

| No.                                      | Variable name                                | Programming name          | Address | Access | Description                                                                                                                  | Unit | Times | Function code |
|------------------------------------------|----------------------------------------------|---------------------------|---------|--------|------------------------------------------------------------------------------------------------------------------------------|------|-------|---------------|
| Nominal Parameter(Read only) 0x3400-34FF |                                              |                           |         |        |                                                                                                                              |      |       |               |
| A1                                       | Electricity Charging Nominal Input Voltage   | UP-ElectricChrgNomInVolt  | 3400    | 0      | AC-DC charging module--AC input nominal voltage                                                                              | V    | 100   | 0x04          |
| A2                                       | Electricity Charging Nominal Input Current   | UP-ElectricChrgNomInCur   | 3401    | 0      | AC-DC charging module--AC input nominal current                                                                              | A    | 100   | 0x04          |
| A3                                       | Electricity Charging Nominal Input Power L   | UP-ElectricChrgNomInPowL  | 3402    | 0      | AC-DC charging module--AC input nominal power                                                                                | W    | 100   | 0x04          |
| A4                                       | Electricity Charging Nominal Input Power H   | UP-ElectricChrgNomInPowH  | 3403    | 0      |                                                                                                                              |      |       | 0x04          |
| A5                                       | Electricity Charging Nominal Output Voltage  | UP-ElectricChrgNomOutVolt | 3404    | 0      | AC-DC charging module-- DC output nominal voltage                                                                            | V    | 100   | 0x04          |
| A6                                       | Electricity Charging Nominal Output Current  | UP-ElectricChrgNomOutCur  | 3405    | 0      | AC-DC charging module-- DC output nominal current                                                                            | A    | 100   | 0x04          |
| A7                                       | Electricity Charging Nominal Output Power L  | UP-ElectricChrgNomOutPowL | 3406    | 0      | AC-DC charging module-- DC output nominal power                                                                              | W    | 100   | 0x04          |
| A8                                       | Electricity Charging Nominal Output Power H  | UP-ElectricChrgNomOutPowH | 3407    | 0      |                                                                                                                              |      |       | 0x04          |
| A9                                       | Electricity Charging Nominal Input Frequency | UP-ElectricChrgNomInFrq   | 3408    | 0      | AC-DC charging module--AC input nominal power                                                                                | HZ   | 100   | 0x04          |
| A10                                      | Electricity Charging Mode                    | UP-ElectricChrgMode       | 3409    | 0      | AC-DC charging controller--0007H Constant voltage and current limiting mode 0008H Constant current and voltage limiting mode |      | 1     | 0x04          |
| A11                                      | Load Nominal Input Voltage                   | UP-LoadNomInVolt          | 340A    | 0      | DC-AC discharging module-- DC input nominal voltage                                                                          | V    | 100   | 0x04          |
| A12                                      | Load Nominal Input Current                   | UP-LoadNomInCur           | 340B    | 0      | DC-AC discharging module-- DC input nominal current                                                                          | A    | 100   | 0x04          |
| A13                                      | Load Nominal Input Power L                   | UP-LoadNomInPowL          | 340C    | 0      | DC-AC discharging module-- DC input nominal power                                                                            | W    | 100   | 0x04          |
| A14                                      | Load Nominal Input Power H                   | UP-LoadNomInPowH          | 340D    | 0      |                                                                                                                              |      |       | 0x04          |
| A15                                      | Load Nominal Output Voltage                  | UP-LoadNomOutVolt         | 340E    | 0      | DC-AC discharging module--AC output nominal voltage                                                                          | V    | 100   | 0x04          |
| A16                                      | Load Nominal Output Current                  | UP-LoadNomOutCur          | 340F    | 0      | DC-AC discharging module--AC output nominal current                                                                          | A    | 100   | 0x04          |
| A17                                      | Load Nominal Output Apparent Power L         | UP-LoadNomOutApparentPowL | 3410    | 0      | DC-AC discharging module--AC output nominal apparent power                                                                   | W    | 100   | 0x04          |
| A18                                      | Load Nominal Output Apparent Power H         | UP-LoadNomOutApparentPowH | 3411    | 0      |                                                                                                                              |      |       | 0x04          |
