MODBUS RTU й相储能通信规凖

（⁝权所$，翻⁝必究3

更改½录

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1. 概述

本协管裶用于ত№ й 相储能逆ਈ器ｏ ｋƒ机监控和 DSP 之间的通信协管°采用 MODBUS RTU 通”规滰°本协管可ɲ实时读ਆ逆ਈ器的运行信息和对逆ਈ器控制操作°

2. 物理接口

2.1. 采用 **RS485/RS232**，ᴙ异步收发方式，▲从模式，固定波特率°

----波特率:9600bps
----奇偶校验ƒ：None
----数据ƒ:8
----停‡ƒ: 1

2.2. ᐡ间间隔时间要求

3. 数据ᐡ格式

Slave Address	Function code	Data	CRC Check
8-Bits	8-Bits	Nx8-Bits	16-Bits

Feld Slave-Adresse: ist die entsprechende Slave-Adresse, sie muss mit der Slave-Adresse der inversen Maschine übereinstimmen ° Feld Funktionscode: ist der Funktionscode, derzeit sind nur die Funktionscodes 03H und 10H verfügbar

Function code(Hex)	中文Q	Adresse senden	能
02H	读开ℊ输入状态		读故障信息寄ᅫ器内容
03H	读保持寄ᅫ器	0~59/500~2000	读设置寄ᅫ器内容
04H	读输入寄ᅫ器		读逆ਈ器信息内容
05H	写অ个线圈		开ℊ机设置 能
06H	写অ个保持寄ᅫ器		设置অ✁节 能
10H	写多个保持寄ᅫ器	60-499	设置多✁节 能

Data 域:包括起始寄ᅫ器地址，数据长度，数据✁节个数，数据内容°都是高✁节在前，№✁节在ৗ°

CRC Check 域: CRC 查表校验方式，№✁节在前高✁节在ৗ°

4. 错误信息及数据的处理

从机回复(16 蠟制)：

Slave Address	Function code	Error code	CRC Check	
xx	xx|0x80	xx	№✁节	高✁节
			xx	xx

逆ᖱ器通”模块检测到除了 CRC 码出错ᕪ外的错误时，必须向▲机回衮信息， 能码的最高ƒ置ᙅ 1，ዻ在▲机发衮的 能码的基础ĸ 128゜

逆ᖱ器通”模块响应回衮的错误码:

0x01 非法的 能码 服 器ዘ了解 能码

0x02 非法的数据地址 o 请求$ℳ

0x03 非法的数据值 o 请求$ℳ

0x04 服 故障 逆ਈ器通”模块在执行过程中无法ঋ出数据故障

5. 详细协管描述

0-59 寄ᅭ器地址ㅈ可读寄ᅭ器类型， **0x03** 能码˚

60-499 寄ᅭ器地址ㅈ可读写寄ᅭ器类型， **0x10** 能码˚

500-2000 寄ᅭ器地址ㅈ可读寄ᅭ器类型， **0x03** 能码˚

5.1. 03 读固$属性；，对应 能码 **0x03,**地址范围 **0~59**

Addr	Register meaning	R/W	data range	unit	note
000	设备类型 Device type	R			0X0200 组串机 inverter 0X0300 অ相储能机 hybird 0X0400 微逆机 MI microinverter 0X0500 ӥ 相储能机 phase3 hybird
001	Modbus address	R	[1,247]		
002	通 ” 协 管 ⋮ 本 Communication protocol version	R	‘0’~’9’; ‘A’~’Z’		固件所遵从的本协管的⋮本，如 0x 0102 ȷ表 1.2 ⋮
003	SN byte 01 SN byte 02	R	‘0’~’9’; ‘A’~’Z’		The serial number is ten ASCII characters, If "AH12345678", Byte 01 is 0x41 (A), The 02nd byte is 0x48 (H), …… The 09th byte is 0x37 (7), The tenth byte is 0x38 (8).
004	SN byte 03 SN byte 04	R	‘0’~’9’; ‘A’~’Z’		
005	SN byte 05 SN byte 06	R	‘0’~’9’; ‘A’~’Z’		
006	SN byte 07 SN byte 08	R	‘0’~’9’; ‘A’~’Z’		
007	SN byte 09 SN byte 10	R	‘0’~’9’; ‘A’~’Z’		
008	率等¾ Rated Power	R	0x0000		
009	保留≐ undefined	R	0x0000		
010	保留≐ undefined	R			

011	控制板辅ত*f*机软件⁝本ª Assistant program version	R	0XFFFF		Bit0-7 启程序 bootloader software Bit8-15 辅程序 Assistant program
	控制板启程序⁝本ª bootloader software version				
012	预留 undefine	R			
013	预留 undefine	R			
014	控制板固件⁝本-≚段 2 Control panel firmware version-2	R			
015	控制板固件⁝本-▲⁝本 Control panel firmware master version	R			
016	通”板固件⁝本-≚段 1 Comm panel firmware version-1	R			
017	通”板固件⁝本-≚段 2 Comm panel firmware version-2	R			
018	通”板固件⁝本-▲⁝本 Comm panel firmware master version	R			
019	安规类型 Safety type	R			
020	额定 率№≚ Rated power low word	R		0.1W	
021	额定 率高≚ Rated power high word	R		0.1W	
022	MPPT 路数及相数 MPPT number and phases	R	[1,8]/[1,3]		MI 0x0503: five-mppts three-phase
023	并网电压等¾/Rated Grid Voltage	R	[0-3]		0: 127/220V 1: 220/380V
024					
025	预留 SN byte 01 预留 SN byte 02				
026	预留 SN byte 03 预留 SN byte 04				
027	预留 SN byte 05 预留 SN byte 06				

	预留 SN byte 07				
028	预留 SN byte 08				
029	预留 SN byte 09				
	预留 SN byte 10				
030					
031					
059					

5.1. 10 可读写可ਈ属性;，对应 能码是 0x10°

Addr	Register meaning	R/W	data range	unit	note
60	t程飾定使能 Remote Lock	R/W			0x0002 ກ机 turn off 0x0000 开机 turn on
61	开机自检时间 self-check time	R/W	[0,1000]	S	MI (bylo -1)
62	系统时间第 1 ≐节 system time byte 01	R/W	[0,255]	ľ Year	MI лx 20 00 ľ̊Ӽ基值 Based on the year 2000
	系统时间第 2 ≐节 system time byte 02	R/W	[1,12]	$ Month	
63	系统时间第 3 ≐节 system time byte 03	R/W	[1,31]	日 Day	
	系统时间第 4 ≐节 system time byte 04	R/W	[0,23]	时 Hour	
64	系统时间第 5 ≐节 system time byte 05	R/W	[0,59]	Minute	
	系统时间第 6 ≐节 system time byte 06	R/W	[0,59]	秒 Sec	
65	绝缘阻抗 л 限 Minimum insulation impedance	R/W	[100,20000]	0.1KΩ	

