## MODBUS-RTU协议Protocol

## 一、通讯协议

1.communication protocol  
1、引用标准：通用MODBUS RTU协议；底层协议：RS-485；物理接口：串行通讯口采用两线RS-485，传输方式为异步、半双工方式，先传输最低有效位。

1.1 adopted standard：

universal MODBUS RTU protocol；bottom protocol;RS-485；physical port：serial串communication port use double RS-485，transmission mode is is asynchronous and semi-duplex type,first transfer valid bit minimum.

2、数据传输速率：出厂默认为9600bps；（可多选，4800,9200,19200,38400）

1.2 data transmitting velocity：

factory defaults to 9600bps；（You may choose more than one options，4800,9200,19200,38400）

数据位：8

奇偶校验：无

停止位：1

数据流控制：无

硬件接口线序：

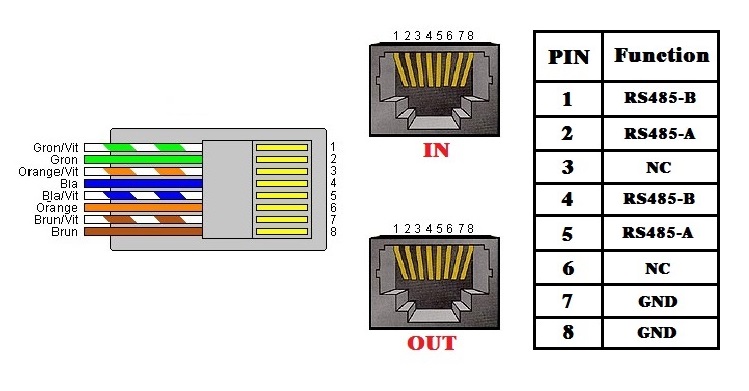
data bits：8

odd-even check：no

stop bit：1

data flow control：no

Hardware interface line sequence：



**二、功能码**

**2.Function code**

|  |  |
| --- | --- |
| **功能码Function code** | **名称Name** |
| 0x03 | 查询query |
| 0x10 | 设置Set up |

**3. 查询格式Query format**

主机发送，括号内为字节数：

从机地址（1），功能码（1），寄存器首地址（2），数据长度（2），CRC码（2）

从机应答，括号内为字节数：

从机地址（1），功能码（1），数据字节数（1），数据（N），CRC码（2）

Host sending ,The numbers in brackets are characters:

Slave address（1）,Function code（1），register address（2），Data length（2），CRC code（2）

Slave response, The numbers in brackets are characters:

Slave address（1），Function code（1），Data bytes（1），Data（N），CRC code（2）

**4. 寄存器列表Register list**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **项目Item** | **MODBUS 地址Address** | | **单位Unit** | **属性Attribute** | **参数转换公式Parameter conversion formula** | | **返回字节数Number of returns bytes** |
| 1 | Total voltage L1 | | 0x0000 | V | 只读Read only | | =register | 2 |
| 2 | Total voltage L2 | | 0x0001 | V | 只读Read only | | =register | 2 |
| 3 | Total voltage L3 | | 0x0002 | V | 只读Read only | | =register | 2 |
| 4 | Total current L1 | | 0x0003 | A | 只读Read only | | =register/10 | 2 |
| 5 | Total current L2 | | 0x0004 | A | 只读Read only | | =register/10 | 2 |
| 6 | Total current L3 | | 0x0005 | A | 只读Read only | | =register/10 | 2 |
| 7 | Total power L1 | | 0x0006 | KW | 只读Read only | | =register/10 | 2 |
| 8 | Total power L2 | | 0x0007 | KW | 只读Read only | | =register/10 | 2 |
| 9 | Total power L3 | | 0x0008 | KW | 只读Read only | | =register/10 | 2 |
| 10 | power factor L1 | | 0x0009 |  | 只读Read only | | =register/100 | 2 |
| 11 | power factor L2 | | 0x000A |  | 只读Read only | | =register/100 | 2 |
| 12 | power factor L3 | | 0x000B |  | 只读Read only | | =register/100 | 2 |
| 13 | Total electric energy L1 | | 0x000C-0x000D |  | 只读Read only | | =register/10 | 2 |
| 14 | Total electric energy L2 | | 0x000E-0x000F |  | 只读Read only | | =register/10 | 2 |
| 15 | Total electric energy L3 | | 0x0010-0x0011 |  | 只读Read only | | =register/10 | 2 |
| 16 | Total voltage L1 lower limit | | 0x0012 | V | 读/写Read / write | | =register | 2 |
| 17 | Total voltage L1 upper limit | | 0x0013 | V | 读/写Read / write | | =register | 2 |
| 18 | Total voltage L2 lower limit | | 0x0014 | V | 读/写Read / write | | =register | 2 |
| 19 | Total voltage L2 upper limit | | 0x0015 | V | 读/写Read / write | | =register | 2 |
| 20 | Total voltage L3 lower limit | | 0x0016 | V | 读/写Read / write | | =register | 2 |
| 21 | Total voltage L3 upper limit | | 0x0017 | V | 读/写Read / write | | =register | 2 |
| 22 | Total current L1 lower limit | | 0x0018 | A | 读/写Read / write | | =register/10 | 2 |
| 23 | Total current L1 upper limit | | 0x0019 | A | 读/写Read / write | | =register/10 | 2 |
| 24 | Total current L2 lower limit | | 0x001A | A | 读/写Read / write | | =register/10 | 2 |
| 25 | Total current L2 upper limit | | 0x001B | A | 读/写Read / write | | =register/10 | 2 |
| 26 | Total current L3 lower limit | | 0x001C | A | 读/写Read / write | | =register/10 | 2 |
| 27 | Total current L3 upper limit | | 0x001D | A | 读/写Read / write | | =register/10 | 2 |
| 28 | temperature 1 | | 0x001E | °c | 读/写Read / write | | =register/10 | 2 |
| 29 | temperature 2 | | 0x001F | °c | 读/写Read / write | | =register/10 | 2 |
| 30 | temperature 3 | | 0x0020 | °c | 读/写Read / write | | =register/10 | 2 |
| 31 | temperature 4 | | 0x0021 | °c | 读/写Read / write | | =register/10 | 2 |
| 32 | humidity 1 | | 0x0022 | % | 读/写Read / write | | =register/10 | 2 |
| 33 | humidity 2 | | 0x0023 | % | 读/写Read / write | | =register/10 | 2 |
| 34 | humidity 3 | | 0x0024 | % | 读/写Read / write | | =register/10 | 2 |
| 35 | humidity 4 | | 0x0025 | % | 读/写Read / write | | =register/10 | 2 |
| 36 | Entrance guard 1 | | 0x0026 |  | 读/写Read / write | | =register  1=开启open  2=关闭Close | 2 |
| 37 | Entrance guard 2 | | 0x0027 |  | 读/写Read / write | | =register  1=开启open  2=关闭Close | 2 |
| 38 | Smog | | 0x0028 |  | 读/写Read / write | | =register  1=开启open  2=关闭Close | 2 |
| 39 | Water immersion | | 0x0029 |  | 读/写Read / write | | =register  1=开启open  2=关闭Close | 2 |
| 40 | temperature 1 lower limit | | 0x002A | °c | 读/写Read / write | | =register | 2 |
| 41 | temperature 1 upper limit | | 0x002B | °c | 读/写Read / write | | =register | 2 |
