**Modbus RTU Protocol**

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|  |  |  |  |
| --- | --- | --- | --- |
| 版本号 | 修改内容 | 修改人 | 时间+备注 |
| V107 | 55号寄存器由原来的固件更新使能修改为整机功能测试指令1 | 陈旭东 | 2018-11-28 |
| 100号寄存器，更改为测试标志位返回 | 陈旭东 | 2018-12-04 |
| V108 | 增加风机控制需要寄存器 |  | 2019-01-14 |
|  | 增加California寄存器 |  |  |
| V111 | 增加电池SN码寄存器 |  | 2019-04-28 |
| 增加德朗能的当月当年数据寄存器 |  | 2019-04-29 |
| V112 | 翻译英文 |  | 2019-05-xx |
| 增加并联功能 |  | 2019-06-21 |
|  | 增加微逆的过频降载（删除mppt高低压） |  | 2019-07-19 |
| V113 | 新增8个组件当日、历史发电量寄存器 |  | 2019-07-24 |
| V114 | 整理表格格式。  增加组串16路功率以及电表相关寄存器 |  | 2019-09-29 |
| V115 | 增加每个pack的信息 |  | 2019-11-12 |

2.6 Modbus\_RTU 协议之功能码

2.6 function code of Modbus\_RTU protocol

下表仅列出了本协议应用到的功能码。

The following table lists only the function codes to which this protocol applies.

|  |  |  |  |
| --- | --- | --- | --- |
| **功能码**  function code | **功能码类型**  Function code type | **说明**  explain | **备注**  remark |
| 0x03 | 公共功能码  Public function code | 读寄存器  Read the register | 包含对单个寄存器和多个寄存器的读取  Contains reads to a single register and multiple registers |
| 0x10 | 公共功能码  Public function code | 写寄存器  write the register | 包含对单个寄存器和多个寄存器的写入  Contains writes to a single register and multiple registers |

2.6.1读寄存器(功能码：0x03)

2.6.1 read register (function code: 0x03)

（1） 请求 PDU Request the PDU

|  |  |  |
| --- | --- | --- |
| 数据结构  data structure | 数据长度  data length | 取值范围  data range |
| 功能码  function code | 1 字节  1 byte | 0x03 |
| 起始寄存器地址  Starting register address | 2 字节  2 byte | 0x0000~0xFFFF |
| 寄存器数量  Number of registers | 2 字节  2 byte | 0x0001~ 0x007D |

（2） 正常响应 PDU Normal response PDU

|  |  |  |
| --- | --- | --- |
| 数据结构  data structure | 数据长度   data length | 取值范围  data range |
| 功能码  function code | 1 字节  1 byte | 0x03 |
| 字节计数  byte count | 1 字节  1 byte | N×2 |
| 寄存器值  Register values | N×2 字节  N×2 byte |  |

注：N=寄存器的数量 Note: N= number of registers

（3） 异常响应 PDU Abnormal response PDU

|  |  |  |
| --- | --- | --- |
| 数据结构  data structure | 数据长度   data length | 取值范围  data range |
| 差错码  wrong code | 1 字节  1 byte | 0x83 |
| 异常码  exception code | 1 字节  1 byte | 详见“异常码”  See "exception code" for details. |

（4）示例 give a typical example

请求读出以地址为 107 开始的连续 3 个寄存器的值（只描述 PDU）：

Request to read out three consecutive register values starting at address 107 (describe PDU only) :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **请求**  request |  | **正常响应**  normal response | | **异常响应**  exceptional response | |
| 字段名   field name | 字段值   * field value | 字段名  field name | 字段值  field value | 字段名  field name | 字段值  field value |
| 功能码   function code | 0x03 | 功能码   function code | 0x03 | 差错码  wrong code | 0x83 |
| 起始地址 Hi  Starting address Hi | 0x00 | 字节计数  byte count | 0x06 | 异常码  exception code | 0x04 |
| 起始地址 Lo  Starting address Lo | 0x6B | 寄存器[107]Hi  Register [107] Hi | 0x02 |  |  |
| 寄存器数量 Hi  Number of registers Hi | 0x00 | 寄存器[107]Lo  Register [107] Lo | 0x2B |  |  |
| 寄存器数量 Lo  Register number Lo | 0x03 | 寄存器[108]Hi  Register [108] Hi | 0x00 |  |  |
|  |  | 寄存器[108]Lo  Register [108] Lo | 0x00 |  |  |
|  |  | 寄存器[109]Hi  Register [109] Hi | 0x00 |  |  |
|  |  | 寄存器[109]Lo  Register [109] Lo | 0x64 |  |  |

2.6.2 写寄存器(功能码：0x10)

2.6.2 write register (function code: 0x10)

（1）请求 PDU

Request the PDU

|  |  |  |
| --- | --- | --- |
| 数据结构  data structure | 数据长度  data length | 取值范围  data range |
| 功能码  function code | 1 字节  1 byte | 0x10 |
| 起始寄存器地址  Starting register address | 2 字节  2 byte | 0x0000~0xFFFF |
| 寄存器数量  Number of registers | 2 字节  2 byte | 0x0001~0x007B |
| 字节计数  byte count | 1 字节  1 byte | N×2 |
| 寄存器值  Register values | N×2 字节  N×2 byte |  |

注：N=寄存器数量

Note: N= number of registers

（2） 正常响应 PDU

Normal response PDU

|  |  |  |
| --- | --- | --- |
| 数据结构  data structure | 数据长度  data length | 取值范围  data range |
| 功能码  function code | 1 字节  1 byte | 0x10 |
| 起始寄存器地址  Starting register address | 2 字节  2 byte | 0x0000~0xFFFF |
| 寄存器数量  Number of registers | 2 字节  2 byte | 0x0001~0x007B |

（3） 异常响应 PDU

Abnormal response PDU

|  |  |  |
| --- | --- | --- |
| 数据结构  data structure | 数据长度  data length | 取值范围  data range |
| 差错码  wrong code | 1 字节  1 byte | 0x90 |
| 异常码  exception code | 1 字节  1 byte | 详见“异常码”  See "exception code" for details. |

（4） 示例

give a typical example

请求写入 0x000A 和 0x0102 到以地址为 1 开始的两个寄存器中（只描述 PDU）：

Request to write 0x000A and 0x0102 to the two registers starting at address 1 (describing only PDU) :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **请求**  request |  | **正常响应**  normal response |  | **异常响应**  exceptional response | |
| 字段名   field name | 字段值   * field value | 字段名  field name | 字段值  field value | 字段名  field name | 字段值  field value |
| 功能码   function code | 0x10 | 功能码   function code | 0x10 | 差错码  wrong code | 0x90 |
| 起始地址 Hi  Starting address Hi | 0x00 | 起始地址 Hi  Starting address Hi | 0x00 | 异常码  exception code | 0x04 |
| 起始地址 Lo  Starting address Lo | 0x01 | 起始地址 Lo  Starting address Lo | 0x01 |  |  |
| 寄存器数量 Hi  Number of registers Hi | 0x00 | 寄存器数量 Hi  Number of registers Hi | 0x00 |  |  |
| 寄存器数量 Lo  Register number Lo | 0x02 | 寄存器数量 Lo  Register number Lo | 0x02 |  |  |
| 字节计数  byte count | 0x04 |  |  |  |  |
| 寄存器值 Hi  Register value Hi | 0x00 |  |  |  |  |
| 寄存器值 Lo  Register value Lo | 0x0A |  |  |  |  |
| 寄存器值 Hi  Register value Hi | 0x01 |  |  |  |  |
| 寄存器值 Lo  Register value Lo | 0x02 |  |  |  |  |