| A19                                      | Load Nominal Output Active Power L           | UP-LoadNomOutActivePowL   | 3412    | 0      | DC-AC discharging module--AC output nominal active power                                                                     | W    | 100   | 0x04          |
| A20                                      | Load Nominal Output Active Power H           | UP-LoadNomOutActivePowH   | 3413    | 0      |                                                                                                                              |      |       | 0x04          |
| A21                                      | Load Nominal Output Frequency                | UP-LoadNomOutFrq          | 3414    | 0      | DC-AC discharging module--AC output nominal frequency                                                                        | HZ   | 100   | 0x04          |
| A22                                      | Load Nominal Output Waveform                 | UP-LoadNomOutWaveform     | 3415    | 0      | DC-AC discharging module--AC output nominal waveform 0000H sine wave, 0001H fixed wave                                       |      | 1     | 0x04          |
| A23                                      | PV Nominal Input Voltage                     | UP-PvNomVolt              | 3416    | 0      | PV input nominal voltage                                                                                                     | V    | 100   | 0x04          |
| A24                                      | PV Nominal Input Current                     | UP-PvNomCur               | 3417    | 0      | PV input nominal current                                                                                                     | A    | 100   | 0x04          |
| A25                                      | PV Nominal Input Power L                     | UP-PvNomPowL              | 3418    | 0      | PV input nominal power                                                                                                       | W    | 100   | 0x04          |
| A26                                      | PV Nominal Input Power H                     | UP-PvNomPowH              | 3419    | 0      |                                                                                                                              |      |       | 0x04          |
| A27                                      | PV Nominal Output Voltage                    | UP-PvNomVolt              | 341A    | 0      | PV output nominal voltage                                                                                                    | V    | 100   | 0x04          |

|     |                                              |                      |      |   |                                                                                                                                                                                                                     |   |     |      |
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| A28 | PV Nominal Output Current                    | UP-PvNomCur          | 341B | 0 | PV output nominal current                                                                                                                                                                                           | A | 100 | 0x04 |
| A29 | PV Nominal Output Power L                    | UP-PvNomPowL         | 341C | 0 | PV output nominal power                                                                                                                                                                                             | W | 100 | 0x04 |
| A30 | PV Nominal Output Power H                    | UP-PvNomPowH         | 341D | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |
| A31 | PV Charging Mode                             | UP-PVChrgMode        | 341E | 0 | Solar controller fan controller--0000H<br>Switching(switch unloading),0001H PWM,0002H<br>MPPT                                                                                                                       |   | 1   | 0x04 |
| A32 | PV Discharging Device Input Nominal Voltage  | UP-DiscDevInNomVolt  | 341F | 0 | DC-DC power--Nominal input voltage                                                                                                                                                                                  | V | 100 | 0x04 |
| A33 | PV Discharging Device Input Nominal Current  | UP-DiscDevInNomCur   | 3420 | 0 | DC-DC power--Nominal input current                                                                                                                                                                                  | A | 100 | 0x04 |
| A34 | PV Discharging Device Input Nominal          | UP-DiscDevInNomPowL  | 3421 | 0 | PV discharging device nominal input power                                                                                                                                                                           | W | 100 | 0x04 |
| A35 | PV Discharging Device Input Nominal          | UP-DiscDevInNomPowH  | 3422 | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |
| A36 | PV Discharging Device Output Nominal Voltage | UP-DiscDevOutNomVolt | 3423 | 0 | DC-DC power--Nominal output voltage                                                                                                                                                                                 | V | 100 | 0x04 |
| A37 | PV Discharging Device Output Nominal Current | UP-DiscDevOutNomCur  | 3424 | 0 | DC-DC power--Nominal output current                                                                                                                                                                                 | A | 100 | 0x04 |
| A38 | PV Discharging Device Output Nominal Power L | UP-DiscDevOutNomPowL | 3425 | 0 | DC-DC power--Nominal output power                                                                                                                                                                                   | W | 100 | 0x04 |