66	预留 Undefine				
67	预留 Undefine				
68	预留 Undefine				
69	预留 Undefine				
70	预留 Undefine				
71	预留 Undefine				
72	预留 Undefine				
73	预留 Undefine				
74	通”地址 Communication address	R	0x0000	-	
75	通”波特率 Communication baud rate MI:Zigbee or PLC	R	0x0000	-	
76	预留 Undefine	R/W			
77	$ 率调节 Active power regulation	R/W	[0,1200]	0.1%/1%	如 800 表示调节到 80.0% MI If 800, adjust to 80.0%
78	无 率调节 Reactive power regulation	R/W	[0,1200]	0.1%	如 800 表示调节到 80.0% If 800, adjust to 80.0%
79	视在 率调节 Apparent power regulation	R/W	[0,1200]	0.1%	如 800 表示调节到 80.0% If 800, adjust to 80.0%
80	开n机使能 Switch on and off enable	R/W	[0,1]	-	0:n机 1:开机MI 2:n机 0: power off 1: power on
81	恢复出厂使能 Factory reset enable	R/W	[0,1]		0: disable 1: enable
82	自检时间 Self-checking time	R/W	[0,1]	-	0-360 seconds
83	孤岛保^使能 Island protection enable	R/W	[0,1]		0: disable 1: enable
84	MPPT路数 MPPT number	R/W	[0,1]	-	0: disable 1: enable
85	GFDI使能 GFDI enable	R/W	[0,1]		0: disable 1: enable

86					
87	RISO 使能 RISO enable	R/W	[0,1]		0: disable 1: enable
88	并网标准 GridStandard	R/W	[0,20]		1， 中国 2， 巴西 3， 印度
					4， EN50438 5，其他
89					
90	№压穿越使能 Low voltage across enable				0: disable 1: enable
91	控制板EEPROM 初始使能 MCU-EEPROM initial enabled	R/W	[0,2]	-	0: ↓常工作 work normal 1: 初始化控制板 EEPROM init mcu eeprom
92	通”板EEPROM 初始使能 Comm-EEPROM initial enabled	R/W			0: ↓常 work normal 1:初始化通”板 EEPROM init comm eeprom
93	控制板测试控制指÷ Factory only				Bit0 开测试使能(使能蠹○ᵀ面的才$效) Test enable=1 if use later bit Bit1 开逆ही器全部风扇 open all fan Bit4 开启Gen信ª继电器 open Gen singal relay
94	通”板测试控制指÷ Factory only	R/W	[0,3]	-	Bit0 开测试使能(使能蠹○ᵀ面的才$效) Test enable=1 if use later bit Bit2 闪显示板的所$LED，蜂蜜器，背ٯ,显示红黄蓝 Flash display board for all LEDs, honey maker, backlight, display red, yellow and blue Bit3 开启D电池接口测试 Open lithium battery interface test Bit5 重启液晶程序 Restart lcd
95					
96	发电量修↓系数 PowerWH Factor	R/W		-0.01	100 mean 1 111 mean 1.11
97	Solar输入ℛSPU TEST MODE				
98	电池充电类型 Control Mode	R/W	-	-	0x0000 Lead-Battery, four-stage charging method 0x0001 Lithium battery
99	Equalization V	R/W	[3800,6100]	0.01V	1480 means 14.8v

100	Absorption V	R/W	[3800,6100]	0.01V	1440 means 14.4v
101	Float V	R/W	[3800,6100]	0.01V	1440 means 14.4v
102	电池容量 Batt Capacity	R/W	[0,2000]	1 Ah	200 means 200AH
103	Empty_v	R/W		0.01V	
104	最小limit起作用 率 ZeroExport power	R/W			
105	均衡充几天执行一⅛ Equalization day cycle	R/W	[0 90]	Day	
106	均衡充执行时间 Equalization time	R/W	[0 20]	0.5Hour	辨率 0.5小时 Resolution 0.5 h [0-20]对 应 0- 10小时 但是发MCU是[0-100]
107	温度补偿值 TEMPCO	R/W	[0,50]	1mV/℃	Ċ$↓负的int型 Signed int
108	电池最大充电电流 Max A Charge	R/W	[0,185]	1A	0-185A
109	电池最大放电电流 Max A discharge	R/W	[0,185]	1A	0-185A
110	保留 undefined	R/W			
111	电池工作根据电压蠷是容量 battery operates according to voltage or capacity	R/W			根据电压 According to the voltage 根据容量 According to the capacity 2 没$电池 no battery
112	D电池唤醒标志ƒ Lithium battery wake up sign bit	R/W			0 enabled 1 Disable
113	电池内阻值 battery resistance value	R/W	[0,6000]	mΩ	
114	电池充电效率 Battery charging efficiency	R/W	[0-100]	0.1%	983表示98.3% 983 is 98.3%
115	电池容量ShutDown battery capacity ShutDown	R/W	[0,100]	1%	№容量截‡点 Low capacity cutoff point
116	电池容量Restart battery capacityRestart	R/W	[0,100]	1%	保^恢复点 Protection recovery point
117	电池容量LowBatt battery capacityLowBatt	R/W	[0,100]	1%	
118	电池电压ShutDown battery voltageShutDown	R/W	[3800,6100]	0.01V	№保^点 cutoff 41V Low protection point cutoff 41V
119	电池电压Restart battery voltageRestart	R/W	[3800,6100]	0.01V	Reboot /recover 52V

120	电池电压LowBatt battery voltageLowBatt	R/W	[3800,6100]	0.01V	放电深度 46V Discharge depth 46V
121	发电机最大运行时间 Maximum operating time of generator			0.1 hours	120表示12小时 120 is 12 hours
122	发电机冷K时间 Generator cooling time			0.1 hours	120表示12小时 120 is 12 hours
123	发电机充电启电压点 Generator charging Starting voltage point	R/W	[0000 6300]	0.01V	电池电压小于蠢个值发电机开启充电 The battery voltage is less than this value
124	发电机充电启容量点 Generator charging starting capacity point	R/W	[0000 6300]	1%	电池容量小于蠢个值发电机开启充电 The battery capacity is less than this value
125	发电机对电池充电电流 Generator charges the battery current	R/W	[0000 185]	1A	发电机对电池充电电流 The generator charges the battery
126	市电充电启电压点 Grid charging Start voltage point o	R/W	[0000 6300]	0.01v	
127	市电充电启容量点 Grid charging start capacity point	R/W	[0000 6300]	1%	
128	市电对电池充电电流 Grid charge the battery current	R/W	[0000 185]	1A	市电对电池充电电流 Grid charge the battery current
129	发电机充电使能 Generator is charged to enable	R/W			
130	市电充电使能 Grid is charged to enable	R/W			
131	AC couple 频率K限设置	R/W	5000-6500		5000-6500
132	强制开启发电机作Ӝ负载能 Force on generator as load function	R/W			前提是235ª寄ᆈ器已经使能1 The premise is that register 234 has enabled 1 0 н强制 Do not force 1 强制 force
133	发电机输入作Ӝ负载输出使能 generator input is enabled as the load output	R/W			0 只作Ӝ发电机输入 only Gen use 1 智能负载输出 only smart load output 2 使能作Ӝ逆ਈ器输入 only microinverter input
134	发电机负载OFF电压 SmartLoad OFF batt Voltage	R/W	[3800 6300]	0.01V	