**[remark] Baud rate: 9600bps RS232 or RS485**

**[remark]** Reserved words, reserved bytes, reserved bits, and unsupported registers a re all filled with 0x00.

**[remark]** this protocol is for Microinverter,string inverter and storage inverter

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Addr** | **Register meaning** | **R/W** | **data range** | **unit** | **note** |
| 固有属性区Intrinsic attribute region | | | | | |
| 000 | 设备类型  Device type | R |  |  | 0X0200 组串机  0X0300 储能机  0X0400 微逆机MI |
| 001 | Modbus address | R | [1,247] |  | MI |
| 002 | 通讯协议版本Communication protocol version | R | ‘0’~’9’; ‘A’~’Z’ |  | 固件所遵从的本协议的版本，如 0x 0102 代表 1.2 版MI |
| 003 | SN byte 01 | 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).  MI |
| SN byte 02 |
| 004 | SN byte 03 | R | ‘0’~’9’; ‘A’~’Z’ |  |
| SN byte 04 |
| 005 | SN byte 05 | R | ‘0’~’9’; ‘A’~’Z’ |  |
| SN byte 06 |
| 006 | SN byte 07 | R | ‘0’~’9’; ‘A’~’Z’ |  |
| SN byte 08 |
| 007 | SN byte 09 | R | ‘0’~’9’; ‘A’~’Z’ |  |
| SN byte 10 |
| 008 | 功率等级  Rated Power | R | 0x0000 |  | * 2 单相机single-phase inverter * 3三相机three-phase inverter   8单相储能机Single-phase storage inverter |
| 009 | 保留字  undefined | R | 0x0000 |  |  |
| 010 | 出厂时间第 1字节  Delivery time byte 01 | R | [0,255] | 年  Year | Based on the year 2000MI |
| 出厂时间第 2字节  Delivery time byte 02 | [1,12] | 月  Month |
| 011 | 出厂时间第 3字节  Delivery time byte 03 | R | [1,31] | 日  Day |
| 出厂时间第 4字节  Delivery time byte 04 | [0,23] | 时  Hour |
| 012 | 出厂时间第 5字节  Delivery time byte 05 | R | [0,59] | 分Minute |
| 出厂时间第 6字节  Delivery time byte 06 | [0,59] | 秒  Sec |
| 013 | 控制板固件版本  Firmware version of  control board | R |  |  | MI |
| 014 | 通讯板固件版本  Firmware version of communication board | R |  |  |
| 015 | 安规类型  Safety type | R |  |  | MI |
| 016 | 额定功率低字  Rated power low word | R |  | 0.1W | MI |
| 017 | 额定功率高字  Rated power high word | R |  | 0.1W | MI |
| 018 | MPPT 路数及相数  MPPT number and phases | R | [1,8]/[1,3] |  | MI 0x0503: five-mppts three-phase |
| 019 | 保留字  undefined | R | 0x0000 |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 可变属性区Variable attribute area | | | | | | |
| 020 | 远程锁定使能  Remote Lock | R/W |  |  |  | |
| 021 | 开机自检时间  self-check time | R/W | [0,1000] | S | MI | |
| 022 | 系统时间第 1 字节  system time byte 01 | R/W | [0,255] | 年  Year | MI以 20 00 年为基值  Based on the year 2000 | |
| 系统时间第 2 字节  system time byte 02 |  | [1,12] | 月  Month |
| 023 | 系统时间第 3 字节  system time byte 03 | R/W | [1,31] | 日  Day |
| 系统时间第 4 字节  system time byte 04 |  | [0,23] | 时  Hour |
| 024 | 系统时间第 5 字节  system time byte 05 | R/W | [0,59] | 分Minute |
| 系统时间第 6 字节  system time byte 06 |  | [0,59] | 秒  Sec |
| 025 | 绝缘阻抗下限  Minimum insulation impedance | R/W | [100,20000] | 0.1KΩ |  | |
| 026 | 直流电压上限  Dc voltage upper limit | R/W | [2000,10000] | 0.1V |  | |
| 027 | 电网电压上限  Grid voltage Upper limit | R/W | [1600,5500] | 0.1V | MI | |
| 028 | 电网电压下限  Grid voltage Lower limit | R/W | [1600,5500] | 0.1V | MI | |
| 029 | 电网频率上限  Grid frequency upper limit | R/W | [4500,6500] | 0.01 Hz | MI | |
| 030 | 电网频率下限  Grid frequency lower limit | R/W | [4500,6500] | 0.01 Hz | MI | |
| 031 | 电网电流上限  grid current Upper limit | R/W | [10,20000] | 0.1A |  | |
| 032 | 开机电压上限  Starting voltage upper limit | R/W | [7000,9000] | 0.1V |  | |
| 033 | 开机电压下限  Starting voltage lower limit | R/W | [4500,9000] | 0.1V |  | |
| 034 | 过频降载起始点  OverFrq\_Derate\_point | R/W | [4500,6500] | 0.01HZ | MI | |
| 035 | 过频降载百分比  OverFrq\_De\_rate | R/W | [0,100] |  | MI | |
| 036 | 机内温度上限  Internal temperature upper limit | R/W | [500,3000] | 0.1℃ |  | |
| 037 | 通讯地址  Communication address | R | 0x0000 | - | MI | |
| 038 | 通讯波特率  Communication baud rate | R | 0x0000 | - | MI | |
| 039 | 功率因数调节  Power factor regulation | R/W | [0,2000] | 0.001 | The value after the true value is offset by +1000。For example：  -0.852 is 148  0 is 1000  0.982 is1982 | |
| 040 | 有功功率调节  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% | |
| 041 | 无功功率调节  Reactive power regulation | R/W | [0,1200] | 0.1% | 如 800 表示调节到 80.0%  If 800, adjust to 80.0% | |
| 042 | 视在功率调节  Apparent power regulation | R/W | [0,1200] | 0.1% | 如 800 表示调节到 80.0%  If 800, adjust to 80.0% | |
| 043 | 开关机使能  Switch on and off enable | R/W | [0,1] | - | 0：关机 1：开机MI 2：关机  0: power off 1: power on | |
| 044 | 恢复出厂使能  Factory reset enable | R/W | [0,1] |  | 0: disable 1: enable | |
| 045 | 自检时间  Self-checking time | R/W | [0,1] | - | 0-360 seconds | |
| 046 | 孤岛保护使能  Island protection enable | R/W | [0,1] |  | MI  0: disable 1: enable | |
| 047 | MPPT路数  MPPT number | R/W | [0,1] | - |  | |
| 缓起使能MI |
| 048 | GFDI使能  GFDI enable | R/W | [0,1] | - | MI  0: disable 1: enable | |
| 049 | RCD使能  RCD enable | R/W | [0,1] | - | 0: disable 1: enable | |
| 过频降载使能MI |
| 050 | RISO 使能  RISO enable | R/W | [0,1] |  | 0: disable 1: enable | |
| 051 | 并网标准  GridStandard | R/W | [0,20] |  | 1, 中国2, 巴西3,印度4，EN50438 5,其他MI  1, China 2, Brazil 3, India 4, EN50438 5, others | |
| 052 | PV曲线使能  PV curve enable | R/W | [0,1] |  | 0: disable 1: enable | |
| 053 | 低压穿越使能  Low voltage across enable |  |  |  | 0: disable 1: enable | |
| 054 | EEPROM 初始使能  EEPROM initial enabled | R/W | [0,2] | - | 0: 正常工作 MI  1: 初始化控制板 EEPROM  2: 初始化通讯板 EEPROM  0: normal operation  1: initialize the control board EEPROM  2: initialize the communication board EEPROM | |
| 055 | 功能测试下的指令1  Factory only | R/W | [0,3] | - | Bit0 开测试使能(使能这后面的才有效)  Bit1 开逆变器全部风扇  Bit2 闪显示板的所有LED，蜂蜜器，背光,显示红黄蓝  Bit3 开启锂电池接口测试 | |
| 056 | Limter功能使能  Limter function enable | R/W | 0x0000 | - |  | |
| 057 | 发电量修正系数  PowerWH Factor | R/W |  | -0.01 | 100 mean 1  111 mean 1.11 | |
| 058 | RSD使能  RSD enable | R/W | 0x0001 | - |  | 0x0001 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 实时运行数据区Run the data area in real time | | | | | | | | | | | | | | | | | |
| 059 | 运行状态  run state | | | | R | | | | [0,5] | | | | - | | | | 见运行状态编码表MI  See the code table of running state |
| 060 | 当日有功发电量  DayActive PowerWh | | | | R | | | | [-32768,32767] | | | | 0.1kWh | | | | 有符号整形MI  Signed int |
| 061 | 当日无功发电量  DayReactive PowerWh | | | | R | | | | [-32768,32767] | | | | 0.1kVarh | | | | 有符号整形  Signed int |
| 062 | 当日并网时间  Day Grid Work Time | | | | R | | | | [0,65535] | | | | S | | | |  |
| 063 | 总有功发电量低字  Total\_Active\_PowerWh low word | | | | R | | | | [0,0xFFFFFFFF] | | | | 0.1kWh | | | | 有符号整形MI  Signed int |
| 064 | 总有功发电量高字  Total\_Active\_PowerWh high word | | | | R | | | |
| 065 | String | 总无功发电量低字Total\_Reactive\_PowerWh low word | | | R | | | | [0,0xFFFF] | | | | 0.1kVarh | | | |  |
| Hybird | 当月PV发电量SG:Month\_PV\_PowerWh | | |  | | | | 1kwh | | | |
| MI | 组件1当日发电量 | | | 0.1kwh | | | |
| 066 | String | 总无功发电量高字  Total\_Reactive\_PowerWh high word | | | R | | | | [0,0xFFFF] | | | | 0.1kVarh | | | |  |
| Hybird | 当月用电量  Month\_Load\_PowerWh | | | 1kwh | | | |
| 0.1kwh | | | |
| MI | 组件2当日发电量 | | |
| 067 | String | 总发电时间低字  Total Work time low word | | | R | | | | [0,0xFFFF] | | | | 0.1h | | | |  |
| Hybird | 电网当月卖电量  SG: Month\_Grid\_PowerWh | | | 1kwh | | | |
| MI | 组件3当日发电量 | | | 0.1kwh | | | |
| 068 | String | 总发电时间高字  Total Work time high word | | | R | | | | [0,0xFFFF] | | | | 0.1h | | | | 液晶统计，DLN高地位取反  LCD statistics, DLN high status reversed |
| Hybird | PV当年发电量低位Year\_PV\_PowerWh  Low word | | | 0.1kwh | | | |
| MI | 组件4当日发电量 | | | 0.1kwh | | | |
| 069 | String | 逆变效率  inverter efficiency | | | R | | | | [0,999] | | | | 0.1% | | | |  |
| Hybird | PV当年发电量高位Year\_PV\_PowerWh  high word | | | 0.1kwh | | | |
| MI | 组件1累计发电量低字 | | |
| 070 | String | 电网电压 AB  Grid voltage AB | | | R | | | | [0,9999] | | | | 0.1V | | | |  |
| Hybird | * 电池当日充电量Day\_Batt\_Charge \_PowerWh | | | 0.1kwh | | | |
| MI | 组件1累计发电量高字 | | |
| 071 | String | 电网电压 BC   * Grid voltage BC | | | R | | | | [0,9999] | | | | 0.1V | | | |  |
| Hybird | * 电池当日放电量Day\_Batt\_Discharge\_PowerWh | | | 0.1kwh | | | |
| MI | 组件2累计发电量低字 | | |
| 072 | String | 电网电压 AC  Grid voltage AC | | | R | | | | [0,9999] | | | | 0.1V | | | |  |
| Hybird | * 电池累计充电量低字tatol\_Batt\_charge\_PowerWh\_low word | | | 0.1kwh | | | |
| MI | 组件2累计发电量高字 | | |
| 073 | String | 电网电压 A  Grid voltage A | | | R | | | | [0,9999] | | | | 0.1V | | | | MI |
| Hybird | * 电池累计充电量高字tatol\_Batt\_charge\_PowerWh \_high\_word | | | 0.1kwh | | | |
|  |  | | |
| 074 | String inverter | 电网电压 B  Grid voltage B | | | R | | | | [0,9999] | | | | 0.1V | | | |  |
| Hybird inverter | * 电池累计放电量低字tatol\_Batt\_Discharge\_PowerWh\_low word | | | 0.1kwh | | | |
| MI | 组件3累计发电量低字 | | |
| 075 | String | 电网电压 C  Grid voltage C | | | R | | | | [0,9999] | | 0.1V | | | | | |  |
| Hybird | * 电池累计放电量高字tatol\_Batt\_Discharge\_PowerWh\_high\_word | | | 0.1kwh | | | | | |
| MI | 组件3累计发电量高字 | | |
| 076 | String | 电网电流 A  Grid current A | | | R | | | | [0,65535] | | 0.1A | | | | | | MI |
| Hybird | 电网当日购电量  Day\_GridBuy\_Power Wh | | | 0.1kwh | | | | | |
| 077 | String | 电网电流 B  Grid current B | | | R | | | | [0,65535] | | 0.1A | | | | | |  |
| Hybird | 电网当日卖电量  Day\_GridSell\_Power Wh | | | 0.1kwh | | | | | |
| MI | 组件4累计发电量低字 | | |
| 078 | String inverter | 电网电流 C  Grid current C | | | R | | | | [0,65535] | | 0.1A | | | | | |  |
| Hybird | 电网累计购电量低字  Total\_GridBuy\_Power Wh\_low word | | | 0.1kwh | | | | | |
| MI | 组件4累计发电量高字 | | |