| A39 | PV Discharging Device Output Nominal Power H | UP-DiscDevOutNomPowH | 3426 | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |
| A40 | Charging Device Output Nominal Current2      | UP-ChrgDevOutNomCur2 | 3427 | 0 | It can display the second fixed charging current and has not specific control function. The fixed charging current is 2A for the current version, and it will be 3~10A in the future, which is convenient for usage | A | 100 | 0x04 |
| A41 | Reserved                                     |                      | 3428 | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |
| A42 | Reserved                                     |                      | 3429 | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |
| A43 | Reserved                                     |                      | 342A | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |
| A44 | Reserved                                     |                      | 342B | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |
| A45 | Reserved                                     |                      | 342C | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |
| A46 | Reserved                                     |                      | 342D | 0 |                                                                                                                                                                                                                     |   |     | 0x04 |

| No.                                        | Variable name                                  | Address | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Unit | Times | Function code |
|--------------------------------------------|------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|---------------|
| Real-time parameter(Read only) 0x3500-34FF |                                                |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |       |               |
| B1                                         | Electricity 1 Charging Input Voltage           | 3500    | AC-DC charging module--AC input voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | V    | 100   | 0x04          |
| B2                                         | Electricity 1 Charging Input Current           | 3501    | AC-DC charging module--AC input current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A    | 100   | 0x04          |
| B3                                         | Electricity 1 Charging Input Power             | 3502    | AC-DC charging module--AC input current power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | W    | 100   | 0x04          |
| B4                                         | Electricity 1 Charging Input Power             | 3503    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |       | 0x04          |
| B5                                         | Electricity 1 Charging Input Frequency         | 3504    | AC-DC charging module--AC input current frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | HZ   | 100   | 0x04          |
| B16                                        | Electricity 1 Total Cumulative Charge Energy L | 350F    | Clear after the total cumulative charge energy overflows                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | KWH  | 100   | 0x04          |
| B17                                        | Electricity 1 Total Cumulative Charge Energy H | 3510    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |       | 0x04          |
| B18                                        | Electricity 1 Charging Status                  | 3511    | D15~D14, 00 Normal input voltage, 01 Low input voltage, 02 High input voltage, 03 No connect to the input power, etc.<br>D13~D12, Output power 00-Light load, 01-Medium load, 02-Nominal load, 03-Overload<br>D5 Busbar over-voltage, D6 Busbar under-voltage, D7 Input over current, D8 abnormal output voltage, D9 Heat sink overheating, D10 Hardware over-voltage, D11 Short circuit, D4 Low temperature, D3~2 Charging status 00 No charging, 01 Float charging, 02 Boost charging, 03 Equalizing charging D0. 1 Run, 0 Standby |      | 1     | 0x04          |
| B19                                        | Electricity Charging Battery Temperature       | 3512    | Battery temperature when the electricity charges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ℃    | 100   | 0x04          |
| B20                                        | Electricity Charging Device Temperature        | 3513    | Device temperature when the electricity charges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ℃    | 100   | 0x04          |
| B21                                        | Electricity Charging Power-device Temperature  | 3514    | Power-device temperature when the electricity charges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ℃    | 100   | 0x04          |
| B30                                        | Load Input Voltage                             | 351D    | DC-AC discharging module-Current input voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | V    | 100   | 0x04          |
| B34                                        | Load Output Voltage                            | 3521    | DC-AC discharging module-Current output voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V    | 100   | 0x04          |
| B35                                        | Load Output Current                            | 3522    | DC-AC discharging module-Current output current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | A    | 100   | 0x04          |
| B36                                        | Load Output Status                             | 3523    | D15~D14, 00 Normal input voltage, 01 Low input voltage, 02 High input voltage, 03 No connect to the input power, etc.<br>D13~D12, Output power 00-Light load, 01-Medium load, 02-Nominal load, 03-Overload<br>D5 Output fail, D6 High voltage side short-circuit, D7 Input over-current, D8 Abnormal Output voltage, D9 Unable to stop discharge, D10 Unable to discharge, D11 short-circuit, D4 Abnormal frequency, D3 High temperature, D2 Low temperature.<br><u>D0</u> . 1 Run, 0 Standby<br><u>D1</u> . 0 Normal, 1 Faults      |      | 1     | 0x04          |

