			warning
13			warning
14			warning
15			warning
16	AC-Group: module 1 fault	AC 模块组：模块 1 故障	fault
17	AC-Group: module 2 fault	AC 模块组：模块 2 故障	fault
18	AC-Group: module 3 fault	AC 模块组：模块 3 故障	fault
19	AC-Group: module 4 fault	AC 模块组：模块 4 故障	fault
20	AC-Group: module 5 fault	AC 模块组：模块 5 故障	fault
21	AC-Group: module 6 fault	AC 模块组：模块 6 故障	fault
22	AC-Group: module 7 fault	AC 模块组：模块 7 故障	fault
23	AC-Group: module 8 fault	AC 模块组：模块 8 故障	fault
24	AC-Group: module 9 fault	AC 模块组：模块 9 故障	fault
25	AC-Group: module 10 fault	AC 模块组：模块 10 故障	fault
26	Rack Func board fault	机架功能板故障	fault
27	reserved	/	fault

28			fault
29			fault
30			fault
31			fault

4.27 Note27

bit	Data parsing	解析	Status
0	DC-Group: DC bus over voltage	DC 模块组：直流母线过压	fault
1	DC-Group: DC bus under voltage	DC 模块组：直流母线欠压	fault
2	DC-Group: DC input over voltage	DC 模块组：直流输入过压	fault
3	DC-Group: DC input under voltage	DC 模块组：直流输入欠压	fault
4	DC-Group: DC input over current	DC 模块组：直流输入过流	fault
5	DC-Group: DC input power down	DC 模块组：直流输入掉电	fault
6	DC-Group: Restart too much	DC 模块组：重启过多	fault
7	DC-Group: Battery relay short circuit	DC 模块组：电池继电器短路	fault
8	DC-Group: PV under energy	DC 模块组：光伏能量不足	fault
9	DC-Group: Battery under energy	DC 模块组：电池电量不足	fault
10	DC-Group: ambient temperature overheat	DC 模块组：环境温度过高	warning
11	DC-Group: Tripped by BMS or DC switch	DC 模块组: BMS 故障或直流开关断开	fault
12	DC-Group: U2 comm. 1 Abnormal	DC 模块组: U2 通信异常 1	warning
13	DC-Group: cabinet temperature overheat	DC 模块组：机柜温度过高	fault
14	DC-Group: cabinet temperature sensor fault	DC 模块组：柜温探头故障	warning
15	DC-Group: ambient temperature sensor fault	DC 模块组：环温探头故障	warning
16	DC-Group: Module current asymmetric	DC 模块组：模块电流不平衡	fault
17			fault
18	DC-Group: 24V auxiliary power fault	DC 模块组: 24V 辅助电源故障	fault
19	DC-Group: emergent stopped(EPO)	DC 模块组：紧急停机	fault
20	DC-Group: Grounding fault	DC 模块组：接地故障	fault
21	DC-Group: Bus voltage unbalanced	DC 模块组：母线电压不平衡	fault
22	DC-Group: Module over temperature	DC 模块组：模块温度过温	fault
23	DC-Group: Fan fault	DC 模块组：风扇故障	fault
24	DC-Group: Battery relay open circuit	DC 模块组：电池继电器开路	fault

25	DC-Group: Calibration parameter Abnormal	DC 模块组：校准参数异常	warning
26	DC-Group: Fuse blown	DC 模块组：保险故障	fault
27	DC-Group: DSP initializing fault	DC 模块组: DSP 初始化故障	fault
28	DC-Group: Battery soft start failed	DC 模块组：电池软启动失败	fault
29	DC-Group: CAN A comm. fault	DC 模块组: CANA 通讯故障	fault
30	DC-Group: Bus relay open circuit	DC 模块组：母线继电器开路	fault
31	DC-Group: Bus soft start failed	DC 模块组：母线软启动失败	fault