135	发电机负载OFF电量 SmartLoad OFF batt	R/W	[0000 100]	1%	
136	发电机负载ON电压 SmartLoad ON batt Voltage	R/W	[3800 6300]	0.01V	
137	发电机负载ON电量 SmartLoad ON batt	R/W	[0000 100]	1%	
138	输出电压等¾设定	R/W			0 表示220V means 220V
	Output voltage level setting				1 表示230V means 230V 2 表示240V means 240V 3 表示120V means 120V 4 133VAC
139	开启发电机的最小solar率 minimum solar power required to start a generator	R/W	[0,8000]	1W	
140	发电机并网信a Gen_Grid_Signal On				
141	能量管理模式 Energy management model				Bit0-1 10 电池优］模式 battery first mode 11 负载优]模式 load first mode Bit2-3 表示被。并网 率ㄱ衡 能 Represents passive grid-connected power balance function 10 н开启 colse 11 开启 open Bit4-5 表示▲ 。并网 率ㄱ衡 能 Represents active grid-connection power balance function 10 н开启 close 11 开启 open
142	limit控制 能 limit control function	R/W		0/1	0x00 使能ᅀ电 sell electricity enabled 0x01 使能内置 built-in enabled 0x02 使能外置 extraposition enabled
143	限制并网最大 率输出 Limit the maximum power output of the grid connection	R/W	[0,8000]	1W	ɲ表总 率 Represents total power

144	外置电流传感器方向 External current sensor clamp phase	R/W	[xx,00]	1W	[11][12]
145	ز伏आ电 Solar sell	R/W			0x00ز伏ʜआ电 solar Don't sell 0x01ز伏आ电 solar sell
146	高¾削峰填谷 能使能 Time of Use Selling enabled	R/W			Bit0 0 disable 1 enable Bit1 Monday 0-disable 1-enable Bit2 Tuesday
					…… Bit7 Sunday
147	ŭ相ABC电网相序设定 Grid Phase	R/W			0 0 120 240 1 0 240 120
148	आ电模式时间点1 Sell mode time point 1	R/W	[0000 2359]		2359表示时间23：59 2359 means time 23:59
149	आ电模式时间点2 Sell mode time point 2	R/W	[0000 2359]		Time
150	आ电模式时间点3 Sell mode time point 3	R/W	[0000 2359]		
151	आ电模式时间点4 Sell mode time point 4	R/W	[0000 2359]		
152	आ电模式时间点5 Sell mode time point5	R/W	[0000 2359]		
153	आ电模式时间点6 Sell mode time point6	R/W	[0000 2359]		
154	आ电模式时间点1 率 Sell mode time point 1	R/W	[0000 8000]	1W	ष到电池最大放电 率影响 Affected by the maximum discharge power of the battery
155	आ电模式时间点2 率 Sell mode time point 2	R/W	[0000 8000]	1W	Power
156	आ 电模式时间点 3 率 Sell mode time point 3	R/W	[0000 8000]	1W	

157	আ 电模式时间点 4 率 Sell mode time point 4	R/W	[0000 8000]	1W	
158	আ 电模式时间点 5 率 Sell mode time point 5	R/W	[0000 8000]	1W	
159	আ 电模式时间点 6 率 Sell mode time point 6	R/W	[0000 8000]	1W	
160	আ 电模式时间点 1 电压 Sell mode time point 1	R/W	[0000 6300]	0.01V	ছ到电池电压的影响 Is affected by the battery voltage
161	আ 电模式时间点 2 电压 Sell mode time point 2	R/W	[0000 6300]	0.01V	Voltage
162	আ 电模式时间点 3 电压 Sell mode time point 3	R/W	[0000 6300]	0.01V	
163	আ 电模式时间点 4 电压 Sell mode time point 4	R/W	[0000 6300]	0.01V	
164	আ 电模式时间点 5 电压 Sell mode time point 5	R/W	[0000 6300]	0.01V	
165	আ 电模式时间点 6 电压 Sell mode time point 6	R/W	[0000 6300]	0.01V	
166	1容量 1 capacity	R/W	[0,100]	1%	Soc
167	2容量 2 capacity	R/W	[0,100]	1%	
168	3容量 3 capacity	R/W	[0,100]	1%	
169	4容量 4 capacity	R/W	[0,100]	1%	
170	5容量 5 capacity	R/W	[0,100]	1%	
171	6容量 6 capacity	R/W	[0,100]	1%	
172	时间点1充电使能 Time point 1 charge enable	R/W	[0,1]		Bit0 表示电网充电使能 grid charging enable Bit1 表示发电机充电使能 gen charging enable
173	时间点2充电使能 Time point 2 charge enable	R/W	[0,1]		№ к
174	时间点3充电使能 Time point 3 charge enable	R/W	[0,1]		№ к
175	时间点4充电使能 Time point 4 charge enable	R/W	[0,1]		№ к
176	时间点5充电使能 Time point 5 charge enable	R/W	[0,1]		№ к

177	时间点6充电使能 Time point 6 charge enable	R/W	[0,1]		№ к

178	控制板特殊 能ƒ 1 Microinverter export to grid cutoff	R/W	[0,1]		需要全部改ゃ两ƒ控制 need two bits control -00无作-01无作-10失能-11使能 -00Nowork-01Nowork-10Disable-11Enable Bit0-1 10:Disable 11:enable Bit2-3 10:Gen peak-shaving disable 11:Gen peak-shaving enable Bit4- 5: 10:Grid peak-shaving disable 11:Grid peak-shaving enable Bit6-7 10:On Grid always on disable 11:On Grid always on enable Bit8-9 10:external relay disable 11:external relay disable Bit10-11 10: D电池丢失报故障 disable Loss of lithium battery report fault disable 11: D电池丢失报故障 enable Loss of lithium battery report fault enable
179	控制板特殊 能ƒ 2 1,外置CT自检测方向 2,强制脱网	R/W	[0,1]		Bit0-1 10:外置CT自检测方向 disable Externl ct direction check disable 11：enable Bit2-3 10:强制离网工作 disable Forced off-grid work disable 11：enable

180	恢复并网时间 Restore connection time	R/W	[10 300]		
181	Solar Arc Fault模式开启 Solar Arc Fault Mode	R/W	[0 1]		0x00 ঌ闭 Close 0x01 开启 open
182	并网标准 Grid Mode	R/W	[0 1]		0=通用标准 general standard 1= UL1741&IEE1547 2= CPUC RULE21 3= SRD-UL1741 ……
183	电网频率设置 Grid Frequency	R/W	[0 1]		0x00 50HZ 0x01 60hz
184	电网类型设置 Grid Type □在是 й 相，无效	R/W	[0 3]		0x00 অ相 默认220V Single-phase 240 v / 230 v / 220 v 0x01 表示两相120V/240V Stands for two-phase 120V/240V 0x02 表示 й 相系统208V 120度120V Represents the three-phase system 208V 120 degrees 120V 0X03 120V Single Phase
185	电网高压保^点 Grid Vol High	R/W	[1800 2700]	0.1V	
186	电网№压保^点 Grid Vol Low	R/W	[1800 2700]	0.1V	
187	电网频率高保^点 Grid Hz High	R/W	[4500 6500]	0.01Hz	
188	电网频率№保^点 Grid Hz Low	R/W	[4500 6500]	0.01Hz	
189	发电机连接到电网输入端 The generator is connected to the grid input	R/W	[1 0]		0 disable 1 enabled
190	GEN peak shaving Power	R/W	[0 16000]	1w	
191	GRID peak shaving Power	R/W	[0 16000]	1w	
192	Smart Load Open Delay	R/W	[1 120]	1Minute	
193	输出PF值设定($ 调节 Output PF value Settings	R/W	[800 1200]		800表示调整到80% 1200标识调整到120% 800 for 80%, 1200 for 120%
194	外部继电器ƒ External relay bit	R/W	[0 0xFFFF]		Bit0-8 对应8个继电器ƒ Bit0-8 corresponds to 8 relay bits
195	ARC_facTory_B高ƒ ARC_facTory_B high word	R/W	[0,65535]		高ƒ和地ƒ组合，ɲx数值显示ণ可 High and status combination, with numerical