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| B42  | Load Output Frequency                      | 3529 | DC-AC module- Current output frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | HZ  | 100 | 0x04 |
| B49  | Load Total Cumulative Energy Consumption L | 3530 | Clear after the total cumulative energy consumption overflows                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | KWH | 100 | 0x04 |
| B50  | Load Total Cumulative Energy Consumption H | 3531 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     | 0x04 |
| B51  | Load Heat Sink 1 Temperature               | 3532 | Sampling temperature of the power device heat sink 1 in the DC-AC module                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ℃   | 100 | 0x04 |
| B52  | Load Heat Sink 2 Temperature               | 3533 | Sampling temperature of the power device heat sink 2 in the DC-AC module                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ℃   | 100 | 0x04 |
| B74  | PV 1 Input Voltage                         | 3549 | PV array's voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | V   | 100 | 0x04 |
| B75  | PV 1 Input Current                         | 354A | PV array's current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | A   | 100 | 0x04 |
| B76  | PV 1 Input Power L                         | 354B | PV array's current generation power L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | W   | 100 | 0x04 |
| B77  | PV 1 Input Power H                         | 354C | PV array's current generation power H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | W   | 100 | 0x04 |
| B88  | PV 1 Total Cumulative Charge Er            | 3557 | Clear after the total cumulative charge energy overflows                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | KWH | 100 | 0x04 |
| B89  | PV 1 Total Cumulative Charge Er            | 3558 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     | 0x04 |
| B90  | PV 1 Charging Device 1 Work Status         | 3559 | D15~D14 Input voltage status. 00 Normal, 01 Without input power, 02H High input voltage, 03H Error input voltage.<br>D13 Charging MOS tube short circuit, D12 Charging or anti-reverse MOS tube open circuit, D11Anti-reverse MOS tube short circuit, D10 Input over current, D9 Load over current when charges the device connected with load, D8 Load short-circuit, D7 Load MOS tube short-circuit<br>D0. 1 Run, 0 Standby<br><b>D1</b> . 0 Normal, 1 Faults<br>D3~2 Charging status 00 No charging, 01 Float charging, 02 Boost charging, 03 Equalizing charging<br>D4. PV Input Short Circuit(Add in 9/16/2013)<br>D5. LED Load Open Circuit(Add in 8/12/2013)<br>D6. Three-way Circuit Imbalance(Add in 8/12/2013) |     | 1   | 0x04 |
| B128 | Battery 1 Voltage                          | 3580 | Current system battery voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | V   | 100 | 0x04 |
| B129 | Battery 1 Current L                        | 3581 | It equals the total charging current minus the total discharging current, which is the current charged into the battery. It is positive when charging and negative when discharging.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | A   | 100 | 0x04 |
| B130 | Battery 1 Current H                        | 3582 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A   | 100 | 0x04 |
| B134 | Battery 1 State of Charge                  | 3586 | Percentage of the battery remaining power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | %   | 1   | 0x04 |

|      |                  |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |   |      |
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| B137 | Battery 1 Status | 3589 | D3~D0, 01H Over voltage, 00H Normal, 02H Under voltage, 03H Over discharge, 04H Faults(BMS Protection) D7~D4, 00H Normal, 01H Over temperature (exceeds the high temperature alarm value), 02H Low temperature(lower than the low temperature alarm value), D8, Battery internal resistance abnormal 1, normal 0; D9 Lithium battery charging protection; D10 Lithium battery discharging protection.<br>D15, 1-Nominal voltage identification error(The relationship between electricity and PV charging for batteries) |  | 1 | 0x04 |
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| No.                                      | Variable name                                                    | Programming name          | Address | Access | Description                                                                                                                                                                                                                                                                                      | Unit    | Times | Function code        |
|------------------------------------------|------------------------------------------------------------------|---------------------------|---------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|----------------------|
| Setting Parameter(Read only) 0x9600-96FF |                                                                  |                           |         |        |                                                                                                                                                                                                                                                                                                  |         |       |                      |
| C1                                       | System LCD backlight time                                        | UP-SysBackLightDelaySec   | 9600    | 1      | The LCD backlight turns off after lighting up for the setting seconds.                                                                                                                                                                                                                           | S       | 100   | Read 0x03 Write 0x10 |