| 079 | 电网频率  Grid frequency | | | | R | | | | [0,9999] | | 0.01Hz | | | | | | MI |
| 080 | String | 显示功率低字节  Displays low power bytes | | | R | | | 0x0000 | | | 0.1W | | | | | |  |
| Hybird | 电网累计购电量高字  Total\_Grid Buy\_Power Wh\_high word | | | 0.1kwh | | | | | |
|  |  | | |
| 081 | String | 显示功率高字节  Displays high power bytes | | | R | | | 0x0000 | | | 0.1W | | | | | |  |
| Hybird | 电网累计卖电量低字  Total\_GridSell\_Power Wh\_low word | | | 0.1kwh | | | | | |
|  |  | | |
| 082 | String inverter | 输入有功功率低字  Input\_active\_ power\_low word | | | R | | | [0,0xFFFFFFFF] | | | 0.1W | | | | | |  |
| Hybird | 电网累计卖电量高字  Total\_GridSell\_Power Wh\_high word | | | 0.1kwh | | | | | |
| 083 | String | 输入有功功率高字  Input active power high word | | | R | | |  | | | 0.1W | | | | | |  |
| Hybird | 发电机日工作时间  Generator daily operating time | | | 0.1小时 | | | | | | 240表示24小时 |
| 084 | String | 输出视在功率低字  output apparent power low word | | | R | | | [0,0xFFFF] | | | 0.1VA | | | | | |  |
| Hybird | 当日用电量  SG:Day\_Load\_Power Wh | | | 0.1kwh | | | | | |
| 085 | String | 输出视在功率高字  output apparent power high word | | | R | | | [0,0xFFFF] | | | 0.1VA | | | | | |  |
| Hybird | 累计用电量低字  Total\_Load\_Power Wh\_low word | | | 0.1kwh | | | | | |
| 086 | String | 输出有功功率低字  Output active power low word | | | R | | | [0,0xFFFF] | | | 0.1W | | | | | | MI |
| Hybird | 累计用电量高字  Total\_Load\_Power Wh\_high word | | | 0.1kwh | | | | | |
| 087 | String | 输出有功功率高字  Output active power high word | | | R | | | [0,0xFFFF] | | | 0.1W | | | | | |
| Hybird | 当年用电量低字  Year\_Load\_Power Wh\_low word | | | 0.1kwh | | | | | |
| 088 | String | 输出无功功率低字  Output reactive power low word | | | R | | | [0,0xFFFF] | | | 0.1Var | | | | | |  |
| Hybird | 当年用电量高字  Year\_Load\_Power Wh\_high word | | | 0.1kwh | | | | | |
| 089 | 输出无功功率高字  Output reactive power high word | | | | R | |  | | | |  | | | | |  | |
|
| 090 | 散热片温度(DC变压器温度)  Radiator temperature (DCTransformer temperature) | | | | R | | [0,3000] | | | | 0.1℃ | | | | | MI | |
| 091 | IGBT 模块温度(储能式AC散热器温度)  IGBT temperature (Radiator temperature) | | | | R | | [0,3000] | | | | 0.1℃ | | | | | -56.2℃ 表示为 438  0℃ 表示为 1000  50.5 ℃表示为 1505  -56.2℃indicated as 438  0℃ indicated as 1000  50.5 ℃indicated as 1505 | |
| 092 | 电感 1 温度(空缺)  inductance 1 temperature (Void) | | | | R | | [0,3000] | | | | 0.1℃ | | | | |  | |
| 093 | 功率因数  power factor | | | | R | | R/W | | | | [0,1000] | | | | | 真实值\*1000 | |
| 094 | SD卡状态  SD Card Status | | | | R | | [0,3000] | | | | 0.1℃ | | | | | 1000 表示SD故障，2000正常   * 1000 indicated as SD fault，2000 normal | |
| 095 | 环境温度  environment temperature | | | | R | | [0,3000] | | | | 0.1℃ | | | | |  | |
| 096 | 历史PV发电量低字  historyPV PowerWh low word | | | | R | | [0,0xFFFFFFFF] | | | | 0.1kWh | | | | |  | |
| 097 | 历史PV发电量高字  historyPV PowerWh high word | | | | R | | 0.1kWh | | | | |  | |
| 098 | String inverter | | RCD 漏电流  RCD leak current | | R | | [0,65535] | | | | | 0.01A | | | |  | |
| Hybird | | 电网当年卖电量低字  Year\_GridSell\_Power Wh\_low word | | 0.1kwh | | | |
| 099 | String | | Limter功率  Limter power | | R | | 0x0000 | | | | | 1W | | | |  | |
| Hybird | | 电网当年卖电量高字  Year\_GridSell\_Power Wh\_high word | | 0.1kwh | | | |
| 100 | 其他测试标志位  Other test flag bits | | | | R | | 0x0000 | | | |  | | | | Bit0 拉弧通讯标志  Bit1 可并联CAN通讯 1：正常  Bit8 锂电接口RS485  Bit9 锂电接口CAN  Bit10 按键1234  Bit0 arc communication sign  Bit8 li-ion battery interface RS485  Bit9 Li-ion battery interface CAN  Bit10 buttons 1 2 3 4  Bit11 液晶中断状态 1：正常 | | |
| 101 | 告警信息第 1 字  Warning message word 1 | | | | R | | [0,65535] | | | | - | | | | 见告警信息编码表  See the alarm information coding table | | |
| 102 | 告警信息第 2 字  Warning message word 2 | | | | R | | [0,65535] | | | |  | | | | 见告警信息编码表  See the alarm information coding table | | |
| 103 | 故障信息第 1字  Fault information word 1 | | | | R | | [0,65535] | | | |  | | | | 见故障信息编码表MI  See the fault information coding table | | |
| 104 | 故障信息第 2字  Fault information word 2 | | | | R | | [0,65535] | | | |  | | | | 见故障信息编码表  See the fault information coding table | | |
| 105 | 故障信息第 3 字  Fault information word 3 | | | | R | | [0,65535] | | | |  | | | | 见故障信息编码表  See the fault information coding table | | |
| 106 | 故障信息第 4 字  Fault information word 4 | | | | R | | [0,65535] | | | |  | | | | 见故障信息编码表  See the fault information coding table | | |
| 107 | 电池校正后的容量Corrected\_AH | | | | R | | [0,1000] | | | | 1AH | | | | 100 is 100AH | | |
| 108 | 当日PV发电量  Day PV PowerWh | | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | |
| 109 | 直流电压1  Dc voltage 1 | | | | R | | [0,65535] | | | | 0.1V | | | | MI | | |
| 110 | 直流电流1  Dc current 1 | | | | R | | [0,65535] | | | | 0.1A | | | | MI | | |
| 111 | 直流电压2  Dc voltage 2 | | | | R | | [0,65535] | | | | 0.1V | | | | MI | | |
| 112 | 直流电流2  Dc current 2 | | | | R | | [0,65535] | | | | 0.1A | | | | MI | | |
| 113 | 直流电压3  Dc voltage 3 | | | | R | | [0,65535] | | | | 0.1V | | | | MI | | |
| 114 | 直流电流3  Dc current 3 | | | | R | | [0,65535] | | | | 0.1A | | | | MI | | |
| 115 | 直流电压4  Dc voltage 4 | | | | R | | [0,65535] | | | | 0.1V | | | | MI | | |
| 116 | 直流电流4  Dc current 4 | | | | R | | [0,65535] | | | | 0.1A | | | | MI | | |
| 117 | 保留  undefined | | | | R | | 0x0000 | | | | - | | | | 保留字  undefined | | |
| 118 | 保留  undefined | | | | R | | 0x0000 | | | |  | | | |  | | |
| ~~119~~ | ~~PV4 PV3 PV2 PV1~~  ~~是否损坏~~  ~~Whether the damage~~ | | | | ~~R~~ | | ~~0x0000~~ | | | |  | | | | ~~0x0000表示无损坏，~~  ~~Means no damage,~~  ~~0x1000 表示PV4损坏~~  ~~Indicates that PV4 is corrupt~~  ~~0x0100 表示PV3 损坏~~  ~~Denotes PV3 corruption~~ | | |
| 120 | 调试数据  Debug Data | | | | R | | 0x0000 | | | |  | | | |  | | |
| 121 | 调试数据  Debug Data | | | | R | | 0x0000 | | | |  | | | |  | | |
| 122 | 调试数据  Debug Data | | | | R | | 0x0000 | | | |  | | | |  | | |
| 123 | 调试数据  Debug Data | | | | R | | 0x0000 | | | |  | | | |  | | |
| 124 | 调试数据  Debug Data | | | | R | | 0x0000 | | | |  | | | |  | | |
|  |  | | | |  | |  | | | |  | | | |  | | |
|  |  | | | |  | |  | | | |  | | | |  | | |
|  |  | | | |  | |  | | | |  | | | |  | | |
| This range is only for string inverter | | | | | | | | | | | | | | | | | |
| 150 | 组串1电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 151 | 组串2电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 152 | 组串3电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 153 | 组串4电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 154 | 组串5电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 155 | 组串6电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 156 | 组串7电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 157 | 组串8电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 158 | 组串9电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 159 | 组串10电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 160 | 组串11电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 161 | 组串12电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 162 | 组串13电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 163 | 组串14电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 164 | 组串15电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 165 | 组串16电流 | | | R | | [0,65535] | | | | 0.1A | | | |  | | | |
| 166 | 组串1发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 167 | 组串1发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 168 | 组串2发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 169 | 组串2发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 170 | 组串3发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 171 | 组串3发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 172 | 组串4发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 173 | 组串4发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 174 | 组串5发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 175 | 组串5发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 176 | 组串6发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 177 | 组串6发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 178 | 组串7发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 179 | 组串7发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 180 | 组串8发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 181 | 组串8发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 182 | 组串9发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 183 | 组串9发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 184 | 组串10发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 185 | 组串10发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 186 | 组串11发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 187 | 组串11发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 188 | 组串12发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 189 | 组串12发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 190 | 组串13发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 191 | 组串13发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 192 | 组串14发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 193 | 组串14发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 194 | 组串15发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 195 | 组串15发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 196 | 组串16发电量低字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |
| 197 | 组串16发电量高字节 | | | R | | [0,65535] | | | | 0.1kWh | | | |  | | | |