4.28 Note28

bit	Data parsing	解析	Status
0	DC-Group: DSP verision fault	DC 模块组: DSP 版本故障	fault
1	DC-Group: CPLD version fault	DC 模块组: CPLD 版本故障	fault
2	DC-Group: Parameter mismatch	DC 模块组：参数不匹配	fault
3	DC-Group: Hardware version fault	DC 模块组：硬件版本故障	fault
4	DC-Group: RS485 communication fault	DC 模块组: 485 通讯故障	fault
5	DC-Group: CAN B comm. fault	DC 模块组: CANB 通讯故障	fault
6	DC-Group: Module ID reduplicated	DC 模块组：模块重号故障	fault
7	DC-Group: 15V auxiliary power fault	DC 模块组: 15V 辅助电源故障	fault
8	DC-Group: Bus relay short circuit	DC 模块组：母线继电器短路	fault
9	DC-Group: BMS voltage Abnormal	DC 模块组: BMS 电压异常	fault
10	DC-Group: BMS current Abnormal	DC 模块组: BMS 电流异常	fault
11	DC-Group: BMS temperature Abnormal	DC 模块组: BMS 温度异常	fault
12	DC-Group: BMS shutdown	DC 模块组: BMS 关机故障	fault
13	DC-Group: Insulation detection Abnormal	DC 模块组：绝缘检测异常	fault
14			
15			
16	PDS: Soft version fault	PDS：软件版本故障	fault
17	PDS: DSP initializing fault	PDS: DSP 初始化故障	fault
18	PDS: BMS Fault	PDS: BMS 故障	fault
19	PDS: EPO	PDS：紧急停机	fault
20	PDS: SPD Alarm	PDS：防雷器告警	warning
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4.29 Note29

bit	Data parsing	解析	Status
0	DC-Group: module 1 Alarm	DC 模块组：模块 1 告警	warning
1	DC-Group: module 2 Alarm	DC 模块组：模块 2 告警	warning
2	DC-Group: module 3 Alarm	DC 模块组：模块 3 告警	warning
3	DC-Group: module 4 Alarm	DC 模块组：模块 4 告警	warning
4	DC-Group: module 5 Alarm	DC 模块组：模块 5 告警	warning
5	DC-Group: module 6 Alarm	DC 模块组：模块 6 告警	warning
6	DC-Group: module 7 Alarm	DC 模块组：模块 7 告警	warning
7	DC-Group: module 8 Alarm	DC 模块组：模块 8 告警	warning
8	DC-Group: module 9 Alarm	DC 模块组：模块 9 告警	warning
9	DC-Group: module 10 Alarm	DC 模块组：模块 10 告警	warning
10	reserved	/	warning
11			warning
12			warning
13			warning
14			warning
15			warning
16	DC-Group: module 1 fault	DC 模块组：模块 1 故障	fault
17	DC-Group: module 2 fault	DC 模块组：模块 2 故障	fault
18	DC-Group: module 3 fault	DC 模块组：模块 3 故障	fault
19	DC-Group: module 4 fault	DC 模块组：模块 4 故障	fault
20	DC-Group: module 5 fault	DC 模块组：模块 5 故障	fault
21	DC-Group: module 6 fault	DC 模块组：模块 6 故障	fault
22	DC-Group: module 7 fault	DC 模块组：模块 7 故障	fault
23	DC-Group: module 8 fault	DC 模块组：模块 8 故障	fault
24	DC-Group: module 9 fault	DC 模块组：模块 9 故障	fault
25	DC-Group: module 10 fault	DC 模块组：模块 10 故障	fault
26	reserved	/	fault
27			fault
28			fault

29			fault
30			fault
31			fault

4.30 Note30

bit	Data parsing	解析	Status
0	STS: grid voltage reversed	STS: 电网电压反序	fault
1	STS: grid AC voltage phase lost	STS: 电网电压缺相	fault
2	STS: off-grid AC voltage reversed	STS: 离网电压反序	fault
3	STS: off-grid AC voltage phase lost	STS: 离网电压缺相	fault
4	STS: Calibration parameter abnormal	STS: 校准参数异常	warning
5	STS: Sampling zero abnormal	STS: 采样零点异常	warning
6	STS: Overload alarm	STS: 过载报警	warning
7	STS: Ambient over temperature	STS: 环境温度过温	warning
8	STS: PLL fault	STS: 锁相失败	warning
9	STS: Grid voltage asymmetric	STS: 电网电压不平衡	fault
10	STS: Grid under voltage	STS: 电网侧欠压	fault
11	STS: Grid over voltage	STS: 电网侧过压	fault
12	STS: Grid under frequency	STS: 电网侧欠频	fault
13	STS: Grid over frequency	STS: 电网侧过频	fault
14	STS: Frequently switching fault	STS: 频繁切换故障	warning
15	STS: Grid power down	STS: 电网掉电	fault
16	STS: emergency stopped(EPO)	STS: 紧急停机	fault
17	STS: 15V auxiliary power fault	STS: 15V 辅助电源故障	fault
18	STS: 24V auxiliary power fault	STS: 24V 辅助电源故障	fault
19	STS: CAN A comm. fault	STS: CANA 通讯故障	warning
20	STS: CAN B comm. fault	STS: CANB 通讯故障	warning
21	STS: RS-485 comm. fault	STS: RS-485 通讯故障	warning
22	STS: DSP initializing fault	STS: DSP 初始化故障	fault
23	STS: grid interconnection switch open circuit	STS: 并网空开开路	fault
24	STS: grid interconnection switch short fault	STS: 并网空开短路	fault
25	STS: Overload timeout fault	STS: 过载超时故障	fault
26	STS: Synchronous signal 1 fault	STS: 同步信号 1 故障	fault
27	STS: Ambient temp. sensor fault	STS: 环温探头故障	warning
28	STS: Cabinet temp. sensor fault	STS: 柜温探头故障	fault
29	STS: Cabinet over temperature	STS: 机柜过温故障	fault
30	STS: Module over temperature	STS: 模块温度过温	fault

