SMU06T Site Monitoring Unit
V500R003C10

User Manual

Issue	01
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About This Document

Purpose

This document describes the site monitoring unit SMU06T in terms of its product overview, panel and interface, liquid crystal display (LCD), common operations, maintenance and troubleshooting.

Figures in this manual are for reference only.

Intended Audience

This document is intended for:

- Sales engineers
- Technical support personnel
- Maintenance personnel

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Symbol	Description
NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
NOTE	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Change History

Changes between document issues are cumulative. The latest document issue contains all the changes made in earlier issues.

Issue 01 (2023-07-14)

This is the first official release.

The corresponding software version is V500R003C10.

Contents

1 Product Overview

The site monitoring unit SMU06T (SMU for short) is a compact monitoring module that monitors and manages Huawei box-type and cabinet-type power systems.

The SMU communicates with the Huawei NetEco and a power and environment network management system (NMS), which allows you to remotely manage the power systems at multiple sites.

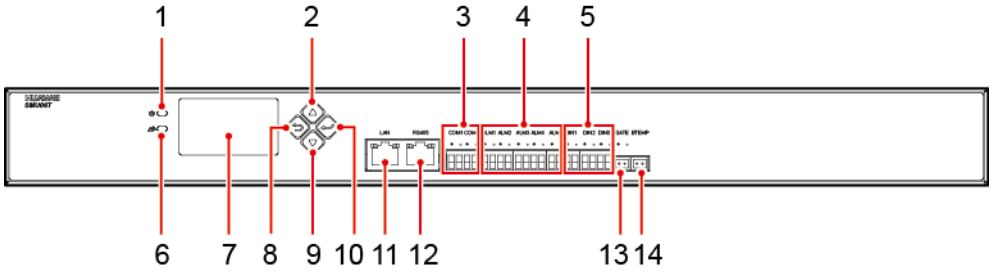
It also provides sensor ports, RS485/RS232 ports, and dry contact inputs/outputs to manage the power cabinet environment and report alarms.

2 Component Description

2.1 SMU06T (Cabinet Scenario)

Panel and Ports

Figure 2-1 Panel and ports



(1) Run indicator	(2) Up button	(3) COM port	(4) Dry contact output ports
(5) Dry contact input ports	(6) Alarm indicator	(7) LCD	(8) Back button
(9) Down button	(10) OK button	(11) LAN port	(12) RS485 port
(13) Door status sensor port	(14) Battery temperature sensor port		

Indicators

Table 2-1 Indicator description

Name	Color	Status	Description
Run indicator	Green	Off	The SMU is faulty or has no DC input.
		Blinking at 0.5 Hz	The SMU is running properly and communicating with the host properly.
		Blinking at 4 Hz	The SMU is running properly but is not communicating with the host properly.
Alarm indicator	Red	Off	No critical or major alarm has been generated.
		Steady on	A critical or major alarm has been generated.

Communications Ports

Table 2-2 SMU communications port description

Port	Communications Parameter	Communications Protocol	Function
LAN port	10M/100M autonegotiation	-	Reserved
RS485 port (northbound communication port)	Baud rate: 9600bit/s, 19200bit/s	M/S protocol	Connects to a Huawei NMS
		YDN1363 protocol	Connects to a third-party NMS
		Modbus protocol	Connects to a third-party NMS
COM1/COM2 ports	Baud rate: 9600bit/s, 19200bit/s	Modbus protocol	Connects to a Huawei southbound device

Figure 2-2 Pins in LAN/RS485 ports

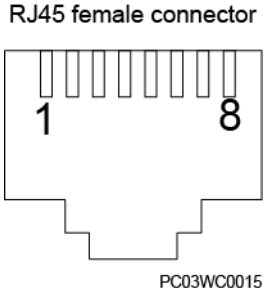


Table 2-3 LAN port pin definitions

Pin	Signal	Description
1	TX+	Transmits data over FE
2	TX-	
3	RX+	Receives data over FE
6	RX-	
4, 5, 7, 8	Null	-

Table 2-4 RS485 port pin definitions

Pin	Signal	Description
1	HRS485_TX+	RS485 data +
2	HRS485_TX-	RS485 data –
4	HRS485_RX+	RS485 data +
5	HRS485_RX-	RS485 data –
6	GND	Grounded
3, 7 and 8	Null	-