| 42 | temperature 2 lower limit | | 0x002C | °c | 读/写Read / write | | =register | 2 |
| 43 | temperature 2 upper limit | | 0x002D | °c | 读/写Read / write | | =register | 2 |
| 44 | temperature 3 lower limit | | 0x002E | °c | 读/写Read / write | | =register | 2 |
| 45 | temperature 3 upper limit | | 0x002F | °c | 读/写Read / write | | =register | 2 |
| 46 | temperature 4 lower limit | | 0x0030 | °c | 读/写Read / write | | =register | 2 |
| 47 | temperature 4 upper limit | | 0x0031 | °c | 读/写Read / write | | =register | 2 |
| 48 | humidity 1 lower limit | | 0x0032 | % | 读/写Read / write | | =register | 2 |
| 49 | humidity 1 upper limit | | 0x0033 | % | 读/写Read / write | | =register | 2 |
| 50 | humidity 2 lower limit | | 0x0034 | % | 读/写Read / write | | =register | 2 |
| 51 | humidity 2 upper limit | | 0x0035 | % | 读/写Read / write | | =register | 2 |
| 52 | humidity 3 lower limit | | 0x0036 | % | 读/写Read / write | | =register | 2 |
| 53 | humidity 3 upper limit | | 0x0037 | % | 读/写Read / write | | =register | 2 |
| 54 | humidity 4 lower limit | | 0x0038 | % | 读/写Read / write | | =register | 2 |
| 55 | humidity 4 upper limit | | 0x0039 | % | 读/写Read / write | | =register | 2 |
| 56 | Output 1 current | | 0x003A | A | 只读Read only | | =register/10 | 2 |
| 57 | Output 2 current | | 0x003B | A | 只读Read only | | =register/10 | 2 |
| 58 | Output 3 current | | 0x003C | A | 只读Read only | | =register/10 | 2 |
| 59 | Output 4 current | | 0x003D | A | 只读Read only | | =register/10 | 2 |
| 60 | Output 5 current | | 0x003E | A | 只读Read only | | =register/10 | 2 |
| 61 | Output 6 current | | 0x003F | A | 只读Read only | | =register/10 | 2 |
| 62 | Output 7 current | | 0x0040 | A | 只读Read only | | =register/10 | 2 |
| 63 | Output 8 current | | 0x0041 | A | 只读Read only | | =register/10 | 2 |
| 64 | Output 9 current | | 0x0042 | A | 只读Read only | | =register/10 | 2 |
| 65 | Output 10 current | | 0x0043 | A | 只读Read only | | =register/10 | 2 |
| 66 | Output 11 current | | 0x0044 | A | 只读Read only | | =register/10 | 2 |
| 67 | Output 12 current | | 0x0045 | A | 只读Read only | | =register/10 | 2 |
| 68 | Output 13 current | | 0x0046 | A | 只读Read only | | =register/10 | 2 |
| 69 | Output 14 current | | 0x0047 | A | 只读Read only | | =register/10 | 2 |
| 70 | Output 15 current | | 0x0048 | A | 只读Read only | | =register/10 | 2 |
| 71 | Output 16 current | | 0x0049 | A | 只读Read only | | =register/10 | 2 |
| 72 | Output 17 current | | 0x004A | A | 只读Read only | | =register/10 | 2 |
| 73 | Output 18 current | | 0x004B | A | 只读Read only | | =register/10 | 2 |
| 74 | Output 19 current | | 0x004C | A | 只读Read only | | =register/10 | 2 |
| 75 | Output 20 current | | 0x004D | A | 只读Read only | | =register/10 | 2 |
| 76 | Output 21 current | | 0x004E | A | 只读Read only | | =register/10 | 2 |
| 77 | Output 22 current | | 0x004F | A | 只读Read only | | =register/10 | 2 |
| 78 | Output 23 current | | 0x0050 | A | 只读Read only | | =register/10 | 2 |
| 79 | Output 24 current | | 0x0051 | A | 只读Read only | | =register/10 | 2 |
| 80 | Output 1 current lower limit | | 0x0052 | A | 读/写Read / write | | =register | 2 |
| 81 | Output 1 current upper limit | | 0x0053 | A | 读/写Read / write | | =register | 2 |
| 82 | Output 2 current lower limit | | 0x0054 | A | 读/写Read / write | | =register | 2 |
| 83 | Output 2 current upper limit | | 0x0055 | A | 读/写Read / write | | =register | 2 |
| 84 | Output 3 current lower limit | | 0x0056 | A | 读/写Read / write | | =register | 2 |
| 85 | Output 3 current upper limit | | 0x0057 | A | 读/写Read / write | | =register | 2 |
| 86 | Output 4 current lower limit | | 0x0058 | A | 读/写Read / write | | =register | 2 |
| 87 | Output 4 current upper limit | | 0x0059 | A | 读/写Read / write | | =register | 2 |