					display can be
196	№*f* Low word	R/W	[0,65535]		
197	ARC_facTory_I 高 *f* ARC_facTory_I high word	R/W	[0,65535]		
198	№*f* Low word	R/W	[0,65535]		
199	ARC_facTory_F高*f* ARC_facTory_F high word	R/W	[0,65535]		
200	№*f* Low word	R/W	[0,65535]		
201	ARC_facTory_D高*f* ARC_facTory_D high word	R/W	[0,65535]		
202	№*f* Low word	R/W	[0,65535]		
203	ARC_facTory_T高*f* ARC_facTory_T high word	R/W	[0,65535]		
204	№*f* Low word	R/W	[0,65535]		
205	ARC_facTory_C高*f* ARC_facTory_C high word	R/W	[0,65535]		
206	№*f* Low word	R/W	[0,65535]		
207	ARC_facTory_Frz高*f* ARC_facTory_Frz high word	R/W	[0,65535]		
208	№*f* Low word	R/W	[0,65535]		
209	Ups_delay time	R/W		1S	0 Standard 1 1S
210	充电电压 charging voltage	R/W		0.01V	
211	放电电压 discharge voltage	R/W		0.01V	
212	充电限流 charging current limiting	R/W		1A	
213	放电限流 Discharge current limiting	R/W		1A	
214	当前容量 real time Capacity	R/W		1%	
215	当前电压 real time voltage	R/W		0.01V	
216	当前电流	R/W		1A	

	real time current				
217	当前温度 real time temp	R/W		0.1C	1000对应0度 1200表示20.0度 800表示-20.0C 1000 corresponds to 0 degrees 1200 means 20.0 degrees 800 means -20.0C
218	离网充电限流 最大 值 Maximum charge current limit	R/W		1A	
219	离网放电限流 最大值 Maximum discharge current limiting	R/W			
220	D电池告警f Lithium battery alarm position	R/W			0x0001
221	D电池故障f Lithium battery fault location	R/W	[0,65535]		
222	D电池标志2 Lithium battery symbol 2	R/W	[0,65535]		Bit0 空缺 Vacancy Bit1 强?标志 Strong impact marks
223	D电池类型 Lithium battery type	R/W			0x0000 中ぢ派能 德朗能D PYLON SOLAX 通用CAN协管 0x0001 天邦达RS485modbus协管 0x0002 KOK协管 0x0003 keith 0X0004 拓派协管 0X0005 派能485协管 0X0006 杰力斯485协管 0X0007 欣旺达485协管 0X0008 欣瑞能485协管 0X0009 天邦达485协管 0X000A 晟高电气can协管
224	D电池SOH Lithium battery SOH				
225					
226					
227	Upgrade LCD test	R/W	[0,1]		
228	通”板设置 能 Comm board setting function	R/W			Bit0-1 时间校时 Bit2-3 beep Bit4-5 AM/PM

					Bit6-7 Auto dim -00无作 no work -01无作 no work -10失能 disable -11使能 enable
229					
230					
231					
232					
233					
234					
235					
236					
237					
238					
239					
240	蠟入厂内初测程序	R/W			=12345 蠟入
241					
242					
243					
244					
245					
246					
247					
248					
249					
250					
251					
252					
253					
254					
255					
256					
257					
258					
259					
260					
261					
262					
263					
264					
265					
266					

267					
268					
269	Grid1_I				
270	Grid2_I				
271	Grid3_I				
272	Grid_V_L1				
273	Grid_V_L2				
274	Grid_V_L3				
275	Limit1_I				
276	Limit2_I				
277	Limit3_I				
278	PV1_V				
279	PV1_I				
280	PV2_V				
281	PV2_I				
282	INV_A_I				
283	INV_B_I				
284	INV_C_I				
285	INV_A_V				
286	INV_B_V				
287	INV_C_V				
288	BAT_I				
289	BAT_V				
290					
291					
292					
293					
294					
295					
296					
297					
298					
299					
300					
301					
302					
303					
304					
305					
306					
307					
308					
309					

310	Solar做Wind输入使能 Solar makes Wind input enable	R/W	[0,1]		Bit0 Solar1 Bit1 Solar2
311	Voltage 1	R/W	[500,5000]	0.1V	
312	Voltage 2	R/W		0.1V	
313	Voltage 3	R/W		0.1V	
314	Voltage 4	R/W		0.1V	
315	Voltage 5	R/W		0.1V	
316	Voltage 6	R/W		0.1V	
317	Voltage 7	R/W		0.1V	
318	Voltage 8	R/W		0.1V	
319	Voltage 9	R/W		0.1V	
320	Voltage 10	R/W		0.1V	
321	Voltage 11	R/W		0.1V	
322	Voltage 12	R/W		0.1V	
323	Current 1	R/W	[0-200]	0.1A	
324	Current 2	R/W		0.1A	
325	Current 3	R/W		0.1A	
326	Current 4	R/W		0.1A	
327	Current 5	R/W		0.1A	
328	Current 6	R/W		0.1A	
329	Current 7	R/W		0.1A	
330	Current 8	R/W		0.1A	
331	Current 9	R/W		0.1A	
332	Current 10	R/W		0.1A	
333	Current 11	R/W		0.1A	
334	Current 12	R/W		0.1A	
335	预留 Undefine				
336	并联**1** Parallel-1				
337	并联2 Parallel-2				
338	预留 Undefine				
339	预留 Undefine				
340	光伏最大输出电 率 Max Solar Sell Power		R/W	1W	
341	预留 Undefine				
342	预留 Undefine				

343	预留 Undefine				
344	电网信息监测方式 Grid check from Meter or CT	R/W			BIT00: O : CT 1 ： Meter BIT01: -BIT15: undefine
345					
346					
347	外置CT变比 CT ratio	R/W		30<--> 30:1	U16
348	外置Meter CT变比 Meter CT ratio	R/W		30<--> 30:1	U16
349					
350	Charge⊶的输入斜率控制↓数	R/W	[0-500]	W	逐周期 率变化 Cycle by cycle power variation
351	Charge⊶的输入斜率控制负数	R/W	[0-500]	W	逐周期 率变化 Cycle by cycle power variation
359	离网过载 电压小于180V持续时间				
360					
380	州№压高压穿越CA_LHVRT使能 California low pressure high pressure through CA_LHVRT enable	R/W	[0,1]		0: disable 1: enable
381	CA_HV2	R/W	[1000,3000]		
382	CA_HV1	R/W			
383	CA_LV1	R/W			
384	CA_LV2	R/W			
385	CA_LV3	R/W			
386	CA_HV2_Time	R/W	[0,300]		0 is 0.16S
387	CA_HV1_Time	R/W			
388	CA_LV1_Time	R/W			
389	CA_LV2_Time	R/W			
390	CA_LV3_Time	R/W			
391	州№频高频穿越CA_LHFRT使能 California low frequency high frequency traverses CA_LHFRT enable	R/W			
392	CA_HF2	R/W	[4500,6500]	0.01Hz	