Table 2-5 COM1/COM2 ports pin definitions

Silk Screen	Signal	Description
+	RS485+	RS485 data+
-	RS485-	RS485 data-

Sensor and Dry Contact Ports

Figure 2-3 Sensor ports

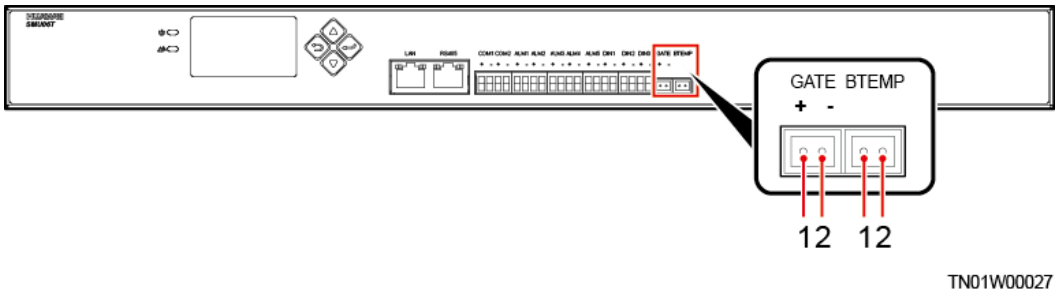


Table 2-6 Sensor and dry contact ports description

Port Type	Silk Screen	Description
Sensor ports	GATE	Door status sensor
	BTEMP	Battery temperature sensor
Dry contact inputs	DIN1	Dry contact input 1
	DIN2	Dry contact input 2
	DIN3	Dry contact input 3
Dry contact outputs	ALM1	Dry contact output 1
	ALM2	Dry contact output 2
	ALM3	Dry contact output 3
	ALM4	Dry contact output 4
	ALM5	Dry contact output 5

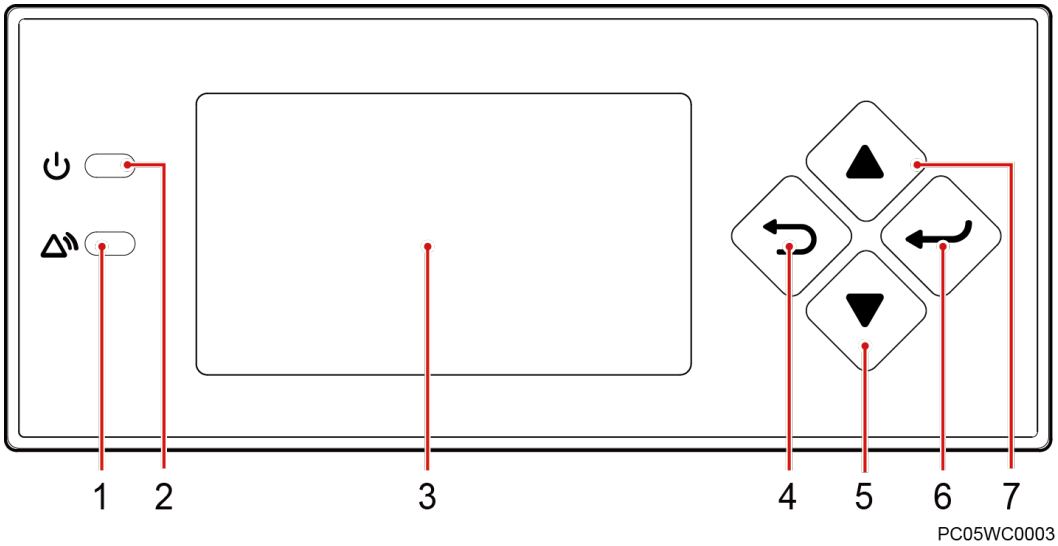
Table 2-7 Sensor ports pin definitions

Silk Screen	NO.	Pin Definition
GATE	1	GATE+
	2	GATE-
BTEMP	1	BTEMP
	2	GND

2.2 SMU06T (Door-Mounted Scenario)

Panel

Figure 2-4 SMU06T panel



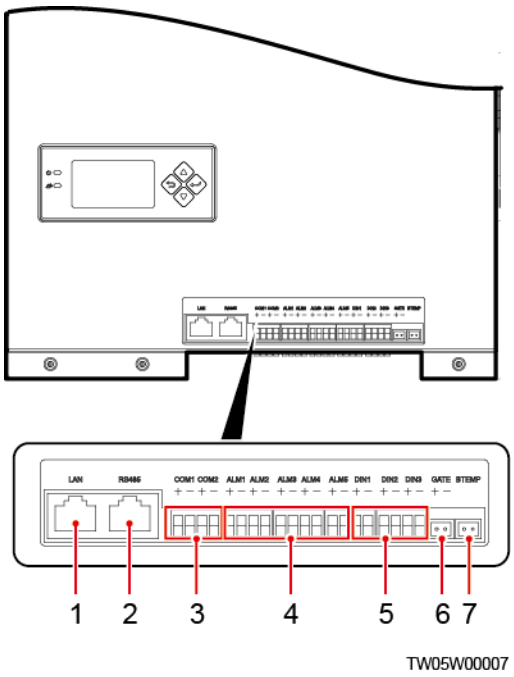
(1) Alarm indicator	(2) Run indicator	(3) LCD
(4) Back button	(5) Down button	(6) OK button
(7) Up button		