| 88 | Output 5 current lower limit | | 0x005A | A | 读/写Read / write | | =register | 2 |
| 89 | Output 5 current upper limit | | 0x005B | A | 读/写Read / write | | =register | 2 |
| 90 | Output 6 current lower limit | | 0x005C | A | 读/写Read / write | | =register | 2 |
| 91 | Output 6 current upper limit | | 0x005D | A | 读/写Read / write | | =register | 2 |
| 92 | Output 7 current lower limit | | 0x005E | A | 读/写Read / write | | =register | 2 |
| 93 | Output 7 current upper limit | | 0x005F | A | 读/写Read / write | | =register | 2 |
| 94 | Output 8 current lower limit | | 0x0060 | A | 读/写Read / write | | =register | 2 |
| 95 | Output 8 current upper limit | | 0x0061 | A | 读/写Read / write | | =register | 2 |
| 96 | Output 9 current lower limit | | 0x0062 | A | 读/写Read / write | | =register | 2 |
| 97 | Output 9 current upper limit | | 0x0063 | A | 读/写Read / write | | =register | 2 |
| 98 | Output 10 current lower limit | | 0x0064 | A | 读/写Read / write | | =register | 2 |
| 99 | Output 10 current upper limit | | 0x0065 | A | 读/写Read / write | | =register | 2 |
| 100 | Output 11 current lower limit | | 0x0066 | A | 读/写Read / write | | =register | 2 |
| 101 | Output 11 current upper limit | | 0x0067 | A | 读/写Read / write | | =register | 2 |
| 102 | Output 12 current lower limit | | 0x0068 | A | 读/写Read / write | | =register | 2 |
| 103 | Output 12 current upper limit | | 0x0069 | A | 读/写Read / write | | =register | 2 |
| 104 | Output 13 current lower limit | | 0x006A | A | 读/写Read / write | | =register | 2 |
| 105 | Output 13 current upper limit | | 0x006B | A | 读/写Read / write | | =register | 2 |
| 106 | Output 14 current lower limit | | 0x006C | A | 读/写Read / write | | =register | 2 |
| 107 | Output 14 current upper limit | | 0x006D | A | 读/写Read / write | | =register | 2 |
| 108 | Output 15 current lower limit | | 0x006E | A | 读/写Read / write | | =register | 2 |
| 109 | Output 15 current upper limit | | 0x006F | A | 读/写Read / write | | =register | 2 |
| 110 | Output 16 current lower limit | | 0x0070 | A | 读/写Read / write | | =register | 2 |
| 111 | Output 16 current upper limit | | 0x0071 | A | 读/写Read / write | | =register | 2 |
| 112 | Output 17 current lower limit | | 0x0072 | A | 读/写Read / write | | =register | 2 |
| 113 | Output 17 current upper limit | | 0x0073 | A | 读/写Read / write | | =register | 2 |
| 114 | Output 18 current lower limit | | 0x0074 | A | 读/写Read / write | | =register | 2 |
| 115 | Output 18 current upper limit | | 0x0075 | A | 读/写Read / write | | =register | 2 |
| 116 | Output 19 current lower limit | | 0x0076 | A | 读/写Read / write | | =register | 2 |
| 117 | Output 19 current upper limit | | 0x0077 | A | 读/写Read / write | | =register | 2 |
| 118 | Output 20 current lower limit | | 0x0078 | A | 读/写Read / write | | =register | 2 |
| 119 | Output 20 current upper limit | | 0x0079 | A | 读/写Read / write | | =register | 2 |
| 120 | Output 21 current lower limit | | 0x007A | A | 读/写Read / write | | =register | 2 |
| 121 | Output 21 current upper limit | | 0x007B | A | 读/写Read / write | | =register | 2 |
| 122 | Output 22 current lower limit | | 0x007C | A | 读/写Read / write | | =register | 2 |
| 123 | Output 22 current upper limit | | 0x007D | A | 读/写Read / write | | =register | 2 |
| 124 | Output 23 current lower limit | | 0x007E | A | 读/写Read / write | | =register | 2 |
| 125 | Output 23 current upper limit | | 0x007F | A | 读/写Read / write | | =register | 2 |
| 126 | Output 24 current lower limit | | 0x0080 | A | 读/写Read / write | | =register | 2 |
| 127 | Output 24 current upper limit | | 0x0081 | A | 读/写Read / write | | =register | 2 |
| 128 | Output 1 electric energy | | 0x0082-0x0083 | KWh | 只读Read only | | =register/10 | 2 |