| C2                                       | System Buzzer Alarm                                              | UP-SysBuzzerAlarmDelaySec | 9601    | 1      | Buzzer alarm times. 0 states no alarm, 1-300 states the actual alarm time.                                                                                                                                                                                                                       | S       | 1     | Read 0x03 Write 0x10 |
| C3                                       | System Temperature Unit                                          | UP-SysTempUnit            | 9602    | 1      | 0X01 Celsius, 0x00 Fahrenheit                                                                                                                                                                                                                                                                    |         | 1     | Read 0x03 Write 0x10 |
| C4                                       | System Dry Contact ON Voltage                                    | UP-SysDryOnVolt           | 9603    | 1      | According to the battery voltage, the dry contact is connected below this value.                                                                                                                                                                                                                 | V       | 100   | Read 0x03 Write 0x10 |
| C5                                       | System Dry Contact OFF Voltage                                   | UP-SysDryOffVolt          | 9604    | 1      | According to the battery voltage, the dry contact is disconnected when the batte                                                                                                                                                                                                                 | V       | 100   | Read 0x03 Write 0x10 |
| C6                                       | System Stop Subsidiary Charge Module Voltage(Setting Value 2)    | UP-SysStopSubChrgVolt     | 9605    | 1      | When the battery voltage is higher than the UP-SysStopSubChrgVolt value, the subsidiary charge module stops charging. In utility priority, the solar subsidiary charging is OFF. In PV priority, the utility subsidiary charging is OFF.                                                         | V       | 100   | Read 0x03 Write 0x10 |
| C7                                       | System Recover Subsidiary Charge Module Voltage(Setting Value 1) | UP-SysRecSubChrgVolt      | 9606    | 1      | When the battery voltage is lower than the UP-SysRecSubChrgVolt value, the subsidiary charge module recovers charging. In utility priority, the solar subsidiary charging is ON. In PV priority, the utility subsidiary charging is ON.                                                          | V       | 100   | Read 0x03 Write 0x10 |
| C8                                       | Charging Priority Mode                                           | UP-ChrgPriorityMode       | 9607    | 1      | Three charging modes<br>0001H Solar priority<br>0002H Utility & solar<br>0003H Solar                                                                                                                                                                                                             |         | 1     | Read 0x03 Write 0x10 |
| C9                                       | Output Priority Mode                                             | UP-OSP                    | 9608    | 1      | 0 Inverter priority<br>1 Utility priority                                                                                                                                                                                                                                                        |         | 1     | Read 0x03 Write 0x10 |
| C10                                      | System Aggregate Charging Current                                | UP-SysAggChrgCur          | 9609    | 1      | Utility charging current + solar charging current, this current is the sum of Utility and PV current. The actual charging current cannot exceed this value.                                                                                                                                      | A       | 100   | Read 0x03 Write 0x10 |
| C11                                      | Protocol Type                                                    |                           | 960A    | 1      | Lithium battery corresponding protocol type: 1, 2, 3, 4, 5, 6, 7,                                                                                                                                                                                                                                |         | 1     | Read 0x03 Write 0x10 |
| D0                                       | Battery Mode                                                     | UP-BateMode               | 960E    | 1      | 0 Battery mode, 1 non-battery mode                                                                                                                                                                                                                                                               |         | 1     | Read 0x03 Write 0x10 |
| D1                                       | Battery type                                                     | UP-SysBattType            | 960F    | 1      | 0001H Sealed, 0002H GEL, 0003H FLD, 0004H LFP4S, 0005H LFP8S, 0006H LFP15S, 0007H LFP16S, 0008H LNCM3S, 0009H LNCM6S, 000AH LNCM7S, 000BH LNCM13S, 000CH LNCM14S, 0000H User                                                                                                                     |         | 1     | Read 0x03 Write 0x10 |
| D2                                       | System Battery Capacity                                          | UP-SysBattCap             | 9610    | 1      | The nominal capacity of the battery(group)used in the system, Unit: AH                                                                                                                                                                                                                           | AH      | 1     | Read 0x03 Write 0x10 |