Table 2-8 Indicator description

Name	Color	Status	Description
Run indicator	Green	Off	The SMU is faulty or has no DC input.
		Blinking at 0.5 Hz	The SMU is running properly and communicating with the host properly.
		Blinking at 4 Hz	The SMU is running properly but fails to communicate with the host properly.
Alarm indicator	Red	Off	No critical or major alarm has been generated.
		Steady on	A critical or major alarm has been generated.

Port Description

Figure 2-5 Port Positions



(1) LAN port	(2) RS485 port	(3) COM port
(4) Dry contact output ports	(5) Dry contact input ports	(6) Door status sensor
(7) Battery temperature sensor		

Table 2-9 SMU communications port description

Port	Communications Parameter	Communications Protocol	Function
LAN port	10M/100M autonegotiation	-	Reserved
RS485 port (northbound communication port)	Baud rate: 9600bit/s, 19200bit/s	M/S protocol	Connects to a Huawei NMS
		YDN1363 protocol	Connects to a third-party NMS
		Modbus protocol	Connects to a third-party NMS

Port	Communications Parameter	Communications Protocol	Function
COM1/COM2 ports	Baud rate: 9600bit/s, 19200bit/s	Modbus protocol	Connects to a Huawei southbound device

Figure 2-6 Pins in LAN/RS485 ports

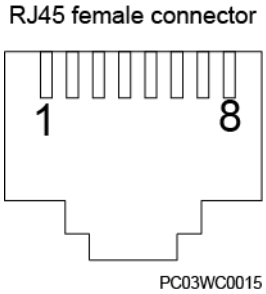


Table 2-10 Pin definitions for the LAN port

Pin	Signal	Description
1	TX+	Transmits data over FE.
2	TX-	
3	RX+	Receives data over FE.
6	RX-	
4, 5, 7, 8	Null	-

Table 2-11 Pin definitions for the RS485 port

Pin	Signal	Description
1	HRS485_TX+	Transmits data over RS485.
2	HRS485_TX-	
3	Null	-
4	HRS485_RX+	Receives data over RS485.
5	HRS485_RX-	
6	PGND	Signal ground
7	Null	-

Pin	Signal	Description
8	Null	-

Table 2-12 Pin definitions for the COM1/2 port

Silk Screen	Signal	Description
+	RS485+	RS485 data +
-	RS485-	RS485 data -

Table 2-13 Sensor portdescription

Port Type	Silk Screen	Remarks
Sensor ports	GATE	Door status sensor
	BTEMP	Battery temperature sensor
Dry contact inputs	DIN1	Dry contact input 1
	DIN2	Dry contact input 2
	DIN3	Dry contact input 3
Dry contact outputs	ALM1	Dry contact output 1
	ALM2	Dry contact output 2
	ALM3	Dry contact output 3
	ALM4	Dry contact output 4
	ALM5	Dry contact output 5

Sensor Ports

Figure 2-7 Sensor positions

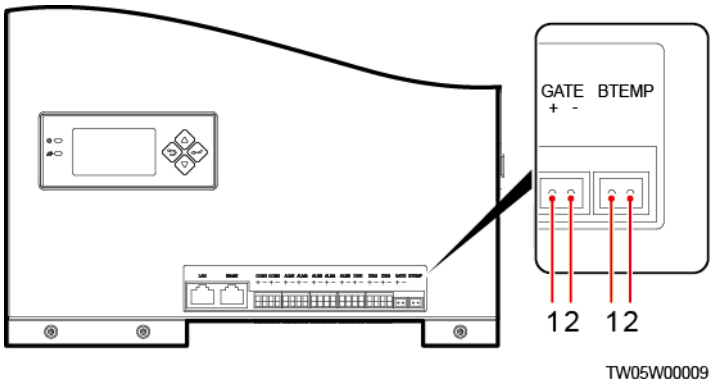


Table 2-14 Sensor port description

Silk Screen	No.	Pin Definition
GATE	1	GATE+
	2	GATE-
BTEMP	1	BTEMP
	2	GND

3 LCD

3.1 Buttons

The SMU panel has four buttons for setting and querying parameters on the LCD. **Table 3-1** describes the buttons.

