SOP for 51150 Connection with Growatt Inverter

1. Preparation

1.1 Equipment and tools

a. Equipment: battery, inverter, a RS485 communication box, two TIA 568B national standard network cables, upper computer software (UCS), laptop computer;b. Tools: Electric screwdriver /Phillips screwdriver, multimeter (Optional), insulation gloves, insulating tape

1.2 Documents: Product specification Inverter specifications,

2. Operating steps

2.1Turn off the breaker in the battery and inverter



3.2 Connect the power cable between the battery and the inverter (avoid short circuit causing by direct contact between the black and red lines. The red line must be connected to the positive terminal and the black line to the negative terminal)



3.3 Connect the communication between the UCS and the battery

a. a. Confirmation of the communication protocol between the battery and the UCS as 7A8B - After stripping the TIA568B national standard network cable, connect pin no. 7 to port A and pin no. 8 to port B of the 485 communication box.



b. Connect the RS485 line in the below indicated position of the battery to the computer



c. Confirm that the communication cable can be driven: Open "Computer Management" on the computer \rightarrow click "Device Manager" \rightarrow click "Ports", if the corresponding "Communication port (COM1)", then the communication cable can be driven; If not, please contact us to provide the corresponding driver.



3.4 Turn on the battery circuit breaker, inverter switch, then press the power button to start.



3.5 Set the protocol setting for the battery via UCS

a. Open the host APP on the computer: LH0106-V1.5-beta5. The APP icon is as follows;



b. "Open Port" \rightarrow "Start Sample" \rightarrow "Read info";

b. After opening the interface of the UCS as shown in the figure, select the communication serial port that was successfully driven in step 3.4 in the port drop-down box, and click "Open Port" \rightarrow "Start Sample" \rightarrow "Read info"

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|------|----------------|------------------------|--------------------------------------|--------------|----------------|---|--|----------------|---|--------------|---|-----------------|---------------|
| Î | Data Collectio | 1.5-beta1 | Calibration De | evice Upgrad | | | | | | | | Setting WiFi Up | load Interval |
| E CO | Communication | on Settings V4_UL - | Band rate 19200 - Sampling tim | bps 0 | t Sampling | tate Descriptio Normal Alarm Protection | n Alarm bytes Protect bytes Status bytes Balance bytes | 81 81 81 | Protect2 bytes: Fault bytes: Reboot time: Current Rev: | Bat Al | ADC Ref: Volt Ref: DUT Ref: | | Modify |
| | Refresh C | :OM7 - | 1000 | ms L | 0 | | | | | | Alarm/protection | on Status | |
| 4 | | | Dem | values: | Item: | values: | ltem: | values: | Ne | | CLV_Alarm | CLI_Alarn L | CHE Alara |
| | Item | Yaluer. | Call9 Voltacer | | Temperature 1: | | Total Voltage: | | Tittle Zone: | | CLV_Protect | DHT Alern | CHC_Protest |
| | Celli Voltage | | Cell10 Voltage | | Temperature 2 | | Current: | | Start Charging: | | PLV Protect | DHT_Protect | COC_Protect |
| | Cell2 Voltage | | Cell11 Voltage | | Temperature 3: | | FCC Capacity: | | End Charging: | | COV_Alarm | DLT_Alarn | SC_Protect |
| 101 | Cell3 Voltage: | | Cell12 Voltage | | Temperature 4: | | FDC Capacily: | | Discharge Time: | | COV_Protect | DLI_Protect | SPI_ALarm |
| - | Cell4 Voltage: | | Call 2 Voltage | | Temperature 5: | | Capacity: | | Charging Time: | | POV_Alarm | FHI_ALarn | MTC_Alarm |
| | Cell5 Voltage | | Call A Voltage | | Temperature 6 | | RSOC: | | FCM: | | POV_Protect | DHC_Alarm | AFE_Alarm |
| | Cell6 Voltage | | C-REVelage | | Temperature 7: | | Cycles: | No. | FDM: | | CHI_Protect | DHC_Protect | ADS_Alarm |
| B | Cell7 Vokage. | | Cesto voltage. | | Cell String: | | SOH: | | Device Type: | | | | |
| 44 | Cell8 Voltage: | | Leins Vokage. | | | | | | | | BMS Status | | 0000 |
| | In the second | | | | | Information | | HAR | Modify | Capacity | | Discharge MOS: | off 0000 |
| | Notificatio | ns. | | | | Lapacity: | | | Modify | Barcode | Limiter Enable | ff addr: | |
| 8 | | | | | | Barcode. | | | Mod | ity SN | | Standby | |
| | | | | | | 5N: | | | | | | 000 | 00 |
| | 1 | | | | | MFR name: | . In | - | Rea | id Info | 9 🗐 | | |
| | | Save | to Excel | | | Version: | All market and the second | | Modil | W RSOC | | | |
| 15 | | | | | | Capacity: | | *AA | | <u> </u> | | | |
| -14 | | | | | | | | | | | System Time: 17:44 | 1:22 | |
| | Offlinel | | | Ready! | | | | | | | | | |