31	STS: Fan fault	STS: 风扇故障	fault

4.31 Note31

bit	Data parsing	解析	Status
0	STS: DSP version fault	STS: DSP 版本故障	fault
1	STS: CPLD version fault	STS: CPLD 版本故障	fault
2	STS: Bypass fault	STS: 旁路故障	warning
3	STS: SPT fault	STS: 防雷器故障	warning
4	STS: Module temp. sensor fault	STS: 模块温度探头故障	fault
5	STS: Grid voltage distortion	STS: 电网电压畸变	fault
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4.32 Note32

Mode Code	Description	Parsing
0x00 0x00	Wait	Inverter waiting to qualify for power generation
0x00 0x01	Normal	Inverter is generating power
0x00 0x02	Fault	System is abnormal, stopping power generation
0x00 0x03	Permanent Fault	The system is seriously abnormal and the inverter will restart after 20 seconds. The conditions for entering this state are as follows: 1.Grid current DC offset 2.Eeprom cannot be read or write in 3.Communication between CPU failure 4.Bus Voltage too high 5.Compare measured values from two CPU 6.relay check fail 7.GFCI Device check fail 8.HCT check fail

4.33 Note33

bit	Data parsing	解析	Status
0	GFCI Device Check Failure	GFCI 检测电路异常	fault
1	AC HCT Check Failure	输出电流传感器异常	fault
2			
3	DCI Consistency Failure	主从机检测直流输出电流不一致	fault
4	GFCI Consistency Failure	主从机检测 GFCI 不一致	fault
5	NA		fault
6	GFCI Device Failure	GFCI 检测失败	fault
7	Relay Device Failure	继电器检测失败	fault
8	AC HCT Failure	AC HCT 检测失败	fault
9	Utility Loss	市电丢失	fault
10	Gournd I Failure	接地电流过高	fault
11	DC Bus High	直流总线电压过高	fault

12	Internal Fan Failure	内部风扇故障	fault
13	Over Temperature	过温	fault
14	Auto Test Failure	自检失败	fault
15	PV Over Voltage	光伏过压	fault
16	External Fan Failure	外部风扇故障	fault
17	Vac Failure	市电电压超限	fault
18	Isolation Failure	绝缘故障	fault
19	DC Injection High	对电网的直流注入过高	fault
20			
21			
22	Fac Consistency Failure	主从机检测市电频率不一致	fault
23	Vac Consistency Failure	主从机检测市电电压不一致	fault
24			
25	Relay Check Failure	继电器检测失败	fault
26			
27			
28			
29	Fac Failure	市电频率超限	fault
30	EEPROM R/W Failure	EEPROM 读写失败	fault
31	Internal Communication Failure	内部通讯失败	fault

4.34 Note34

bit	**Data parsing**	**解析**
0	High Temp. alarm	高温告警
1	Internal fan failure alarm	内风机故障告警
2	External fan failure alarm	外风机故障告警
3	Compressor failure alarm	压缩机故障告警
4	InsideTemp. sensor failure	柜内回风温度温度探头故障
5	High pressure	系统高压力告警
6	Low Temp. alarm	低温告警
7	Dc overvoltage alarm	直流过压告警
8	Dc undervoltage alarm	直流欠压告警
9	Ac overvoltage alarm	交流过压告警
10	Ac undervoltage alarm	交流欠压告警
11	AC power supply	交流掉电告警
12	Evaporator Temp.sensor failure	蒸发器温度传感器故障

13	Condenser Temp.sensor failure	冷凝器温度传感器故障
14	Outside Temp.sensor failure	环境温度传感器故障
15	Evaporator Frost Protection	蒸发器冻结报警
16	High Pressure Locked	频繁高压力告警
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