Table 3-1 Button description

Button	Name	Description
	Up	Press **Up** and **Down** to scroll through the menus or to change the value of a parameter.
	Down	
	Cancel	Returns to the previous menu without saving the settings.
	Enter	• Enters the main menu from the standby screen. • Enters a submenu from the main menu. • Saves menu settings on a submenu.

NOTE

- The LCD screen becomes dark if no button is pressed within 30 seconds.
- You need to log in again if no button is pressed within 1 minute.
- To increase or decrease a parameter value quickly, hold down  or  .
- To restart the SMU, hold down  and  for 10 seconds.
- To increase (or decrease) the LCD backlight, hold down  and  (or ) for 2 seconds.

3.2 Password

Two-level password management supported by the SMU, two user levels are available.

Table 3-2 Two-level password management

Level	Operation Permission	Password
engineer	All permissions except for changing the administrator password and resetting the web password.	000001
admin	Has all operation permissions.	012589 **NOTE** The admin password can only be used by the administrator. It must not be provided for third-party maintenance personnel.

Change the preset password upon your first login to ensure the system security. For details about how to change the password, see**4.2.2 Changing the User Password**.

4 Common Tasks

4.1 Common Installation Tasks

4.1.1 Setting the Display Language

Context

The SMU supports English and Chinese.

LCD Operation

Modify the display language in either of the following ways:

- After the SMU is powered on, the screen for selecting a display language is displayed. Then select a language as required by pressing  or  and enter the standby screen by pressing  .
- With the SMU working properly, set the language on the LCD by navigating through **Main Menu** > **Parameters Settings** > **Local Parameters** > **Language**.

4.1.2 Setting Basic Battery Parameters

Context

Basic battery parameters are the criteria for battery management and need to be set based on the actual number of battery strings and battery capacity.

NOTICE

Incorrect setting of basic battery parameters affects battery charge and discharge management and reduces the battery lifespan.

Table 4-1describes basic battery parameters.

Table 4-1 Basic battery parameters

Parameter	Description	Default Value	Value Range
Battery 1-2 Connected	N indicates the sequence number of the battery string. Set this parameter based on the number of connected battery strings. For example, if the power system reserves four battery fuses or circuit breakers, but actually only battery strings 1 to 3 are connected, set **Battery4 Connected** to **No**.	Yes	• Yes • No
Battery 3-6 Connected	-	No	• Yes • No
Single-String Cap.	Rated capacity of a battery string. **NOTE** A battery string is controlled by one battery fuse or circuit breaker. If one fuse or circuit breaker connects to one battery string and the battery strings connected have different capacities, set **Rate Capacity** to the minimum battery string capacity. For example, fuse 1 connects to a 1000 Ah battery string and fuse 2 to a 1200 Ah battery string, set **Rated Capacity** to **1000 Ah**. If one fuse or circuit breaker connects to multiple battery strings, calculate the rated capacity based on the minimum battery string capacity. For example, if two battery strings (one 1000 Ah, the other 1500 Ah) are connected to one fuse, set **Single-String Cap.** to **2000 Ah** (2 x 1000 Ah).	150 Ah **NOTE** The default value various depending on the power system type.	5-10000

LCD Operation

Set basic battery parameters on the LCD by navigating through **Main Menu** > **Setting Wizard** > **Battery Parameters**.

4.1.3 Setting the Date and Time

Context

You can set the date and time based on the local time.

LCD Operation

Set the date and time on the LCD by navigating through **Main Menu** > **Setting Wizard** > **Date and Time**.

4.1.4 Setting Alarm Enabling Function, Alarm Severities, and Associated Relays

Context

Table 4-2 Alarm Setting

Setting Item	Setting Description
Enabling alarm generation	You can enable or disable each alarm based on site requirements. If an alarm is enabled, the SMU generates the alarm when the alarm condition is met. If an alarm is disabled, the SMU does not generate the alarm even though the alarm condition is met.
Setting alarm severities	There are four alarm severities: critical, major, minor, and warning. You can set a severity for each alarm.
Setting alarm associated relays	You can associate alarms to relays with dry contact outputs.

LCD Operation

Set the alarm enabling function, alarm severities, and associated relays on the LCD by navigating through **Main Menu** > **Parameters Settings** > **Alarm Parameters** > **Alarm Config**.

4.1.5 Setting Alarm Actions for Dry Contact Outputs

Context

You can set alarm action for associated dry contact outputs. The initial action is as follows: If an alarm is generated, the dry contact output is closed; if no alarm is generated, the dry contact output is open.