c. Successful communication after seeing the following dialog box and the Note display; if not present, confirm the line connection again or contact us directly;

| Communicatio LH01 Po Refresh | n Settings 06 v rt 0M5 v | Baud rate 19200 - Sampling tim 1000 - | bps C e ms Clos | lose Port | State Descriptio | Alarm byte Protect byte Status byte Balance byte | es:0000 es:0000 es:020F es:0000 | Protect2 bytes: Fault bytes: Reboot Time Current Rev: | 0000 0000 :9 0 mA | ADC Ref:1531 Bat Volt Ref:53286 mV AOUT Ref:3262 mV Flag bytes:C004 | Setting WiFi U Upload Interva | oload Interval I: 12:0:0 Modify |
|--|------------------------------------|--|--|--------------------------------|---|---|--|--|-------------------------------------|--|--|---|
| Item: | values: 3329mV | Item: Cell9 Voltage: | values: 3327mV | Item: Temperature 1: | values: 25°C | Item: Total Voltage: | values: 53236mV | Time Zone: | 8 | Alarm/protection | CLT_Alarm | DOC_Protect |
| ell2 Voltage: ell3 Voltage: | 3328mV 3319mV | Cell10 Voltage: Cell11 Voltage: | 3330mV 3328mV | Temperature 2 | 25°C LH0106 | Current: | OmA × mAH | Start Charging: End Charging: | 08:00:00 | CLV_Protect PLV_Alarm PLV_Protect | DHT_Alarm DHT_Protect | CHC_Alarm CHC_Protect COC_Protect |
| ell4 Voltage: ell5 Voltage: | 3326mV 3330mV | Cell12 Voltage: Cell13 Voltage: | 3328mV 3328mV | Temperature • Temperature ! | Get the inform | nation comple | etely! mAH mAH | Discharge Time: Charging Time: | Omin 4s Omin 1s | COV_Alarm COV_Protect | DLT_Alarm DLT_Frotect | SC_Protect SPI_Alarm LRSOC Alarm |
| ell6 Voltage: ell7 Voltage: | 3328mV 3330mV | Cell14 Voltage: Cell15 Voltage: | 3326mV 3324mV | Temperature (Temperature) | | ОК | 8 | FCM: FDM: | 66171mAH 267mAH | POV_Protect | FHT_Protect | NTC_Alarm AFE_Alarm |
| ote: comn ote: comn ote: comn ote: comn | 3326mV nunication nunication | is normal!(1 is normal!(1 is normal!(1 | 3329mV 7:25:05) 7:25:06) 7:25:07) | Cell String: | 16 Information Capacity: 11 Barcode: 51 SN: | SOH: 00000 1 07490430003 | 100% | Device Type: Modify Modify Modify | 14 Capacity Barcode ify SN | BMS Status Limiter Enable | Discharge MOS:on Charge MOS:on arrent limit:of | a PRE:0 a PAR:0 £ add |
| | Save | to Excel | | | MFR name: T Version: O Capacity: | DPBAND DOE0006 | AH | Read | d Info RSOC | Bat onli Heater | Standby ne: 0000 Abno os: 0000 Requ | master preal: 0000 aest: 0000 |

d. Confirm the protocol name of the Growatt inverter is "6" by checking the product specification for the UCS setting requirements.

| Protocol name | Protocol description |
|---------------|------------------------------|
| 0 | Topband Modbus, 19200bps |
| 1 | Schneider Modbus, 19200bps |
| 2 | Solark(Deye) Modbus: 9600bps |
| 3 | Victron CANbus, 250kbps |
| 4 | UZ-CANbus, 500kbps |
| 5 | |
| 6 | Growatt Modbus, 9600bps |
| | |
| 8 | Voltronic Modbus: 9600bps |
| 9 | (Deye)00-CANbus, 500kbps |
| 10 | Solark CANbus, 500kbps |
| 11 | SMA Canbus, 500kbps |

e. Select Parameter calibration in the UCS, according to the inverter interface protocol name is 6, in the figure Protocol Name arrow drop-down position select "6", and then click "setting", after the successful setting will appear in the window and press OK. The setting through the UCS is finished!



e. After the protocol is set successfully, remove the network cable from the battery port

3.6 Connect the communication cable line between the inverter and the battery

a. Confirm the inverter protocol: The communication protocol of the Victron inverter is line 2 in the national standard network cable for A, and line 1 for B;

| in number | RS485 port | CAN port | |
|-----------|------------|----------|----------|
| 1 | RS485B | 77 | |
| 2 | RS485A | | |
| 3 | | | 87654321 |
| 4 | | CANH | |
| 5 | | CANL | |
| 6 | | ++ | |
| 7 | | | |
| 8 | | | |

b. Confirm the can protocol in the battery: The communication protocol of the battery is line 2 in the national standard network cable for A, and line 1 for B.



d. Connect the lines between the battery and inverter according to the above protocol explanation for the battery and inverter: As the below indication, the communication between the battery and inverter is finished.



3.7 Turn on the inverter switch. If the inverter screen displays the same SOC as the actual battery, the connection is successful.