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| --- | --- | --- | --- | --- | --- |
| 198 | 负载有功功率低字  Input\_active\_ power\_low word | R | 1W |  |  |
| 199 | 负载有功功率高字  Input active power high word | R | 1W |  |  |
| 200 | 当日用电量  Day\_Load\_Power Wh |  | 0.01kwh |  |  |
| 201 | 累计用电量低字  history\_Load\_Power Wh\_low word |  | 0.1kwh |  |  |
| 202 | 累计用电量高字  history\_Load\_Power Wh\_high word |  | 0.1kwh |  |  |
| 203 | 电表有功功率低字  Meter\_active\_ power\_low word | R | 1W |  | 带有正负的int型 Signed int |
| 204 | 电表有功功率高字  Meter active power high word | R | 1W |  | 带有正负的int型 Signed int |
| 205 | 当日卖电量  Day\_ GridSell \_Power Wh |  | 0.01kwh |  |  |
| 206 | 累计卖电量低字  history\_ GridSell \_Power Wh\_low word |  | 0.1kwh |  |  |
| 207 | 累计卖电量高字  history\_ GridSell \_Power Wh\_high word |  | 0.1kwh |  |  |
| 208 | 当日购电量  Day\_ GridBuy \_Power Wh |  | 0.01kwh |  |  |
| 209 | 累计购电量低字  history\_ GridBuy \_Power Wh\_low word |  | 0.1kwh |  |  |
| 210 | 累计购电量高字  history\_ GridBuy \_Power Wh\_high word |  | 0.1kwh |  |  |