| D3                                       | Temperature compensate coefficient                               | TempCmpCoe                | 9611    | 1      | A parameter that participates in calculating the equalize charging voltage, boost charging voltage, float charging voltage, and low voltage disconnect voltage. It ranges from 0 to 9 generally, unit: mV/°C/2V                                                                                  |         | 1     | Read 0x03 Write 0x10 |
| D5                                       | System Charge Equalization Hold Time                             | UP-SysChrgEqualHoldTime   | 9613    | 1      | The accumulative minutes of the UP-SysChrgEqualHoldTime range from 60 to 120 minutes generally. For the accumulation process, the time length is set to 1.5 times the value.                                                                                                                     | Minutes | 1     | Read 0x03 Write 0x10 |
| D6                                       | System Charge Boost Hold Time                                    | UP-SysChrgBoostHoldTime   | 9614    | 1      | The accumulative minutes of the battery remains above the boost voltage without interruption. It ranges from 60 to 120 minutes generally. For the accumulation process, the time length is set to 1.5 times the value.                                                                           | Minutes | 1     | Read 0x03 Write 0x10 |
| D7                                       | Over Voltage Disconnect Voltage                                  | VCtrl_OVD                 | 9615    | 1      | When the battery voltage exceeds this value, it will shut down the system discharge and charge.                                                                                                                                                                                                  | V       | 100   | Read 0x03 Write 0x10 |
| D8                                       | Charging Limit Voltage                                           | VCtrl_CLV                 | 9616    | 1      | This voltage is the highest full-charge voltage under any circumstances. After compensation and correction, when the equalize charging voltage, boost charging voltage, and float charging voltage are greater than the VCtrl_CLV value, the VCtrl_CLV is taken as the highest charging voltage. | V       | 100   | Read 0x03 Write 0x10 |
| D9                                       | Over Voltage Reconnect Voltage                                   | VCtrl_OVR                 | 9617    | 1      | It is calculated based on other quantities. When the battery voltage goes lower than this value, it will recover the system discharge and charge.                                                                                                                                                | V       | 100   | Read 0x03 Write 0x10 |

|     |                                                              |                           |      |   |                                                                                                                                                                                                                                                                                                                                                                                                 |    |     |                      |
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| D10 | Equalize Charging Voltage                                    | VCtrl_ECV                 | 9618 | 1 | The charging target voltage of the equalize charging mode.                                                                                                                                                                                                                                                                                                                                      | V  | 100 | Read 0x03 Write 0x10 |
| D11 | Boost Charging Voltage                                       | VCtrl_BCV                 | 9619 | 1 | When the battery (group) voltage is lower than the VCtrl_BVR value, a constant-voltage current-limiting voltage is adopted to ensure the battery (group) is fully charged. This constant-voltage current-limiting charging voltage is called boost charging voltage. The boost charging process generally lasts 1 to 3 hours, usually 2 hours. It should be transferred into the float charging | V  | 100 | Read 0x03 Write 0x10 |
| D12 | Float Charging Voltage                                       | VCtrl_FCV                 | 961A | 1 | When the battery (group) completes the equalize or boost charging process, it enters the float charging process. At this time, the target voltage of the battery (group) maintained by the controller is the float charging voltage, and the battery (group) is always maintained at this voltage.                                                                                              | V  | 100 | Read 0x03 Write 0x10 |
| D13 | Boost Reconnect Charging Voltage                             | VCtrl_BVR                 | 961B | 1 | It is calculated based on other quantities. When the battery (group) voltage is lower than the VCtrl_BVR value and higher than the low voltage disconnect voltage, this process lasts for at least 1 minute. To replenish power to the battery (group) quickly and enter the boost charging process, the voltage, called the boost reconnect charging voltage, is adopted.                      | V  | 100 | Read 0x03 Write 0x10 |
| D14 | Low Voltage Reconnect Voltage                                | VCtrl_LVR                 | 961C | 1 | When the battery (group) voltage is higher than the VCtrl_LVR value, the low voltage disconnect protection is eliminated, and the load output is restored. This voltage(VCtrl_LVR) is called low voltage reconnect voltage.                                                                                                                                                                     | V  | 100 | Read 0x03 Write 0x10 |