393	CA_HF1	R/W			
394	CA_LF1	R/W			
395	CA_LF2	R/W			
396	CA_HF2_Time	R/W	[0,300]		
397	CA_HF1_Time	R/W			
398	CA_LF1_Time				
399	CA_LF2_Time				
400	州CA_QV使能 California CA_QV enable				
401	CA_QV_V1		[1000,3000]		
402	CA_QV_V2				
403	CA_QV_V3				
404	CA_QV_V4		[-44,+44]	0.01	
405	CA_QV_Q1				
406	CA_QV_Q2				
407	CA_QV_Q3				
408	CA_QV_Q4				
409	州CA_FW使能 California CA_FW enable				
410	CA_Fstart				
411	CA_Fstop				
412	州CA_VW使能 California CA_VW enable				
413	CA_Vstart				
414	CA_Vstop				
415	↓常ĸ升斜率 Normal upward slope	R/W	[1 100]	1%	
416	软启ĸ升速率 Soft start rise rate	R/W	[1 100]	1%	
417	QV Response time	R/W	[0,90]	S	
418	VW Response time	R/W	[0,60]	S	
419	FW Response time				

5.2. 03 只读实时属性;，对应 能码是 0x03°

Addr	Register meaning	R/W	data range	unit	note
500	运行状态 run state	R	[0,5]	-	0000 待机 standby 0001 自检 selfcheck 0002 ↓常 normal 0003 告警 alarm 0004 故障 fault

501	逆变器电网侧当日$ 发电量 active power generation of today	R	[-32768,32767]	0.1kWh	
502	逆变器电网侧当日无 发电量 reactive power generation of today	R	[-32768,32767]	0.1kVarh	
503	当日并网时间 Grid connection time of today	R	[0,65535]	S	
504	逆变器电网侧总$ 发电量№亠 active power generation of total low byte	R	[0,0xFFFFFFFF]	0.1kWh	
505	逆变器电网侧总$ 发电量高亠 active power generation of total high byte	R			
506	逆变器电网侧总无 发电量№亠 reactive power generation of total low byte				
507	逆变器电网侧总无 发电量高亠 reactive power generation of total high byte				
508	~~逆变器状态ƒ1~~	R			**Debug only** 调试用，无意义 Bit0:内部风扇ᆜ在ƒ : 1$ 0无 Bit1:外部风扇ᆜ在ƒ : 1$ 0无
509	~~逆变器状态ƒ1~~	R			**Debug only** 调试用，无意义
510					
511					
512					
513					
514	电池当日充电量 Today charge of the battery			0.1kwh	
515	电池当日放电量 Today discharge of the battery			0.1kwh	
516	电池累计充电量№亠 Total charge of the battery low byte			0.1kwh	

517	电池累计充电量高≝ Total charge of the battery			0.1kwh	
	high byte				
518	电池累计放电量№≝ Total discharge of the battery low byte			0.1kwh	
519	电池累计放电量高≝ Total discharge of the battery high byte			0.1kwh	
520	电网当日购电量 Day_GridBuy_Power Wh			0.1kwh	
521	电网当日𝔞电量 Day_GridSell_Power Wh			0.1kwh	
522	电网累计购电量№≝ Total_GridBuy_Power Wh_low word			0.1kwh	
523	电网累计购电量高≝ Total_GridBuy_Power Wh_high word			0.1kwh	
524	电网累计𝔞电量№≝ Total_GridSell_Power Wh_low word			0.1kwh	
525	电网累计𝔞电量高≝ Total_GridSell_Power Wh_high word			0.1kwh	
526	当日用电量 Day_Load_Power Wh			0.1kwh	
527	累计用电量№≝ Total_Load_Power Wh_low word			0.1kwh	
528	累计用电量高≝ Total_Load_Power Wh_high word			0.1kwh	
529	当日总PV发电量 Day_PV_Power Wh	R	[0,65535]	0.1kWh	
530	当日PV-1发电量 Day_PV-1_Power Wh			0.1kWh	
531	当日PV-2发电量 Day_PV-2_Power Wh			0.1kWh	
532	当日PV-3发电量 Day_PV-3_Power Wh			0.1kWh	

533	当日PV-4发电量 Day_PV-4_Power Wh			0.1kWh	
534	历史PV发电量№☲ Total PV_power Wh_low word	R		0.1kWh	
535	历史PV发电量高☲ Total PV_power Wh_high word	R		0.1kWh	
536					
537					
538					
539	发电机日工作时间 Generator working hours per day			0.1h	
540	DC电压器温度 (DCTransformer temperature)	R	[0,3000]	0.1℃	偏移1000
541	散热f温度 Heat sink temperature		[0,3000]	0.1℃	
542	预留温度1 undefine		[0,3000]	0.1℃	
543	预留温度2 undefine	R	[0,3000]	0.1℃	
544	预留温度3 undefine	R	[0,3000]	0.1℃	
545					
546					
547					
548	通”板的故障状态 Failure status of communication board	R	[0,0xFFFF]		Bit0 Flash chip error Bit1 time error Bit2 EEPROM error
549	MCU测试标志f MCU test flag				Bit0 拉弧通”标志 Arc pull communication sign Bit1 可并联CAN通” Parallel CAN communication
550	LCD测试标志f LCD test flag	R	0x0000		Bit8 D电接口RS485 Lithium electric interface RS485 Bit9 D电接口CAN Lithium electric interface CAN Bit10 按键1234 key1234 Bit11 液晶中断状态 lcd interrupt status
551	开机状态 Turn off/on status	R			№4f表示开机信a 0000 机 power off 0001 开机 power on

552	AC侧继电器状态 AC realy status	R			0 off 1 on Bit0 INV继电器 INV relay Bit1 负载继电器 预留 undefine Bit2 电网继电器 grid relay Bit3 发电机继电器 gen relay Bit4 电网供电继电器 grid give power to relay
					Bit5 ç接点 Dry contact
553	告警信息第 1 ±± Warning message word 1	R	[0,65535]		Bit0: reserved Bit1:风扇故障 FAN_WARN Bit2:电网相f错误 grid phase wrong Bit3:
554	告警信息第 2 ±± Warning message word 2	R	[0,65535]		
555	故障信息第 1±± Fault information word 1	R	[0,65535]		见故障信息编码表
556	故障信息第 2±± Fault information word 2	R	[0,65535]		
557	故障信息第 3 ±± Fault information word 3	R	[0,65535]		
558	故障信息第 4 ±± Fault information word 4	R	[0,65535]		
559	预留				
560	预留				
561	调试数据 Debug Data				
	561-583 一共23 个调试数据				
583	调试数据 Debug Data	R	0x0000		
584	预留 undefine				
585	预留 undefine				
586	电池温度 battery temperature	R 0	[0,3000]	0.1℃	
587	电池电压 battery voltage	R 1		0.01V	
588	电池电量 battery capacity	R 2	[0,100]	1%	
589	保留 undefined	R 3			