| 129 | Output 2 electric energy | | 0x0084-0x0085 | KWh | 只读Read only | | =register/10 | 2 |
| 130 | Output 3 electric energy | | 0x0086-0x0087 | KWh | 只读Read only | | =register/10 | 2 |
| 131 | Output 4 electric energy | | 0x0088-0x0089 | KWh | 只读Read only | | =register/10 | 2 |
| 132 | Output 5 electric energy | | 0x008A-0x008B | KWh | 只读Read only | | =register/10 | 2 |
| 133 | Output 6 electric energy | | 0x008C-0x008D | KWh | 只读Read only | | =register/10 | 2 |
| 134 | Output 7 electric energy | | 0x008E-0x008F | KWh | 只读Read only | | =register/10 | 2 |
| 135 | Output 8 electric energy | | 0x0090-0x0091 | KWh | 只读Read only | | =register/10 | 2 |
| 136 | Output 9 electric energy | | 0x0092-0x0093 | KWh | 只读Read only | | =register/10 | 2 |
| 137 | Output 10 electric energy | | 0x0094-0x0095 | KWh | 只读Read only | | =register/10 | 2 |
| 138 | Output 11 electric energy | | 0x0096-0x0097 | KWh | 只读Read only | | =register/10 | 2 |
| 139 | Output 12 electric energy | | 0x0098-0x0099 | KWh | 只读Read only | | =register/10 | 2 |
| 140 | Output 13 electric energy | | 0x009A-0x009B | KWh | 只读Read only | | =register/10 | 2 |
| 141 | Output 14 electric energy | | 0x009C-0x009D | KWh | 只读Read only | | =register/10 | 2 |
| 142 | Output 15 electric energy | | 0x009E-0x009F | KWh | 只读Read only | | =register/10 | 2 |
| 143 | Output 16 electric energy | | 0x00A0-0x00A1 | KWh | 只读Read only | | =register/10 | 2 |
| 144 | Output 17 electric energy | | 0x00A2-0x00A3 | KWh | 只读Read only | | =register/10 | 2 |
| 145 | Output 18 electric energy | | 0x00A4-0x00A5 | KWh | 只读Read only | | =register/10 | 2 |
| 146 | Output 19 electric energy | | 0x00A6-0x00A7 | KWh | 只读Read only | | =register/10 | 2 |
| 147 | Output 20 electric energy | | 0x00A8-0x00A9 | KWh | 只读Read only | | =register/10 | 2 |
| 148 | Output 21 electric energy | | 0x00AA-0x00AB | KWh | 只读Read only | | =register/10 | 2 |
| 149 | Output 22 electric energy | | 0x00AC-0x00AD | KWh | 只读Read only | | =register/10 | 2 |
| 150 | Output 23 electric energy | | 0x00AE-0x00AF | KWh | 只读Read only | | =register/10 | 2 |
| 151 | Output 24 electric energy | | 0x00B0-0x00B1 | KWh | 只读Read only | | =register/10 | 2 |
| 152 | Output 1 status | | 0x00B2 |  | 读/写Read / write | | 1= Close  2= open | 2 |
| 153 | Output 2 status | | 0x00B3 |  | 读/写Read / write | | 2 |
| 154 | Output 3 status | | 0x00B4 |  | 读/写Read / write | | 2 |
| 155 | Output 4 status | | 0x00B5 |  | 读/写Read / write | | 2 |
| 156 | Output 5 status | | 0x00B6 |  | 读/写Read / write | | 2 |
| 157 | Output 6 status | | 0x00B7 |  | 读/写Read / write | | 2 |
| 158 | Output 7 status | | 0x00B8 |  | 读/写Read / write | | 2 |
| 159 | Output 8 status | | 0x00B9 |  | 读/写Read / write | | 2 |
| 160 | Output 9 status | | 0x00BA |  | 读/写Read / write | | 2 |
| 161 | Output 10 status | | 0x00BB |  | 读/写Read / write | | 2 |
| 162 | Output 11 status | | 0x00BC |  | 读/写Read / write | | 2 |
| 163 | Output 12 status | | 0x00BD |  | 读/写Read / write | | 2 |
| 164 | Output 13 status | | 0x00BE |  | 读/写Read / write | | 2 |
| 165 | Output 14 status | | 0x00BF |  | 读/写Read / write | | 2 |
| 166 | Output 15 status | | 0x00C0 |  | 读/写Read / write | | 2 |
| 167 | Output 16 status | | 0x00C1 |  | 读/写Read / write | | 2 |
| 168 | Output 17 status | | 0x00C2 |  | 读/写Read / write | | 2 |
| 169 | Output 18 status | | 0x00C3 |  | 读/写Read / write | | 2 |
| 170 | Output 19 status | | 0x00C4 |  | 读/写Read / write | | 2 |
| 171 | Output 20 status | | 0x00C5 |  | 读/写Read / write | | 2 |
| 172 | Output 21 status | | 0x00C6 |  | 读/写Read / write | | 2 |
| 173 | Output 22 status | | 0x00C7 |  | 读/写Read / write | | 2 |
| 174 | Output 23 status | | 0x00C8 |  | 读/写Read / write | | 2 |
| 175 | Output 24 status | | 0x00C9 |  | 读/写Read / write | | 2 |
|  |  | |  |  |  | |  |  |