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| --- | --- | --- | --- | --- | --- |
| 储能逆变器增加的实时属性区 | | | | | |
| 150 | 电网侧电压L1-N  Grid side voltage L1-N | R |  | 0.1V |  |
| 151 | 电网侧电压L2-N  Grid side voltage L2-N | R |  | 0.1V |  |
| 152 | 电网侧电压L1-L2  Grid side voltage L1-L2 | R |  | 0.1V |  |
| 153 | 继电器中间侧电压  L1-L2  Voltage at middle side of relay L1-L2 | R |  | 0.1V |  |
| 154 | 逆变器输出电压L1-N  inverter output voltage L1-N | R |  | 0.1V |  |
| 155 | 逆变器输出电压L2-N  inverter output voltage L2-N | R |  | 0.1V |  |
| 156 | 逆变器输出电压L1-L2 inverter output voltage L1-L2 | R |  | 0.1V |  |
| 157 | 负载测电压L1  Load voltage L1 | R |  | 0.1V |  |
| 158 | 负载测电压L2  Load voltage L2 | R |  | 0.1V |  |
| 159 | 保留 | R |  |  |  |
| 160 | 电网侧电流L1  Grid side current L1 | R |  | 0.01A | 带有正负的int型 Signed int |
| 161 | 电网侧电流L2  Grid side current L2 | R |  | 0.01A | 带有正负的int型 Signed int |
| 162 | 电网外置Limter电流L1  Grid external Limter current L1 | R |  | 0.01A | 带有正负的int型 Signed int |
| 163 | 电网外置Limter电流L2  Grid external Limter current L2 | R |  | 0.01A | 带有正负的int型 Signed int |
| 164 | 逆变器输出电流L1  Inverter output current L1 | R |  | 0.01A | 带有正负的int型 Signed int |
| 165 | 逆变器输出电流L2  Inverter output current L2 | R |  | 0.01A | 带有正负的int型 Signed int |
| 166 | Gen做微逆输入的功率  Gen Do micro inverse power input | R |  | 1W |  |
| 167 | 电网侧L1功率  Grid side L1 power | R |  | 1W | 带有正负的int型 Signed int |
| 168 | 电网侧L2功率  Grid side L2 power | R |  | 1W | 带有正负的int型 Signed int |
| 169 | 电网侧L1L2总功率  Total power of grid side L1L2 | R |  | 1W | 带有正负的int型 大于0购电小于0并网  Signed int  > 0 BUY  < 0 SELL |
| 170 | 电网外置Limter1功率 Grid external Limter1 power | R |  | 1W | 带有正负的int型 Signed int |
| 171 | 电网外置Limter2功率  Grid external Limter2 power | R |  | 1W | 带有正负的int型 Signed int |
| 172 | 电网外置总功率  Grid external Total Power | R |  | 1W | 带有正负的int型 Signed int |
| 173 | 逆变器输出L1功率  inverter outputs L1 power | R |  | 1W | 带有正负的int型 Signed int |
| 174 | 逆变器输出L2功率  inverter outputs L2 power | R |  | 1W | 带有正负的int型 Signed int |
| 175 | 逆变器输出总功率  inverter output Total power | R |  | 1W | 带有正负的int型 Signed int |
| 176 | 负载侧L1功率  Load side L1 power | R |  | 1W | 带有正负的int型 Signed int |
| 177 | 负载侧L2功率  Load side L2 power | R |  | 1W | 带有正负的int型 Signed int |
| 178 | 负载侧总功率  load side Total power | R |  | 1W | 带有正负的int型 Signed int |
| 179 | 负载测电流L1  Load current L1 | R |  | 0.01A | 带有正负的int型 Signed int |
| 180 | 负载测电流L2  Load current L2 | R |  | 0.01A | 带有正负的int型 Signed int |
| 181 | 保留  undefined | R |  |  |  |
| 182 | 电池温度  battery temperature | R | [0,3000] | 0.1℃ | 真实值偏移+1000的值 1200指的是20.0℃  Real value of offset + 1000 1200 is 20.0 ℃ |
| 183 | 电池电压  battery voltage | R |  | 0.01V | 4100标识41.0V  4100 mark of 41.0 V |
| 184 | 电池电量  battery capacity | R | [0,100] | 1% |  |
| 185 | 保留  undefined | R |  |  |  |
| 186 | PV1输入功率  PV1 input power | R |  | 1W |  |
| 187 | PV2输入功率  PV2 input power | R |  | 1W |  |
| 188 | PV3输入功率  PV3 input power | R |  | 1W |  |
| 189 | PV4输入功率  PV4 input power | R |  | 1W |  |
| 190 | 电池输出功率   * Battery output power | R |  | 1W | 带有正负的int型 Signed int |
| 191 | 电池输出电流  Battery output current | R |  | 0.01A | 带有正负的int型 Signed int |
| 192 | 负载频率   * load frequency | R |  | 0.01Hz |  |
| 193 | 逆变器输出频率  Inverter output frequency | R |  | 0.01Hz |  |
| 194 | 电网侧继电器状态  Grid side relay status | R |  |  | 1. 表示没有吸合 Disconnect 2. 表示吸合   closed |
| 195 | 发电机侧继电器状态  Generator side relay status | R |  |  | 低4为表示发电机继电器状态  Low 4 indicates the state of generator relay  0没有吸合not attached  1 吸合actuation  2空缺vacancy  3表示发电机在工作下的吸合Represents the suction and closing of the generator under operation  高4位表示开关信号  The high 4 bits indicate the switch signal  0 关机 power off  1开机 power on |
| 196 | 调试控制板内存值低位 | R |  |  | 调试用 |
| 197 | 调试控制板内存值高位 | R |  |  | 调试用 |
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| 地址 | | 寄存器含义 | 读写 | | | 取值范围 | 单位 | | | 备注 |
| 为储能逆变器增加的可变属性区 | | | | | | | | | | |
| 200 | 电池充电类型  Control Mode | | | R/W | - | | | - | 0x0000 Lead-Battery, four-stage charging method  0x0001 Lithium battery | |
| 201 | Equalization V | | | R/W | [3800,6100] | | | 0.01V | 1480 means 14.8v | |
| 202 | Absorption V | | | R/W | [3800,6100] | | | 0.01V | 1440 means 14.4v | |
| 203 | Float V | | | R/W | [3800,6100] | | | 0.01V | 1440 means 14.4v | |
| 204 | 电池容量  Batt Capacity | | | R/W | [0,2000] | | | 1 Ah | 200 means 200AH | |
| 205 | 液晶下发的锂电池电量  Lithium battery capacity of LCD | | | R/W |  | | | 1% |  | |
| 206 | 电池低温保护点1  Battery low temperature protection point 1 | | | R/W |  | | | 0.1℃ | 真实值偏移1000 如1201表示20.1℃  Real value migration such as 1000 to 1201 said 20.1 ℃ | |
| 207 | 均衡充几天执行一次  Equalization day cycle | | | R/W | [0 90] | | | Day |  | |
| 208 | 均衡充执行时间  Equalization time | | | R/W | [0 20] | | | 0.5Hour | 分辨率 0.5小时  Resolution 0.5 h | |
| 209 | 温度补偿值  TEMPCO | | | R/W | [0,50] | | | 1mV/℃ | 带有正负的int型 Signed int | |
| 210 | 电池最大充电电流  Max A Charge | | | R/W | [0,185] | | | 1A | 0-185A | |
| 211 | 电池最大放电电流  Max A discharge | | | R/W | [0,185] | | | 1A | 0-185A | |
| 212 | 保留  undefined | | | R/W |  | | |  |  | |
| 213 | 电池工作根据电压还是容量  battery operates according to voltage or capacity | | | R/W |  | | |  | 1. 根据电压 According to the voltage 2. 根据容量 According to the capacity   2 没有电池 no battery | |
| 214 | 锂电池唤醒标志位  Lithium battery wake up sign bit | | | R/W |  | | |  | 0 enabled  1 Disable | |
| 215 | 电池内阻值  battery resistance value | | | R/W | [0,6000] | | | mΩ |  | |
| 216 | 电池充电效率  Battery charging efficiency | | | R/W | [0-100] | | | 0.1% | 983表示98.3%  983 is 98.3% | |
| 217 | 电池容量ShutDown  battery capacity ShutDown | | | R/W | [0,100] | | | 1% | 低容量截止点  Low capacity cutoff point | |
| 218 | 电池容量Restart  battery capacityRestart | | | R/W | [0,100] | | | 1% | 保护恢复点  Protection recovery point | |
| 219 | 电池容量LowBatt  battery capacityLowBatt | | | R/W | [0,100] | | | 1% |  | |
| 220 | 电池电压ShutDown  battery voltageShutDown | | | R/W | [3800,6100] | | | 0.01V | 低保护点 cutoff 41V  Low protection point cutoff 41V | |
| 221 | 电池电压Restart  battery voltageRestart | | | R/W | [3800,6100] | | | 0.01V | Reboot /recover 52V | |
| 222 | 电池电压LowBatt  battery voltageLowBatt | | | R/W | [3800,6100] | | | 0.01V | 放电深度 46V Discharge depth 46V | |
| 223 | 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 | |
| 224 | 发电机冷却时间  Generator cooling time | | |  |  | | | 0.1 hours | 120表示12小时  120 is 12 hours | |
| 225 | 发电机充电启动电压点  Generator charging Starting voltage point | | | R/W | [0000 6300] | | | 0.01V | 电池电压小于这个值发电机开启充电  The battery voltage is less than this value | |
| 226 | 发电机充电启动容量点  Generator charging starting capacity point | | | R/W | [0000 6300] | | | 1% | 电池容量小于这个值发电机开启充电  The battery capacity is less than this value | |