590	电池输出 率 Battery output power	R4		1W	S16
591	电池输出电流 Battery output current	R5		0.01A	S16
592	电池校↓○ı的容量 Corrected_AH	6	[0,3000]	1AH	100 is 100AH
593		7			
594		8			
595		9			
596		10			
597		11			
598	电网侧相电压A Grid phase voltage A	R12		0.1V	
599	电网侧相电压B Grid phase voltage B	R13		0.1V	
600	电网侧相电压C Grid phase voltage C	R14		0.1V	
601	电网侧线电压AB Grid line voltage AB	R15		0.1V	预留
602	电网侧线电压BC Grid line voltage BC	R16		0.1V	
603	电网侧线电压CA Grid line voltage CA	R17		0.1V	
604	电网侧内侧A相 率 A phase power on the inner side of the grid	R18		1W	S16
605	电网侧内侧B相 率 B phase power on the inner side of the grid	R19		1W	S16
606	电网侧内侧C相 率 C phase power on the inner side of the grid	R20		1W	S16
607	电网侧-内侧总$ 率Total active power from sideto side of the grid	R21		1W	
608	电网侧-内侧总视在 率 Grid side - inside total apparent power	R22		1W	预留
609	电网侧频率 Grid-side frequency	23			
610	电网侧内侧电流A grid side inner current A	R24		0.01A	S16
611	电网侧内侧电流B grid side inner current B	R25		0.01A	S16
612	电网侧内侧电流C grid side inner current C	R26		0.01A	S16
613	电网外置-电流A Out-of-grid - current A	R27		0.01A	S16
614	电网外置-电流B Out-of-grid - current B	R28		0.01A	S16

615	电网外置-电流C Out-of-grid - current C	R29		0.01A	S16
616	电网外置- 率A Out-of-grid -power A	R30		1W	S16
617	电网外置- 率B Out-of-grid -power B	R31		1W	S16
618	电网外置- 率C Out-of-grid -power C	R32		1W	S16
619	电网外置-总$ 率 Out-of-grid –total power	R33		1W	S16
620	电网外置-总视在 率	R34		1VA	S16
	Out-of-grid –total apparent power				
621	并网 率因数 PF Grid-connected power factor PF	R35	R/W	[0,1000]	真实值*1000
622	电网侧A相 率 Grid side A-phase power	36		1W	以上三个寄存器根据内置外置设置变化 The following three registers vary according to the built-in and external Settings
623	电网侧B相 率 Grid side B-phase power	37		1W	
624	电网侧C相 率 Grid side C-phase power	38		1W	
625	电网侧-总$ 率 Grid side total power	39		1W	
626		40			
627	逆变器输出相电压A Inverter output phase voltage A	R41		0.1V	
628	逆变器输出相电压B Inverter output phase voltage B	R42		0.1V	
629	逆变器输出相电压C Inverter output phase voltage C	R43		0.1V	
630	逆变器输出相电流A Inverter output phase current A	44		0.01A	S16
631	逆变器输出相电流B Inverter output phase current B	45		0.01A	S16
632	逆变器输出相电流C Inverter output phase current C	46		0.01A	S16
633	逆变器输出相 率A Inverter output phase power A	R47		1W	S16

634	逆ȳ器输出相　率B Inverter output phase power B	R48		1W	S16
635	逆ȳ器输出相　率C Inverter output phase power C	49		1W	S16
636	逆ȳ器输出总$　　率 Inverter output total power	R50		1W	S16
637	逆ȳ器输出总视在　率 Inverter output total apparent power	51		1W	S16
638	逆ȳ器频率 Inverter frequency	52		0.01Hz	U16
639		53			
640	UPS负载侧相　率A UPS load-side phase power A	54		1W	U16
641	UPS负载侧相　率B UPS load-side phase power B	55		1W	U16
642	UPS负载侧相　率C UPS load-side phase power C	56		1W	U16
643	UPS负载侧总　率C UPS load-sidetotal power	57		1W	U16
644	负载测相电压A Load phase voltage A	R58		0.1V	U16
645	负载测相电压B Load phase voltage B	R59		0.1V	U16
646	负载测相电压C Load phase voltage C	60		0.1V	U16
647	负载测电流A　无效 Load phase current A no use	R61		0.01A	S16
648	负载测电流B　无效 Load phase current B no use	R62		0.01A	S16
649	负载测电流C　无效 Load phase current C no use	R63		0.01A	S16
650	负载侧相　率A Load phase power A	R64		1W	S16
651	负载侧相　率B Load phase power B	R65		1W	S16
652	负载侧相　率C Load phase power C	R66		1W	S16
653	负载侧总$　　率 Load totalpower	R67		1W	S16
654	负载侧总视在　率　预留 Load phase apparent power undefine	R68		1W	S16
655	负载频率 Load frequency	R69		0.01Hz	
656		70			
657		71			

658		72			
659		73			
660		74			
661	Gen端口的相电压A Phase voltage of Gen port A	75		0.1V	
662	Gen端口的相电压B Phase voltage of Gen port B	76		0.1V	
663	Gen端口的相电压C Phase voltage of Gen port C	77		0.1V	
664	Gen端口的　率A Phase power of Gen port A	R78		1W	
665	Gen端口的　率B Phase power of Gen port B	79		1W	
666	Gen端口的　率C Phase power of Gen port C	80		1W	
667	Gen端口的总　率 total power of Gen port	81		1W	
668		82			
669		83			
670		84			
671		85			
672	PV1输入　率 PV1 input power	R86		1W	
673	PV2输入　率 PV2 input power	R87		1W	
674	PV3输入　率 PV3 input power	R88		1W	
675	PV4输入　率 PV4 input power	R89		1W	
676	直流电压1 Dc voltage 1	R90	[0,65535]	0.1V	
677	直流电流1 Dc current 1	R91	[0,65535]	0.1A	
678	直流电压2 Dc voltage 2	R92	[0,65535]	0.1V	
679	直流电流2 Dc current 2	R93	[0,65535]	0.1A	
680	直流电压3 Dc voltage 3	R94	[0,65535]	0.1V	
681	直流电流3 Dc current 3	R95	[0,65535]	0.1A	
682	直流电压4 Dc voltage 4	R96	[0,65535]	0.1V	
683	直流电流4 Dc current 4	R97	[0,65535]	0.1A	
	预留				

	预留				
	预留				
1000	电网信息监测方式 Grid power check mode	R			BIT00: 0：CT 1：Meter BIT01-BIT15: undefine

5.3. 03 电池只读;

Addr	Register meaning	R/W	data range	unit	note
2000-2999 XD电池寄ㄐ器					
	电池 ID				
	圣阳电池				
500	1ª 1ㄠ节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ㄠ符
	1ª 2ㄠ节				
501	1ª 3ㄠ节	R			
	1ª 4ㄠ节				
502	1ª 5ㄠ节				
	1ª 6ㄠ节				
	1ª 7ㄠ节				

503	1ª 8 ≝节				
504	1ª 9 ≝节				
	1ª 10 ≝节				
505	1ª 11 ≝节				
	1ª 12 ≝节				
506	2ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	2ª 2 ≝节				
507	2ª 3 ≝节	R			
	2ª 4 ≝节				
508	2ª 5 ≝节				
	2ª 6 ≝节				
509	2ª 7 ≝节				
	2ª 8 ≝节				
510	2ª 9 ≝节				
	2ª 10 ≝节				
511	2ª 11 ≝节				
	2ª 12 ≝节				
512	3ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	3ª 2 ≝节				
513	3ª 3 ≝节	R			
	3ª 4 ≝节				
514	3ª 5 ≝节				
	3ª 6 ≝节				
515	3ª 7 ≝节				
	3ª 8 ≝节				
516	3ª 9 ≝节				
	3ª 10 ≝节				
517	3ª 11 ≝节				
	3ª 12 ≝节				
518	4ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	4ª 2 ≝节				
519	4ª 3 ≝节	R			
	4ª 4 ≝节				
520	4ª 5 ≝节				
	4ª 6 ≝节				
	4ª 7 ≝节				