**五、设置寄存器**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **编号No.** | **项目Item** | **MODBUS地址 address** | **单位Unit** | **属性****Attribute** | **参数转换公式Parameter conversion formula** | **说明Marks** |
| 1 | 地址Address | 0x1000 |  | 写write | =register | 1-254 |
| 2 | 总电压L1下限Total voltage L1 lower limit | 0x1001 | V | 写write | =register | 170-276 |
| 3 | 总电压L1上限Total voltage L1 upper limit | 0x1002 | V | 写write | =register | 170-267 |
| 4 | 总电压L2下限Total voltage L2 lower limit | 0x1003 | V | 写write | =register | 170-276 |
| 5 | 总电压L2上限Total voltage L2 upper limit | 0x1004 | V | 写write | =register | 170-267 |
| 6 | 总电压L3下限Total voltage L3 lower limit | 0x1005 | V | 写write | =register | 170-276 |
| 7 | 总电压L3上限Total voltage L3 upper limit | 0x1006 | V | 写write | =register | 170-267 |
| 8 | 总电流L1下限Total current L1 lower limit | 0x1007 | A | 写write |  |  |
| 9 | 总电流L1上限Total current L1 lower limit | 0x1008 | A | 写write |  |  |
| 10 | 总电流L2下限Total current L2 lower limit | 0x1009 | A | 写write |  |  |
| 11 | 总电流L2上限Total current L2 lower limit | 0x100A | A | 写write |  |  |
| 12 | 总电流L3下限Total current L3 lower limit | 0x100B | A | 写write |  |  |
| 13 | 总电流L3上限Total current L3 upper limit | 0x100C | A | 写write |  |  |
| 14 | 温度1下限temperature 1 lower limit | 0x100D | °c | 写write |  |  |
| 15 | 温度1上限temperature 1 upper limit | 0x100E | °c | 写write |  |  |
| 16 | 温度2下限temperature 2 lower limit | 0x100F | °c | 写write |  |  |
| 17 | 温度2上限temperature 2 upper limit | 0x1010 | °c | 写write |  |  |
| 18 | 温度3下限temperature 3 lower limit | 0x1011 | °c | 写write |  |  |
| 19 | 温度3上限temperature 3 upper limit | 0x1012 | °c | 写write |  |  |
| 20 | 温度4下限temperature 4 lower limit | 0x1013 | °c | 写write |  |  |
| 21 | 温度4上限temperature 4 upper limit | 0x1014 | °c | 写write |  |  |
| 22 | 湿度1下限humidity 1 lower limit | 0x1015 | % | 写write |  |  |
| 23 | 湿度1上限humidity 1 upper limit | 0x1016 | % | 写write |  |  |
| 24 | 湿度2下限humidity 2 lower limit | 0x1017 | % | 写write |  |  |
| 25 | 湿度2上限humidity 2 upper limit | 0x1018 | % | 写write |  |  |
| 26 | 湿度3下限humidity 3 lower limit | 0x1019 | % | 写write |  |  |
| 27 | 湿度3上限humidity 3 upper limit | 0x101A | % | 写write |  |  |
| 28 | 湿度4下限humidity 4 lower limit | 0x101B | % | 写write |  |  |
| 29 | 湿度4上限humidity 4 upper limit | 0x101C | % | 写write |  |  |
| 30 | 输出单元1下限Output 1 lower limit | 0x101D | A | 写write |  |  |
| 31 | 输出单元1上限Output 1 upper limit | 0x101E | A | 写write |  |  |
| 32 | 输出单元2下限Output 2 lower limit | 0x101F | A | 写write |  |  |
| 33 | 输出单元2上限Output 2 upper limit | 0x1020 | A | 写write |  |  |
| 34 | 输出单元3下限Output 3 lower limit | 0x1021 | A | 写write |  |  |
| 35 | 输出单元3上限Output 3 upper limit | 0x1022 | A | 写write |  |  |
| 36 | 输出单元4下限Output 4 lower limit | 0x1023 | A | 写write |  |  |
| 37 | 输出单元4上限Output 4 upper limit | 0x1024 | A | 写write |  |  |
| 38 | 输出单元5下限Output 5 lower limit | 0x1025 | A | 写write |  |  |
| 39 | 输出单元5上限Output 5 upper limit | 0x1026 | A | 写write |  |  |
| 40 | 输出单元6下限Output 6 lower limit | 0x1027 | A | 写write |  |  |
| 41 | 输出单元6上限Output 6 upper limit | 0x1028 | A | 写write |  |  |