| D15 | Under Voltage Warning Reconnect Voltage                      | VCtrl_UVWR                | 961D | 1 | When the battery (group) voltage is higher than the VCtrl_UVWR value, the under voltage warning is eliminated. This voltage is generally used to turn off the auxiliary charging device.                                                                                                                                                                                                        | V  | 100 | Read 0x03 Write 0x10 |
| D16 | Under Voltage Warning Voltage                                | VCtrl_UVW                 | 961E | 1 | When the battery (group) voltage is lower than the VCtrl_UVW value, the battery power is low and close to the low voltage disconnect voltage. This voltage(VCtrl_UVW) is called under voltage warning voltage. This voltage is generally used to start the auxiliary charging devices, such as diesel                                                                                           | V  | 100 | Read 0x03 Write 0x10 |
| D17 | Low Voltage Disconnect Voltage                               | VCtrl_LVD                 | 961F | 1 | To prevent the battery (group) from over-discharging and ensure that it has a certain remaining capacity (usually 10-40%), you should take the 20% of the battery (group) remaining capacity as the VCtrl_LVD value. When the battery (group) voltage drops to the set value, the controller cuts off the load output.                                                                          | V  | 100 | Read 0x03 Write 0x10 |
| D18 | Discharging Limit Voltage                                    | VCtrl_DLV                 | 9620 | 1 | It is calculated based on other quantities. This voltage is the lowest discharge voltage under any circumstances. When the low voltage disconnect voltage is lower than the VCtrl_DLV value after compensation and correction, the controller will take the discharging limit voltage as the low voltage disconnect                                                                             | V  | 100 | Read 0x03 Write 0x10 |
| D19 | Lithium battery Parameters Enable                            | UP-SysDevice_ParaReserve1 | 9621 | 1 | When the value is set to 768, the lithium battery works; when the value is set to 1024, the lithium battery does not work. For the Lithium battery, set the value to 768. For a Non-lithium battery, set the value to 1024.                                                                                                                                                                     |    | 1   | Read 0x03 Write 0x10 |
| D20 | Lithium Battery Low-temperature Forbid Charging Temperature  | UP-SysTOVERLOWC           | 9622 | 1 | When the actual measured temperature is less than the UP-SysTOVERLOWC value, the system turns off charging or prohibits charging. This parameter definition ranges from +10℃ to -40℃, and the temperature difference is +2℃.                                                                                                                                                                    | ℃  | 100 | Read 0x03 Write 0x10 |
| D21 | Lithium Battery Low-temperature Forbid Discharge Temperature | UP-SysTOVERLOWL           | 9623 | 1 | When the actual measured temperature is less than the UP-SysTOVERLOWL value, the system turns off discharge or prohibits discharge. This parameter definition ranges from +10℃ to -40℃, and the temperature difference is +2℃.                                                                                                                                                                  | ℃  | 100 | Read 0x03 Write 0x10 |
| E1  | DC-AC Output Voltage Class                                   | UP-OUTVoltage             | 9631 | 1 | Inverter output voltage class:110V 120V 220V 230V                                                                                                                                                                                                                                                                                                                                               | V  | 100 | Read 0x03 Write 0x10 |
| E2  | DC-AC Output Frequency                                       | UP-OutFre                 | 9632 | 1 | Inverter output frequency: 50Hz 60Hz                                                                                                                                                                                                                                                                                                                                                            | HZ | 100 | Read 0x03 Write 0x10 |
| E18 | Load Current Limit                                           | LDC                       | 9642 | 1 | Inverter AC output current limit value                                                                                                                                                                                                                                                                                                                                                          | A  | 100 | Read 0x03 Write 0x10 |
| F1  | Electricity Charging Current(MAX)                            | UP-ElectricChrgCurMax     | 9647 | 1 | Maximum charging current for AC-DC charging module                                                                                                                                                                                                                                                                                                                                              | A  | 100 | Read 0x03 Write 0x10 |

|    |                        |                |      |   |                                                                                                                                  |   |     |                      |