521	4ª 8 ≚节				
522	4ª 9 ≚节				
	4ª 10 ≚节				
523	4ª 11 ≚节				
	4ª 12 ≚节				
524	5ª 1 ≚节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≚符
	5ª 2 ≚节				
525	5ª 3 ≚节	R			
	5ª 4 ≚节				
526	5ª 5 ≚节				
	5ª 6 ≚节				
527	5ª 7 ≚节				
	5ª 8 ≚节				
528	5ª 9 ≚节				
	5ª 10 ≚节				
529	5ª 11 ≚节				
	5ª 12 ≚节				
530	6ª 1 ≚节	R	‘0’- ‘9’ ‘A’-		ASCII ≚符
	6ª 2 ≚节		‘Z’		
531	6ª 3 ≚节	R			
	6ª 4 ≚节				
532	6ª 5 ≚节				
	6ª 6 ≚节				
533	6ª 7 ≚节				
	6ª 8 ≚节				
534	6ª 9 ≚节				
	6ª 10 ≚节				
535	6ª 11 ≚节				
	6ª 12 ≚节				
536	7ª 1 ≚节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≚符
	7ª 2 ≚节				
537	7ª 3 ≚节	R			
	7ª 4 ≚节				
538	7ª 5 ≚节				
	7ª 6 ≚节				
	7ª 7 ≚节				

539	7ª 8 ≝节				
540	7ª 9 ≝节				
	7ª 10 ≝节				
541	7ª 11 ≝节				
	7ª 12 ≝节				
542	8ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	8ª 2 ≝节				
543	8ª 3 ≝节	R			
	8ª 4 ≝节				
544	8ª 5 ≝节				
	8ª 6 ≝节				
545	8ª 7 ≝节				
	8ª 8 ≝节				
546	8ª 9 ≝节				
	8ª 10 ≝节				
547	8ª 11 ≝节				
	8ª 12 ≝节				
548	9ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	9ª 2 ≝节				
549	9ª 3 ≝节	R			
	9ª 4 ≝节				
550	9ª 5 ≝节				
	9ª 6 ≝节				
551	9ª 7 ≝节				
	9ª 8 ≝节				
552	9ª 9 ≝节				
	9ª 10 ≝节				
553	9ª 11 ≝节				
	9ª 12 ≝节				
554	10ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	10ª 2 ≝节				
555	10ª 3 ≝节	R			
	10ª 4 ≝节				
556	10ª 5 ≝节				
	10ª 6 ≝节				
	10ª 7 ≝节				

557	10ª 8 ≝节				
558	10ª 9 ≝节				
	10ª 10 ≝节				
559	10ª 11 ≝节				
	10ª 12 ≝节				
560	11ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	11ª 2 ≝节				
561	11ª 3 ≝节	R			
	11ª 4 ≝节				
562	11ª 5 ≝节				
	11ª 6 ≝节				
563	11ª 7 ≝节				
	11ª 8 ≝节				
564	11ª 9 ≝节				
	11ª 10 ≝节				
565	11ª 11 ≝节				
	11ª 12 ≝节				
566	12ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	12ª 2 ≝节				
567	12ª 3 ≝节	R			
	12ª 4 ≝节				
568	12ª 5 ≝节				
	12ª 6 ≝节				
569	12ª 7 ≝节				
	12ª 8 ≝节				
570	12ª 9 ≝节				
	12ª 10 ≝节				
571	12ª 11 ≝节				
	12ª 12 ≝节				
572	13ª 1 ≝节	R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≝符
	13ª 2 ≝节				
573	13ª 3 ≝节	R			
	13ª 4 ≝节				
574	13ª 5 ≝节				
	13ª 6 ≝节				
	13ª 7 ≝节				

575	13ª 8 ≚节					
576	13ª 9 ≚节					
	13ª 10 ≚节					
577	13ª 11 ≚节					
	13ª 12 ≚节					
578	14ª 1 ≚节		R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≚符
	14ª 2 ≚节					
579	14ª 3 ≚节		R			
	14ª 4 ≚节					
580	14ª 5 ≚节					
	14ª 6 ≚节					
581	14ª 7 ≚节					
	14ª 8 ≚节					
582	14ª 9 ≚节					
	14ª 10 ≚节					
583	14ª 11 ≚节					
	14ª 12 ≚节					
584	15ª 1 ≚节		R	‘0’- ‘9’ ‘A’- ‘Z’		ASCII ≚符
	15ª 2 ≚节					
585	15ª 3 ≚节		R			
	15ª 4 ≚节					
586	15ª 5 ≚节					
	15ª 6 ≚节					
587	15ª 7 ≚节					
	15ª 8 ≚节					
588	15ª 9 ≚节					
	15ª 10 ≚节					
589	15ª 11 ≚节					
	15ª 12 ≚节					
600	PACK1	Module Voltage			0.01V	
601		Module Current			0.1A	
602		Temperater -AVE				1250 mean 25.0℃
603		SOC			0.1	

604		Remain Capacity			0.1AH	
605		Total Capacity			0.1AH	
606		Charge Voltage			0.01V	
607		Charge Current			0.1A	
608		Discharge Current			0.1A	
609		Max Cell V			0.01V	
610		Min Cell V			0.01V	
611		Cycle number			1	
612		Warming			--	
613		Fault			--	
614	PACK2	Module Voltage				
615		Module Current				
616		Temperater-AVE				
617		SOC				
618		Remain Capacity				
619		Total Capacity				
620		Charge Voltage				
621		Charge Current				
622		Discharge Current				
623		Max Cell V				
624		Min Cell V				
625		Cycle number				
626		Warming				
627		Fault				
628	PACK3	Module Voltage				
629		Module Current				

630		Temperater -AVE				
631		SOC				
632		Remain Capacity				
633		Total Capacity				
634		Charge Voltage				
635		Charge Current				
636		Discharge Current				
637		Max Cell V				
638		Min Cell V				
639		Cycle number				
640		Warming				
641		Fault				
642	PACK4	Module Voltage				
643		Module Current				
644		Temperater -AVE				
645		SOC				
646		Remain Capacity				
647		Total Capacity				
648		Charge Voltage				
649		Charge Current				
650		Discharge Current				
651		Max Cell V				
652		Min Cell V				
653		Cycle number				
654		Warming				
655		Fault				

656	PACK5	Module Voltage				
657		Module				
		Current				
658		Temperater -AVE				
659		SOC				
660		Remain Capacity				
661		Total Capacity				
662		Charge Voltage				
663		Charge Current				
664		Discharge Current				
665		Max Cell V				
666		Min Cell V				
667		Cycle number				
668		Warming				
669		Fault				
670	PACK6	Module Voltage				
671		Module Current				
672		Temperater -AVE				
673		SOC				
674		Remain Capacity				
675		Total Capacity				
676		Charge Voltage				
677		Charge Current				
678		Discharge Current				
679		Max Cell V				
680		Min Cell V				

681		Cycle number				
682		Warming				
683		Fault				
684	PACK7	Module Voltage				
685		Module Current				
686		Temperater -AVE				
687		SOC				
688		Remain Capacity				
689		Total Capacity				
690		Charge Voltage				
691		Charge Current				
692		Discharge Current				
693		Max Cell V				
694		Min Cell V				
695		Cycle number				
696		Warming				
697		Fault				
698	PACK8	Module Voltage				
699		Module Current				
700		Temperater -AVE				
701		SOC				
702		Remain Capacity				
703		Total Capacity				
704		Charge Voltage				
705		Charge Current				
706		Discharge Current				