| 42 | 输出单元7下限Output 7 lower limit | 0x1029 | A | 写write |  |  |
| 43 | 输出单元7上限Output 7 upper limit | 0x102A | A | 写write |  |  |
| 44 | 输出单元8下限Output 8 lower limit | 0x102B | A | 写write |  |  |
| 45 | 输出单元8上限Output 8 upper limit | 0x102C | A | 写write |  |  |
| 46 | 输出单元9下限Output 9 lower limit | 0x102D | A | 写write |  |  |
| 47 | 输出单元9上限Output 9 upper limit | 0x102E | A | 写write |  |  |
| 48 | 输出单元10下限Output 10 lower limit | 0x102F | A | 写write |  |  |
| 49 | 输出单元10上限Output 10 upper limit | 0x1030 | A | 写write |  |  |
| 50 | 输出单元11下限Output 11 lower limit | 0x1031 | A | 写write |  |  |
| 51 | 输出单元11上限Output 11 upper limit | 0x1032 | A | 写write |  |  |
| 52 | 输出单元12下限Output 12 lower limit | 0x1033 | A | 写write |  |  |
| 53 | 输出单元12上限Output 12 upper limit | 0x1034 | A | 写write |  |  |
| 54 | 输出单元13下限Output 13 lower limit | 0x1035 | A | 写write |  |  |
| 55 | 输出单元13上限Output 13 upper limit | 0x1036 | A | 写write |  |  |
| 56 | 输出单元14下限Output 14 lower limit | 0x1037 | A | 写write |  |  |
| 57 | 输出单元14上限Output 14 upper limit | 0x1038 | A | 写write |  |  |
| 58 | 输出单元15下限Output 15 lower limit | 0x1039 | A | 写write |  |  |
| 59 | 输出单元15上限Output 15 upper limit | 0x103A | A | 写write |  |  |
| 60 | 输出单元16下限Output 16 lower limit | 0x103B | A | 写write |  |  |
| 61 | 输出单元16上限Output 16 upper limit | 0x103C | A | 写write |  |  |
| 62 | 输出单元17下限Output 17 lower limit | 0x103D | A | 写write |  |  |
| 63 | 输出单元17上限Output 17 upper limit | 0x103E | A | 写write |  |  |
| 64 | 输出单元18下限Output 18 lower limit | 0x103F | A | 写write |  |  |
| 65 | 输出单元18上限Output 18 upper limit | 0x1040 | A | 写write |  |  |
| 66 | 输出单元19下限Output 19 lower limit | 0x1041 | A | 写write |  |  |
| 67 | 输出单元19上限Output 19 upper limit | 0x1042 | A | 写write |  |  |
| 68 | 输出单元20下限Output 20 lower limit | 0x1043 | A | 写write |  |  |
| 69 | 输出单元20上限Output 20 upper limit | 0x1044 | A | 写write |  |  |
| 70 | 输出单元21下限Output 21 lower limit | 0x1045 | A | 写write |  |  |
| 71 | 输出单元21上限Output 21 upper limit | 0x1046 | A | 写write |  |  |
| 72 | 输出单元22下限Output 22 lower limit | 0x1047 | A | 写write |  |  |
| 73 | 输出单元22上限Output 22 upper limit | 0x1048 | A | 写write |  |  |
| 74 | 输出单元23下限Output 23 lower limit | 0x1049 | A | 写write |  |  |
| 75 | 输出单元23上限Output 23 upper limit | 0x104A | A | 写write |  |  |
| 76 | 输出单元24下限Output 24 lower limit | 0x104B | A | 写write |  |  |
| 77 | 输出单元24上限Output 24 upper limit | 0x104C | A | 写write |  |  |
| 78 | 输出单元1状态 Output 1 Status | 0x104D |  | 写write | 1=关闭  2=开启 |  |
| 79 | 输出单元2状态 Output 2 Status | 0x104E |  | 写write |  |
| 80 | 输出单元3状态 Output 3 Status | 0x104F |  | 写write |  |
| 81 | 输出单元4状态  Output 4 Status | 0x1050 |  | 写write |  |
| 82 | 输出单元5状态 Output 5 Status | 0x1051 |  | 写write |  |
| 83 | 输出单元6状态 Output 6 Status | 0x1052 |  | 写write |  |
| 84 | 输出单元7状态 Output 7 Status | 0x1053 |  | 写write |  |
| 85 | 输出单元8状态 Output 8 Status | 0x1054 |  | 写write |  |
| 86 | 输出单元9状态 Output 9 Status | 0x1055 |  | 写write |  |
| 87 | 输出单元10状态  Output 10 Status | 0x1056 |  | 写write |  |
| 88 | 输出单元11状态 Output 11 Status | 0x1057 |  | 写write |  |
| 89 | 输出单元12状态 Output 12 Status | 0x1058 |  | 写write |  |