| 227 | 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 | |
| 228 | 市电充电启动电压点  Grid charging Start voltage point o | | | R/W | [0000 6300] | | | 0.01v |  | |
| 229 | 市电充电启动容量点  Grid charging start capacity point | | | R/W | [0000 6300] | | | 1% |  | |
| 230 | 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 | |
| 231 | 发电机充电使能  Generator is charged to enable | | | R/W |  | | |  |  | |
| 232 | 市电充电使能  Grid is charged to enable | | | R/W |  | | |  |  | |
| 233 | Solar输入为PSU   * Solar Input as PSU | | | R/W | [0 1 ] | | |  | 0为solar 1为PSU  0 is solar 1 is PSU | |
| 234 | 强制开启发电机作为负载功能  Force on generator as load function | | | R/W |  | | |  | 前提是235号寄存器已经使能1  The premise is that register 234 has enabled 1   * 0 不强制 Do not force   1 强制 force | |
| 235 | 发电机输入作为负载输出使能  generator input is enabled as the load output | | | R/W |  | | |  | 0 只作为发电机输入  Disable generator input  1 智能负载输出Enable generator input as load output  2 使能作为逆变器输入  Enable as inverter input | |
| 236 | 发电机负载OFF电压  SmartLoad OFF batt Voltage | | | R/W | [3800 6300] | | | 0.01V |  | |
| 237 | 发电机负载OFF电量  SmartLoad OFF batt | | | R/W | [0000 100] | | | 1% |  | |
| 238 | 发电机负载ON电压  SmartLoad ON batt  Voltage | | | R/W | [3800 6300] | | | 0.01V |  | |
| 239 | 发电机负载ON电量  SmartLoad ON batt | | | R/W | [0000 100] | | | 1% |  | |
| 240 | PWM测试使能   * PWM Test Enable | | | R/W |  | | |  | 0 默认值  default  1 要进入pwm测试功能  To enter the PWM test function | |
| 241 | 开启发电机的最小solar功率  minimum solar power required to start a generator | | | R/W | [0,8000] | | | 1W |  | |
| 242 | Gen\_Grid\_Signal On | | |  |  | | |  |  | |
| 243 | 能量管理模式  Energy management model | | |  |  | | |  | |  | | --- | | 0：电池优先模式Battery priority mode | | 1：负载优先模式Load first mode | | |
| 244 | limit控制功能  limit control function | | | R/W |  | | | 0/1 | 0x00 使能卖电  sell electricity enabled  0x01 使能内置 built-in enabled  0x02 使能外置  extraposition enabled | |
| 245 | 限制并网最大功率输出  Limit the maximum power output of the grid connection | | | R/W | [0,8000] | | | 1W | 代表总功率  Represents total power | |
| 246 | 外置电流传感器方向  External current sensor clamp phase | | | R/W | [xx,00] | | | 1W | [11][12] | |
| 247 | 光伏卖电  Solar sell | | | R/W |  | | |  | 0x00光伏不卖电 solar Don't sell 0x01光伏卖电 solar sell | |
| 248 | 高级削峰填谷功能使能  Time of Use Selling enabled | | | R/W |  | | |  | 0 Disable  0xFF enabled | |
| 249 | 预留  undefined  undefined | | | R/W |  | | |  |  | |
| 250 | 卖电模式时间点1  Sell mode time point 1  Sell mode time point 1 | | | R/W | [0000 2359] | | |  | 2359表示时间23：59  2359 means time 23:59 | |
| 251 | 卖电模式时间点2  Sell mode time point 2 | | | R/W | [0000 2359] | | |  |  | |
| 252 | 卖电模式时间点3  Sell mode time point 3 | | | R/W | [0000 2359] | | |  |  | |
| 253 | 卖电模式时间点4  Sell mode time point 4 | | | R/W | [0000 2359] | | |  |  | |
| 254 | 卖电模式时间点5  Sell mode time point5 | | | R/W | [0000 2359] | | |  |  | |
| 255 | 卖电模式时间点6  Sell mode time point6 | | | R/W | [0000 2359] | | |  |  | |
| 256 | 卖电模式时间点1功率  Sell mode time point 1 power | | | R/W | [0000 8000] | | | 1W | 受到电池最大放电功率影响 Affected by the maximum discharge power of the battery | |
| 257 | 卖电模式时间点2功率  Sell mode time point 2 power | | | R/W | [0000 8000] | | | 1W |  | |
| 258 | 卖电模式时间点3功率 Sell mode time point 3 power | | | R/W | [0000 8000] | | | 1W |  | |
| 259 | 卖电模式时间点4功率 Sell mode time point 4 power | | | R/W | [0000 8000] | | | 1W |  | |
| 260 | 卖电模式时间点5功率 Sell mode time point 5 power | | | R/W | [0000 8000] | | | 1W |  | |
| 261 | 卖电模式时间点6功率 Sell mode time point 6 power | | | R/W | [0000 8000] | | | 1W |  | |
| 262 | 卖电模式时间点1电压 Sell mode time point 1 voltage | | | R/W | [0000 6300] | | | 0.01V | 受到电池电压的影响  Is affected by the battery voltage | |
| 263 | 卖电模式时间点2电压 Sell mode time point 2 voltage | | | R/W | [0000 6300] | | | 0.01V |  | |
| 264 | 卖电模式时间点3电压 Sell mode time point 3 voltage | | | R/W | [0000 6300] | | | 0.01V |  | |
| 265 | 卖电模式时间点4电压 Sell mode time point 4 voltage | | | R/W | [0000 6300] | | | 0.01V |  | |
| 266 | 卖电模式时间点5电压 Sell mode time point 5 voltage | | | R/W | [0000 6300] | | | 0.01V |  | |
| 267 | 卖电模式时间点6电压 Sell mode time point 6 voltage | | | R/W | [0000 6300] | | | 0.01V |  | |
| 268 | 1容量 1 capacity | | | R/W | [0,100] | | | 1% |  | |
| 269 | 2容量 2 capacity | | | R/W | [0,100] | | | 1% |  | |
| 270 | 3容量 3 capacity | | | R/W | [0,100] | | | 1% |  | |
| 271 | 4容量 4 capacity | | | R/W | [0,100] | | | 1% |  | |
| 272 | 5容量 5 capacity | | | R/W | [0,100] | | | 1% |  | |
| 273 | 6容量 6 capacity | | | R/W | [0,100] | | | 1% |  | |
| 274 | 时间点1充电使能  Time point 1 charge enable | | | R/W | [0,1] | | |  |  | |
| 275 | 时间点2充电使能  Time point 2 charge enable | | | R/W | [0,1] | | |  |  | |
| 276 | 时间点3充电使能  Time point 3 charge enable | | | R/W | [0,1] | | |  |  | |
| 277 | 时间点4充电使能  Time point 4 charge enable | | | R/W | [0,1] | | |  |  | |
| 278 | 时间点5充电使能  Time point 5 charge enable | | | R/W | [0,1] | | |  |  | |
| 279 | 时间点6充电使能  Time point 6 charge enable | | | R/W | [0,1] | | |  |  | |
| 280 | Microinverter export to grid cutoff | | | R/W | [0,1] | | |  | Bit0-3 0:Disable 1:enable  Bit4-7 0:Gen peak-shaving disable  1:Gen peak-shaving enable  Bit8-11 0:Grid peak-shaving disable  1:Grid peak-shaving enable  Bit12-16 On Grid always on | |
| 281 | 外置传感器自动检测方向使能 | | | R/W | [0,1] | | |  |  | |
| 282 | **恢复并网时间**  Restore connection time | | | R/W | [10 300] | | |  |  | |
| 283 | Solar Arc Fault模式开启   * Solar Arc Fault Mode turned on | | | R/W | [0 1] | | |  | * 0x00 关闭 Close * 0x01 开启 open   0x02 拉弧故障清零，逆变器收到02说明液晶下发清零标志了，然后自动变回01  Arc fault reset, the inverter received 02 that the LCD issued a clear mark, and then automatically back to 01 | |
| 284 | 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  …… | |
| 285 | 电网频率设置  Grid Frequency | | | R/W | [0 1] | | |  | 0x00 50HZ  0x01 60hz | |
| 286 | 电网类型设置  Grid Type | | | R/W | [0 3 ] | | |  | 0x00 单相240V/230V/220V  Single-phase 240 v / 230 v / 220 v  0x01 表示两相120V/240V  Stands for two-phase 120V/240V  0x02 表示三相系统208V 120度120V  Represents the three-phase system 208V 120 degrees 120V  0X03 120V Single Phase | |
| 287 | 电网高压保护点  Grid Vol High | | | R/W | [1800 2700] | | | 0.1V |  | |
| 288 | 电网低压保护点  Grid Vol Low | | | R/W | [1800 2700] | | | 0.1V |  | |
| 289 | 电网频率高保护点  Grid Hz High | | | R/W | [4500 6500] | | | 0.01Hz |  | |
| 290 | 电网频率低保护点  Grid Hz Low | | | R/W | [4500 6500] | | | 0.01Hz |  | |
| 291 | 发电机连接到电网输入端 | | | R/W | [1 0] | | |  | 0 disable  1 enabled | |
| 292 | GEN peak shaving Power | | | R/W | [0 16000] | | | 1w |  | |
| 293 | GRID peak shaving Power | | | R/W | [0 16000] | | | 1w |  | |
| 294 | SmartLoad Open Delay | | | R/W | [1 120] | | | 1Minute |  | |