707		Max Cell V				
708		Min Cell V				
709		Cycle				
		number				
710		Warming				
711		Fault				
712	PACK9	Module Voltage				
713		Module Current				
714		Temperater -AVE				
715		SOC				
716		Remain Capacity				
717		Total Capacity				
718		Charge Voltage				
719		Charge Current				
720		Discharge Current				
721		Max Cell V				
722		Min Cell V				
723		Cycle number				
724		Warming				
725		Fault				
726	PACK10	Module Voltage				
727		Module Current				
728		Temperater -AVE				
729		SOC				
730		Remain Capacity				
731		Total Capacity				
732		Charge Voltage				

733		Charge Current				
734		Discharge Current				
735		Max Cell V				
736		Min Cell V				
737		Cycle number				
738		Warming				
739		Fault				
740		Module Voltage				
741		Module Current				
742		Temperater -AVE				
743		SOC				
744		Remain Capacity				
745		Total Capacity				
746	PACK11	Charge Voltage				
747		Charge Current				
748		Discharge Current				
749		Max Cell V				
750		Min Cell V				
751		Cycle number				
752		Warming				
753		Fault				
754		Module Voltage				
755		Module Current				
756		Temperater -AVE				
757		SOC				
758	PACK12	Remain Capacity				

759		Total Capacity				
760		Charge Voltage				
761		Charge				
		Current				
762		Discharge Current				
763		Max Cell V				
764		Min Cell V				
765		Cycle number				
766		Warming				
767		Fault				
768	PACK13	Module Voltage				
769		Module Current				
770		Temperater -AVE				
771		SOC				
772		Remain Capacity				
773		Total Capacity				
774		Charge Voltage				
775		Charge Current				
776		Discharge Current				
777		Max Cell V				
778		Min Cell V				
779		Cycle number				
780		Warming				
781		Fault				
782		Module Voltage				
783		Module Current				
784		Temperater -AVE				

785	PACK14	SOC				
786		Remain Capacity				
787		Total Capacity				
788		Charge Voltage				
789		Charge Current				
790		Discharge Current				
791		Max Cell V				
792		Min Cell V				
793		Cycle number				
794		Warming				
795		Fault				
796	PACK15	Module Voltage				
797		Module Current				
798		Temperater -AVE				
799		SOC				
800		Remain Capacity				
801		Total Capacity				
802		Charge Voltage				
803		Charge Current				
804		Discharge Current				
805		Max Cell V				
806		Min Cell V				
807		Cycle number				
808		Warming				
809		Fault				

5.4. 内ㅛ½录表

内ㅛ½录表					
Addr.	寄ㅛ器含义	R/W	Range	Unit	note
1000	逆ᄇ器故障信息	R			长度范围是 500
……		R			
……		R			
1499		R			

5.5. 故障ɲ码

告警ɲ码

Error code	Description /描述	Solutions/解ꟻ方案
W01	风扇故障	
W02	相ƒ错误	

故障ɲ码：Fault Code

Error code	Description /描述	Solutions/解ꟻ方案
F07	DC/DC_Softsart_Fault DC/DC 软起故障	DC/DC softstart fault 1. Check the battery fuse; 2. Restart and check whether it is in normal; 3. Seek help from us, if can’t go back to noarmal state
F10	AuxPowerBoard_Failure 辅ฺ电源故障	Auxiliary power supply failure 1. Wait for minutes then check; 2. Remove wifi plug or other communicator; 3. Seek help from us, if can’t go back to noarmal state
F13	Working mode change 模式 换	Inverter work mode changed 1. wait for a minute and check; 2. Seek help from us, if can't go back to normal state.
F18	AC over current fault of hardware 硬件交流过流	AC side over current fault 1. Please check whether the backup load power and common load power are within the range; 2. Restart and check whether it is in normal; 3. Seek help from us, if can not go back to normal state.
F20	DC over current fault of the hardware 硬件直流过流	DC side over current fault 1. Check PV module connect and battery connect; 2. Turn off the DC switch and AC switch and then wait one minute,then turn on the DC/AC switch again; 3. Seek help from us, if can not go back to normal state.

F22	Tz_EmergSStop_Fault 急停故障(逆电器被蚌定3	Tz_EmergSStop_Fault Seek help from us,This failure hardly happens.
F23	AC leakage current is transient over current 瞬时漏电流故障	Leakage current fault 1. Check the cable of PV module and inverter; 2. Restart inverter; 3. Seek help from us, if can not go back to normal state.
F24	DC insulation impedance failure 方阵绝缘阻抗故障	PV isolation resistance is too low 1. Check the connection of PV panels and inverter is firmly and correctly; 2. Check whether the PE cable of inverter is connected to ground; 3. Seek help from us, if can not go back to normal state.
F26	The DC busbar is unbalanced 直流母线н┐衡	1. Please wait for a while and check whether it is normal; 2. If still same, and turn off the DC switch and AC switch and wait for one minute and then turn on the DC/AC switch; 3. Seek help from us, if can not go back to normal state.
F29	Parallel_CANBus_Fault 并联通”故障	This fualt only for inverters working in parallel mode 1. Check the parallel setting according to the instructions; 2. Check the connection of the CANBus; 3. Seek help from us
F35	No AC grid 无市电	No Utility 1. Please confirm grid is lost or not; 2. Check the grid connection is good or not; 3. Check the switch between inverter and grid is on or not; 4. Seek help from us, if can not go back to normal state.
F41	Parallel_system_Stop 并联系统停机故障	In parallel system,due to other inverter faults. 1. Wait for minutes then check all inverters in this parallel system; 2. If inverter can’t go back to normal state, record fault codes of all inverters, then seek help from us.
F42	AC line low voltage 线电压过№故障	Grid voltage fault 1. Check the AC voltage is in the range of standard voltage in specification; 2. Check whether grid AC cables are firmly and correctly connected; 3. Seek help from us, if can not go back to normal state.
F46/F49	Bcakup_Battery_Fault 备份电池故障	Backup battery fault. 1. Check the battery capacity; 2. Check the connection between batteries and inverters; 3. If inverter can’t go back to normal after load reduction, seek help from us

F47	AC over frequency 交流过频	Grid frequency out of range 1. Check the frequency is in the range of specification or not; 2. Check whether AC cables are firmly and correctly connected; 3. Seek help from us, if can not go back to normal state.
F48	AC lower frequency 交流ç频	Grid frequency out of range 1. Check the frequency is in the range of specification or not; 2. Check whether AC cables are firmly and correctly connected; 3. Seek help from us, if can not go back to normal state.
F56	DC busbar voltage is too low 母线电压过№	Battery voltage low 1. Check whether battery voltage is too low; 2. If the battery voltage is too low, using PV or grid to charge the battery; 3. Seek help from us, if can not go back to normal state.
F58	BMS communication fault BMS 通”故障	
F63	ARC fault 拉弧故障	1. ARC fault detection is only for US market; 2. Check PV module cable connection and clear the fault; 3. Seek help from us, if can not go back to normal state.
F64	Heat sink high temperature failure 散热器温度过高	Heat sink temperature is too high 1. Check whether the work environment temperature is too high; 2. Turn off the inverter for 10mins and restart; 3. Seek help from us, if can not go back to normal state.

6. 附录

6.1. 附录一：

6.2. 附录二：

6.3. 附录 й：

6.4. 附录四

6.5. 附录五：