| 90 | 输出单元13状态 Output 13 Status | 0x1059 |  | 写write |  |
| 91 | 输出单元14状态 Output 14 Status | 0x105A |  | 写write |  |
| 92 | 输出单元15状态 Output 15 Status | 0x105B |  | 写write |  |
| 93 | 输出单元16状态  Output 16 Status | 0x105C |  | 写write |  |
| 94 | 输出单元17状态Output 17 Status | 0x105D |  | 写write |  |
| 95 | 输出单元18状态Output 18 Status | 0x105E |  | 写write |  |
| 96 | 输出单元19状态Output 19 Status | 0x105F |  | 写write |  |
| 97 | 输出单元20状态Output 20 Status | 0x1060 |  | 写write |  |
| 98 | 输出单元21状态Output 21 Status | 0x1061 |  | 写write |  |
| 99 | 输出单元22状态Output 22 Status | 0x1062 |  | 写write |  |
| 100 | 输出单元23状态Output 23 Status | 0x1063 |  | 写write |  |
| 101 | 输出单元24状态Output 24 Status | 0x1064 |  | 写write |  |
| 102 | 总电能L1 Total electric energy L1 | 0x1065 |  | 写write |  |  |
| 103 | 总电能L2 Total electric energy L2 | 0x1066 |  | 写write |  |  |
| 104 | 总电能L3 Total electric energy L3 | 0x1067 |  | 写write |  |  |
| 105 | 输出单元1电能Output 1 electric energy | 0x1068 |  | 写write |  |  |
| 106 | 输出单元2电能Output 1 electric energy | 0x1069 |  |  |  |  |
| 107 | 输出单元3电能Output 3 electric energy | 0x106A |  |  |  |  |
| 108 | 输出单元4电能Output 4 electric energy | 0x106B |  |  |  |  |
| 109 | 输出单元5电能Output 5 electric energy | 0x106C |  |  |  |  |
| 110 | 输出单元6电能Output 6 electric energy | 0x106D |  |  |  |  |
| 111 | 输出单元7电能Output 7 electric energy | 0x106E |  |  |  |  |
| 112 | 输出单元8电能Output 8 electric energy | 0x106F |  |  |  |  |
| 113 | 输出单元9电能Output 9 electric energy | 0x1070 |  |  |  |  |
| 114 | 输出单元10电能Output 10 electric energy | 0x1071 |  |  |  |  |
| 115 | 输出单元11电能Output 11 electric energy | 0x1072 |  |  |  |  |
| 116 | 输出单元12电能Output 1 2 electric energy | 0x1073 |  |  |  |  |
| 117 | 输出单元13电能Output 13 electric energy | 0x1074 |  |  |  |  |
| 118 | 输出单元14电能Output 14 electric energy | 0x1075 |  |  |  |  |
| 119 | 输出单元15电能Output 15 electric energy | 0x1076 |  |  |  |  |
| 120 | 输出单元16电能Output 16 electric energy | 0x1077 |  |  |  |  |
| 121 | 输出单元17电能Output 17 electric energy | 0x1078 |  |  |  |  |
| 122 | 输出单元18电能Output 18 electric energy | 0x1079 |  |  |  |  |
| 123 | 输出单元19电能Output 19 electric energy | 0x107A |  |  |  |  |
| 124 | 输出单元20电能Output 20 electric energy | 0x107B |  |  |  |  |
| 125 | 输出单元21电能Output 21 electric energy | 0x107C |  |  |  |  |
| 126 | 输出单元22电能Output 22 electric energy | 0x107D |  |  |  |  |
| 127 | 输出单元23电能Output 23 electric energy | 0x107E |  |  |  |  |
| 128 | 输出单元24电能Output 24 electric energy | 0x107F |  |  |  |  |
| 129 | 波特率baud rate | 0x1080 |  |  |  |  |
| 130 | 四位一组控制命令（1-4位）four per group control command (1-4) | 0x1081 |  |  |  |  |
| 131 | 四位一组控制命令（5-8位）four per group control command (5-8) | 0x1082 |  |  |  |  |
| 132 | 四位一组控制命令（9-12位）four per group control command (9-12) | 0x1083 |  |  |  |  |
| 133 | 四位一组控制命令（13-16位）four per group control command (13-16) | 0x1084 |  |  |  |  |
| 134 | 四位一组控制命令（17-20位）four per group control command (17-20) | 0x1085 |  |  |  |  |
| 135 | 四位一组控制命令（21-24位）four per group control command (21-24) | 0x1086 |  |  |  |  |
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