| 295 | 输出PF值设定（有功调节） | | | R/W | [800 1200] | | |  | 800表示调整到80% 1200标识调整到120%  800 for 80%, 1200 for 120% | |
| 296 | 逆变器种类  Type of inverter | | | R/W | [0 1] | | |  | 0 欧洲单相款European single phase  1 北美双相款North American biphasic | |
| 297 | ARC\_facTory\_B高位  ARC\_facTory\_B high word | | | R/W | [0,65535] | | |  | 高位和地位组合，以数值显示即可  High and status combination, with numerical display can be | |
| 298 | 低位  Low word | | | R/W | [0,65535] | | |  |
| 299 | ARC\_facTory\_I高位ARC\_facTory\_I high word | | | R/W | [0,65535] | | |  |  | |
| 300 | 低位  Low word | | | R/W | [0,65535] | | |  |  | |
| 301 | ARC\_facTory\_F高位  ARC\_facTory\_F high word | | | R/W | [0,65535] | | |  |  | |
| 302 | 低位  Low word | | | R/W | [0,65535] | | |  |  | |
| 303 | ARC\_facTory\_D高位  ARC\_facTory\_D high word | | | R/W | [0,65535] | | |  |  | |
| 304 | 低位  Low word | | | R/W | [0,65535] | | |  |  | |
| 305 | ARC\_facTory\_T高位  ARC\_facTory\_T high word | | | R/W | [0,65535] | | |  |  | |
| 306 | 低位  Low word | | | R/W | [0,65535] | | |  |  | |
| 307 | ARC\_facTory\_C高位  ARC\_facTory\_C high word | | | R/W | [0,65535] | | |  |  | |
| 308 | 低位  Low word | | | R/W | [0,65535] | | |  |  | |
| 309 | ARC\_facTory\_Frz高位  ARC\_facTory\_Frz high word | | | R/W | [0,65535] | | |  |  | |
| 310 | 低位  Low word | | | R/W | [0,65535] | | |  |  | |
| 311 |  | | | R/W |  | | |  |  | |
| 312 | 充电电压  charging voltage | | | R/W |  | | | 0.01V |  | |
| 313 | 放电电压  discharge voltage | | | R/W |  | | | 0.01V |  | |
| 314 | 充电限流  charging current limiting | | | R/W |  | | | 1A |  | |
| 315 | 放电限流  Discharge current limiting | | | R/W |  | | | 1A |  | |
| 316 | 当前容量   * real time Capacity | | | R/W |  | | | 1% |  | |
| 317 | 当前电压  real time voltage | | | R/W |  | | | 0.01V |  | |
| 318 | 当前电流   * real time current | | | R/W |  | | | 1A |  | |
| 319 | 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 | |
| 320 | 充电限流 最大值 Maximum charge current limit | | | R/W |  | | | 1A |  | |
| 321 | 放电限流 最大值  Maximum discharge current limiting | | | R/W |  | | |  |  | |
| 322 | 锂电池告警位  Lithium battery alarm position | | | R/W |  | | |  | 0x0001 | |
| 323 | 锂电池故障位  Lithium battery fault location | | | R/W | [0,65535] | | |  |  | |
| 324 | 锂电池标志2  Lithium battery symbol 2 | | | R/W | [0,65535] | | |  | * Bit0 空缺 Vacancy   Bit1 强冲标志 Strong impact marks | |
| 325 | 锂电池类型  Lithium battery type | | | R/W |  | | |  | 0x0000 中兴派能 德朗能锂  PYLON SOLAX  通用CAN协议  0x0100 天邦达RS485modbus协议  0x0200 KOK协议  0x0300 keith  0X0400 拓派协议  0X0500 派能485协议 | |
| 326 |  | | |  |  | | |  |  | |
| 327 |  | | |  |  | | |  |  | |
| 328 |  | | |  |  | | |  |  | |
| 329 |  | | |  |  | | |  |  | |
| 330 | 通讯板设置功能 | | | R/W |  | | |  | Bit0 时间校时 0关闭1打开  Bit1 beep 0关闭1打开 | |
| 331 | 加州低压高压穿越CA\_LHVRT使能  California low pressure high pressure through CA\_LHVRT enable | | | R/W | [0,1] | | |  | 0: disable 1: enable | |
| 332 | CA\_HV2 | | | R/W | [1000,3000] | | | 0.1V |  | |
| 333 | CA\_HV1 | | | R/W |  | | |  |  | |
| 334 | CA\_LV1 | | | R/W |  | | |  |  | |
| 335 | CA\_LV2 | | | R/W |  | | |  |  | |
| 336 | CA\_LV3 | | | R/W |  | | |  |  | |
| 337 | CA\_HV2\_Time | | | R/W | [0,300] | | |  | 0 is 0.16S | |
| 338 | CA\_HV1\_Time | | | R/W |  | | |  |  | |
| 339 | CA\_LV1\_Time | | | R/W |  | | |  |  | |
| 340 | CA\_LV2\_Time | | | R/W |  | | |  |  | |
| 341 | CA\_LV3\_Time | | | R/W |  | | |  |  | |
| 342 | 加州低频高频穿越CA\_LHFRT使能  California low frequency high frequency traverses CA\_LHFRT enable | | | R/W |  | | |  |  | |
| 343 | CA\_HF2 | | | R/W | [4500,6500] | | | 0.01Hz |  | |
| 344 | CA\_HF1 | | | R/W |  | | |  |  | |
| 345 | CA\_LF1 | | | R/W |  | | |  |  | |
| 346 | CA\_LF2 | | | R/W |  | | |  |  | |
| 347 | CA\_HF2\_Time | | | R/W | [0,300] | | |  |  | |
| 348 | CA\_HF1\_Time | | | R/W |  | | |  |  | |
| 349 | CA\_LF1\_Time | | |  |  | | |  |  | |
| 350 | CA\_LF2\_Time | | |  |  | | |  |  | |
| 351 | 加州CA\_QV使能  California CA\_QV enable | | |  |  | | |  |  | |
| 352 | CA\_QV\_V1 | | |  | [1000,3000] | | |  |  | |
| 353 | CA\_QV\_V2 | | |  |  | | |  |  | |
| 354 | CA\_QV\_V3 | | |  |  | | |  |  | |
| 355 | CA\_QV\_V4 | | |  | [-44,+44] | | | 0.01 |  | |
| 356 | CA\_QV\_Q1 | | |  |  | | |  |  | |
| 357 | CA\_QV\_Q2 | | |  |  | | |  |  | |
| 358 | CA\_QV\_Q3 | | |  |  | | |  |  | |
| 359 | CA\_QV\_Q4 | | |  |  | | |  |  | |
| 360 | 加州CA\_FW使能  California CA\_FW enable | | |  |  | | |  |  | |
| 361 | CA\_Fstart | | |  |  | | |  |  | |
| 362 | CA\_Fstop | | |  |  | | |  |  | |
| 363 | 加州CA\_VW使能  California CA\_VW enable | | |  |  | | |  |  | |
| 364 | CA\_Vstart | | |  |  | | |  |  | |
| 365 | CA\_Vstop | | |  |  | | |  |  | |
| 366 | 正常上升斜率  Normal upward slope | | | R/W | [1 100] | | | 1% |  | |
| 367 | 软启动上升速率  Soft start rise rate | | | R/W | [1 100] | | | 1% | 默认100%  default 100% | |
| 368 |  | | |  |  | | |  |  | |
| 369 |  | | |  |  | | |  |  | |
| 370 |  | | |  |  | | |  |  | |
|  |  | | |  |  | | |  |  | |
|  |  | | |  |  | | |  |  | |
| 390 | Solar1做Wind输入使能  Solar1 do Wind Input can make | | | R/W | [0,1] | | |  | 0: disable 1: enable | |
| 391 | Solar2做Wind输入使能  Solar2 do Wind Input can make | | | R/W | [0,1] | | |  | 0: disable 1: enable | |
| 392 | * Voltage 1 | | | R/W | [500,5000] | | | 0.1V |  | |
| 393 | * Voltage 2 | | | R/W |  | | | 0.1V |  | |
| 394 | Voltage 3 | | | R/W |  | | | 0.1V |  | |
| 395 | Voltage 4 | | | R/W |  | | | 0.1V |  | |
| 396 | Voltage 5 | | | R/W |  | | | 0.1V |  | |
| 397 | Voltage 6 | | | R/W |  | | | 0.1V |  | |
| 398 | Voltage 7 | | | R/W |  | | | 0.1V |  | |
| 399 | Voltage 8 | | | R/W |  | | | 0.1V |  | |
| 400 | Voltage 9 | | | R/W |  | | | 0.1V |  | |
| 401 | Voltage 10 | | | R/W |  | | | 0.1V |  | |
| 402 | Voltage 11 | | | R/W |  | | | 0.1V |  | |
| 403 | Voltage 12 | | | R/W |  | | | 0.1V |  | |
| 404 | * Current 1 | | | R/W | [0-200] | | | 0.1A |  | |
| 405 | Current 2 | | | R/W |  | | | 0.1A |  | |
| 406 | Current 3 | | | R/W |  | | | 0.1A |  | |
| 407 | Current 4 | | | R/W |  | | | 0.1A |  | |
| 408 | Current 5 | | | R/W |  | | | 0.1A |  | |
| 409 | Current 6 | | | R/W |  | | | 0.1A |  | |
| 410 | Current 7 | | | R/W |  | | | 0.1A |  | |
| 411 | Current 8 | | | R/W |  | | | 0.1A |  | |
| 412 | Current 9 | | | R/W |  | | | 0.1A |  | |
| 413 | Current 10 | | | R/W |  | | | 0.1A |  | |
| 414 | Current 11 | | | R/W |  | | | 0.1A |  | |
| 415 | Current 12 | | | R/W |  | | | 0.1A |  | |
| 416 |  | | |  |  | | |  |  | |
| 417 | 并联寄存器1 | | | R/W | -- | | | -- | Bit0 1:Parallel Enable  0: Parallel Disable  Bit1 1:Master 0:Slave  Bit2-7 Void  Bit8-9 Phase(00:A,01:B,10:C,11:void)  Bit10-15 Modbus SN(0-63) | |