|----|------------------------|----------------|------|---|----------------------------------------------------------------------------------------------------------------------------------|---|-----|----------------------|
| F2 | AC-DC Charging Voltage | UP-AcDc_Charge | 9648 | 1 | The UP-AcDc_Charge is the upper limit of the utility voltage. The utility is abnormal when it is higher than this setting value. | V | 100 | Read 0x03 Write 0x10 |
| F3 | AC-DC Bypass Voltage   | UP-AcDc_Bypass | 9649 | 1 | The UP-AcDc_Bypass is the lower limit of the utility voltage. The utility is abnormal when it is lower than this setting value.  | V | 100 | Read 0x03 Write 0x10 |

| No.                                                     | Variable name                                   | Address | Access | Description                                                                                                          | Function code           |
|---------------------------------------------------------|-------------------------------------------------|---------|--------|----------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Discrete switch (0x0100-0x01FF)(Read and Write)</b>  |                                                 |         |        |                                                                                                                      |                         |
| H0                                                      | Clear the electricity statistics                | 0100    | 1      | 0-1(0-Disable,1-Enable)                                                                                              | 0X01 Read<br>0x05 Write |
| H1                                                      | Clear fault                                     | 0101    | 1      | 0-1(0-OFF,1-ON)                                                                                                      | 0X01 Read<br>0x05 Write |
| H3                                                      | System switch. The Output default switch enable | 0103    | 1      | 1: ON, 0: OFF                                                                                                        | 0X01 Read<br>0x05 Write |
| H6                                                      | Load ON/OFF                                     | 0106    | 1      | 1 Load ON<br>0 Load OFF                                                                                              | 0X01 Read<br>0x05 Write |
| H8                                                      | Local/Remote Control                            | 0108    | 1      | 1 Remote control<br>0 Local control(The local switch and energy-saving mode are enabled by default after power OFF.) | 0X01 Read<br>0x05 Write |
| <b>Discrete switch Input (0x2100-0x21FF)(Read-only)</b> |                                                 |         |        |                                                                                                                      |                         |
| I1                                                      | Inverter bypass                                 | 2100    | 0      | 1-Inverter bypass, 0-No inverter bypass                                                                              | 0x02                    |
| I2                                                      | Day/Night                                       | 2101    | 0      | 1-Night, 0-Day                                                                                                       | 0x02                    |

| No.          | Variable name             | Programming name | Address | Access | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Unit             | Note |
|--------------|---------------------------|------------------|---------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------|
| Device Info. |                           |                  |         |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |      |
| J1           | Manufacturer              | Company          |         | 0      | EPEVER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Character string | Must |
| J2           | Device Model              | DeviceModel      |         | 0      | UPOWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Character string | Must |
| J3           | Software&Hardware Version | SHVersion        |         | 0      | V1.01+V2.01(Software version+Hardware version)                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Character string | Must |
| J4           | Serial Number             | SerialNum        |         | 0      | <p>The product serial number is fixed as an ASCII string of 16 bytes. It contains product model 2 characters + 8 characters for the year, month, and day + 6 characters for serial number.</p> <p>It can be modified by automatically incremented and written into the last page of the Flash memory through the batch programming tool.</p> <p>Example: 1220130120000045</p> <p>12-represents VS5048N</p> <p>20130120 means January 20, 2013</p> <p>000045-indicates that the serial number shipped today is</p> | Character string | Must |
| J5           | Dictionary Parameters     | DictionaryPara.  |         | 0      | The dictionary parameters are used to record the start bit and the number of each segment register address, for example, 3400H, 31,3500H, 120, 9600H, 83,100H, 17,                                                                                                                                                                                                                                                                                                                                                | Character string | Must |
| J6           | Password                  | Password         |         | 1      | Read and write the password by specified command.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Character string |      |
| J7           | Communication ID          | CommID           |         | 1      | Read and write the communication ID by specified                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Character string | Must |