| 418 | 并联寄存器2 | | | R | -- | | | -- | Bit0-4 A Phase inverter Num  Bit5-9 B Phase inverter Num  Bit10-14 C Phase inverter Num  Bit15 Void | |
| 419 |  | | |  |  | | |  |  | |
| 420 |  | | |  |  | | |  |  | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Addr. | 寄存器含义 | | | R/W | Range | Unit | note |
| For Hybird inverter Real-time data 3  Fifteen Battery packs ID num.(this is only for TIAN-POWER) | | | | | | | |
|  | 电池ID | | |  |  |  |  |
|  | 圣阳电池 | |  |  |  |  |  |
| 500 | 1号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 1号2字节 | | |
| 501 | 1号3字节 | | | R |  |  |  |
| 1号4字节 | | |
| 502 | 1号5字节 | | |  |  |  |  |
| 1号6字节 | | |
| 503 | 1号7字节 | | |  |  |  |  |
| 1号8字节 | | |
| 504 | 1号9字节 | | |  |  |  |  |
| 1号10字节 | | |
| 505 | 1号11字节 | | |  |  |  |  |
| 1号12字节 | | |
| 506 | 2号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 2号2字节 | | |
| 507 | 2号3字节 | | | R |  |  |  |
| 2号4字节 | | |
| 508 | 2号5字节 | | |  |  |  |  |
| 2号6字节 | | |
| 509 | 2号7字节 | | |  |  |  |  |
| 2号8字节 | | |
| 510 | 2号9字节 | | |  |  |  |  |
| 2号10字节 | | |
| 511 | 2号11字节 | | |  |  |  |  |
| 2号12字节 | | |
| 512 | 3号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 3号2字节 | | |
| 513 | 3号3字节 | | | R |  |  |  |
| 3号4字节 | | |
| 514 | 3号5字节 | | |  |  |  |  |
| 3号6字节 | | |
| 515 | 3号7字节 | | |  |  |  |  |
| 3号8字节 | | |
| 516 | 3号9字节 | | |  |  |  |  |
| 3号10字节 | | |
| 517 | 3号11字节 | | |  |  |  |  |
| 3号12字节 | | |
| 518 | 4号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 4号2字节 | | |
| 519 | 4号3字节 | | | R |  |  |  |
| 4号4字节 | | |
| 520 | 4号5字节 | | |  |  |  |  |
| 4号6字节 | | |
| 521 | 4号7字节 | | |  |  |  |  |
| 4号8字节 | | |
| 522 | 4号9字节 | | |  |  |  |  |
| 4号10字节 | | |
| 523 | 4号11字节 | | |  |  |  |  |
| 4号12字节 | | |
| 524 | 5号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 5号2字节 | | |
| 525 | 5号3字节 | | | R |  |  |  |
| 5号4字节 | | |
| 526 | 5号5字节 | | |  |  |  |  |
| 5号6字节 | | |
| 527 | 5号7字节 | | |  |  |  |  |
| 5号8字节 | | |
| 528 | 5号9字节 | | |  |  |  |  |
| 5号10字节 | | |
| 529 | 5号11字节 | | |  |  |  |  |
| 5号12字节 | | |
| 530 | 6号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 6号2字节 | | |
| 531 | 6号3字节 | | | R |  |  |  |
| 6号4字节 | | |
| 532 | 6号5字节 | | |  |  |  |  |
| 6号6字节 | | |
| 533 | 6号7字节 | | |  |  |  |  |
| 6号8字节 | | |
| 534 | 6号9字节 | | |  |  |  |  |
| 6号10字节 | | |
| 535 | 6号11字节 | | |  |  |  |  |
| 6号12字节 | | |
| 536 | 7号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 7号2字节 | | |
| 537 | 7号3字节 | | | R |  |  |  |
| 7号4字节 | | |
| 538 | 7号5字节 | | |  |  |  |  |
| 7号6字节 | | |
| 539 | 7号7字节 | | |  |  |  |  |
| 7号8字节 | | |
| 540 | 7号9字节 | | |  |  |  |  |
| 7号10字节 | | |
| 541 | 7号11字节 | | |  |  |  |  |
| 7号12字节 | | |
| 542 | 8号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 8号2字节 | | |
| 543 | 8号3字节 | | | R |  |  |  |
| 8号4字节 | | |
| 544 | 8号5字节 | | |  |  |  |  |
| 8号6字节 | | |
| 545 | 8号7字节 | | |  |  |  |  |
| 8号8字节 | | |
| 546 | 8号9字节 | | |  |  |  |  |
| 8号10字节 | | |
| 547 | 8号11字节 | | |  |  |  |  |
| 8号12字节 | | |
| 548 | 9号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 9号2字节 | | |
| 549 | 9号3字节 | | | R |  |  |  |
| 9号4字节 | | |
| 550 | 9号5字节 | | |  |  |  |  |
| 9号6字节 | | |
| 551 | 9号7字节 | | |  |  |  |  |
| 9号8字节 | | |
| 552 | 9号9字节 | | |  |  |  |  |
| 9号10字节 | | |
| 553 | 9号11字节 | | |  |  |  |  |
| 9号12字节 | | |
| 554 | 10号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 10号2字节 | | |
| 555 | 10号3字节 | | | R |  |  |  |
| 10号4字节 | | |
| 556 | 10号5字节 | | |  |  |  |  |
| 10号6字节 | | |
| 557 | 10号7字节 | | |  |  |  |  |
| 10号8字节 | | |
| 558 | 10号9字节 | | |  |  |  |  |
| 10号10字节 | | |
| 559 | 10号11字节 | | |  |  |  |  |
| 10号12字节 | | |
| 560 | 11号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 11号2字节 | | |
| 561 | 11号3字节 | | | R |  |  |  |
| 11号4字节 | | |
| 562 | 11号5字节 | | |  |  |  |  |
| 11号6字节 | | |
| 563 | 11号7字节 | | |  |  |  |  |
| 11号8字节 | | |
| 564 | 11号9字节 | | |  |  |  |  |
| 11号10字节 | | |
| 565 | 11号11字节 | | |  |  |  |  |
| 11号12字节 | | |
| 566 | 12号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 12号2字节 | | |
| 567 | 12号3字节 | | | R |  |  |  |
| 12号4字节 | | |
| 568 | 12号5字节 | | |  |  |  |  |
| 12号6字节 | | |
| 569 | 12号7字节 | | |  |  |  |  |
| 12号8字节 | | |
| 570 | 12号9字节 | | |  |  |  |  |
| 12号10字节 | | |
| 571 | 12号11字节 | | |  |  |  |  |
| 12号12字节 | | |
| 572 | 13号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 13号2字节 | | |
| 573 | 13号3字节 | | | R |  |  |  |
| 13号4字节 | | |
| 574 | 13号5字节 | | |  |  |  |  |
| 13号6字节 | | |
| 575 | 13号7字节 | | |  |  |  |  |
| 13号8字节 | | |
| 576 | 13号9字节 | | |  |  |  |  |
| 13号10字节 | | |
| 577 | 13号11字节 | | |  |  |  |  |
| 13号12字节 | | |
| 578 | 14号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 14号2字节 | | |
| 579 | 14号3字节 | | | R |  |  |  |
| 14号4字节 | | |
| 580 | 14号5字节 | | |  |  |  |  |
| 14号6字节 | | |
| 581 | 14号7字节 | | |  |  |  |  |
| 14号8字节 | | |
| 582 | 14号9字节 | | |  |  |  |  |
| 14号10字节 | | |
| 583 | 14号11字节 | | |  |  |  |  |
| 14号12字节 | | |
| 584 | 15号1字节 | | | R | ‘0’- ‘9’ ‘A’- ‘Z’ |  | ASCII字符 |
| 15号2字节 | | |
| 585 | 15号3字节 | | | R |  |  |  |
| 15号4字节 | | |
| 586 | 15号5字节 | | |  |  |  |  |
| 15号6字节 | | |
| 587 | 15号7字节 | | |  |  |  |  |
| 15号8字节 | | |
| 588 | 15号9字节 | | |  |  |  |  |
| 15号10字节 | | |
| 589 | 15号11字节 | | |  |  |  |  |
| 15号12字节 | | |
|  |  | | |  |  |  |  |
| 600 | PACK1 | Module Voltage | |  |  |  |  |
| 601 | Module Current | |  |  |  |  |
| 602 | Temperater-AVE | |  |  |  |  |
| 603 | SOC | |  |  |  |  |
| 604 | Remain Capacity | |  |  |  |  |
| 605 | Total Capacity | |  |  |  |  |
| 606 | Charge Voltage | |  |  |  |  |
| 607 | Charge Current | |  |  |  |  |
| 608 | Discharge Current | |  |  |  |  |
| 609 | Max Cell V | |  |  |  |  |
| 610 | Min Cell V | |  |  |  |  |
| 611 | Cycle number | |  |  |  |  |
| 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 | PACK11 | Module Voltage | |  |  |  |  |
| 741 | Module Current | |  |  |  |  |
| 742 | Temperater-AVE | |  |  |  |  |
| 743 | SOC | |  |  |  |  |
| 744 | Remain Capacity | |  |  |  |  |
| 745 | Total Capacity | |  |  |  |  |
| 746 | Charge Voltage | |  |  |  |  |
| 747 | Charge Current | |  |  |  |  |
| 748 | Discharge Current | |  |  |  |  |
| 749 | Max Cell V | |  |  |  |  |
| 750 | Min Cell V | |  |  |  |  |
| 751 | Cycle number | |  |  |  |  |
| 752 | Warming | |  |  |  |  |
| 753 | Fault | |  |  |  |  |
| 754 | PACK12 | Module Voltage | |  |  |  |  |
| 755 | Module Current | |  |  |  |  |
| 756 | Temperater-AVE | |  |  |  |  |
| 757 | SOC | |  |  |  |  |
| 758 | 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 | PACK14 | Module Voltage | |  |  |  |  |
| 783 | Module Current | |  |  |  |  |
| 784 | Temperater-AVE | |  |  |  |  |
| 785 | 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 | |  |  |  |  |