LCD Operation

Set alarm actions for dry contact outputs on the LCD by navigating through **Main Menu** > **Parameters Settings** > **Alarm Parameters** > **DO Dry Contact Para.**.

4.1.6 Setting Alarm Conditions for Dry Contact Inputs

Context

You can set associations between dry contact input status and alarm status. Take the DIN1 as an example. If you set the **DIN1 Alm. Cond.** to **Close**, the SMU generates a **DIN1 Alarm** when the DIN1 is closed.

LCD Operation

Set the alarm conditions for dry contact inputs on the LCD by navigating through **Main Menu** > **Parameters Settings** > **Alarm Parameters** > **DI Dry Contact Para.**.

4.1.7 Clearing Associations Between Alarms and Dry Contacts

Context

You can clear associations between each dry contact output and the associated alarms in one-click way.

LCD Operation

Clear associations between alarms and dry contacts on the LCD by navigating through **Main Menu** > **Parameters Settings** > **Alarm Parameters** > **Clear ALM Asso**.

4.2 Common Maintenance Tasks

4.2.1 Restoring Factory Defaults

Context

NOTICE

After factory defaults are restored, the SMU restarts.

After factory defaults are restored, all parameter values change to their default factory values. You can restore the factory defaults on the LCD.

LCD Operation

Restore factory defaults on the LCD by navigating through **Main Menu** > **Parameters Settings** > **Restore Settings**.

4.2.2 Changing the User Password

Context

To ensure the system security, you are advised to change the password periodically.

Only the administrator has the permission to change the engineer and administrator passwords.

LCD Operation

Change the password on the LCD by navigating through **Main Menu** > **User Manager** > **Change Password**.

NOTE

After selecting **Change Password**, you need select login user and enter password to log in.

- If you log in as **admin**, you can change the password for **admin** and **engineer**.
- If you log in as **engineer**, you can change the password for **engineer**.

4.2.3 Resetting the SMU

Context

Resetting the SMU takes about 10 seconds, during which time the SMU cannot monitor or manage the rectifiers, batteries, and other devices connected. After the SMU is reset, the configuration file used before resetting automatically loads. You do not have to reset the parameters.

LCD Operation

Set **Reset SMU** to **Yes** on the LCD by navigating through **Main Menu** > **Running Control** > **Power System**.

4.2.4 Querying and Clearing Active Alarms

Context

Active alarms are the alarms that are not cleared.

LCD Operation

View **Active Alarm** on the LCD by navigating through **Main Menu** > **Active Alarm**.

Clearing active alarms on the LCD by navigating through **Main Menu** > **Running Control** > **Clear Alarm** > **Active Alarm**.

4.2.5 Querying and Clearing Historical Alarms

Context

Historical alarms are alarms that have been cleared.

LCD Operation

View historical alarms on the LCD by navigating through **Main Menu** > **Running Information** > **Historical Alarm**.

Set **Delete His. Alarms** to **Yes** on the LCD by navigating through **Main Menu** > **Running Control** > **Clear Alarm** > **Historical Alarm**.

4.2.6 Clearing the Rectifiers Failing in Communication

Context

After you remove one or more rectifiers, the SMU generates a **Rectifier Communication Failure** alarm. If you confirm that the rectifiers will not be reinstalled, clear the configuration information about the removed rectifiers.

LCD Operation

Set **Delete Rectifier** to **Yes** on the LCD by navigating through **Main Menu** > **Running Control** > **Rectifier** > **Rectifier Group**.

4.2.7 Switching Between Equalized Charging and Float Charging

Context

You can manually switch between equalized charging and float charging when the system works in manual control mode.

Batteries keep in equalized charging status after equalized charging is manually enabled. When the float charging conditions are met (for example, time for equalized charging expires), the batteries automatically transfer to float charging status.

Parameters

Table 4-3 Parameter description for switching between equalized charging and float charging

Parameter	Description	Default Value	Value Range
Charge Control	Switches between equalized charging and float charging	Float Charging	• Float Charging • Equalized Charging

LCD Operation

To switch between equalized charging and float charging on the LCD, perform the following steps:

Step 1 Set **System Control Mode** to **Manual** on the LCD by navigating through **Main Menu** > **Running Control** > **Power System**.

Step 2 Set **Charge Control** to **Equalized Charging** or **Float Charging** on the LCD by navigating through **Main Menu** > **Running Control** > **Battery**.

----End

4.2.8 Powering On and Off Batteries

Context

NOTICE

When you disconnect the battery power supply, if an AC failure occurs, all loads will be powered off. Therefore, exercise caution with this operation.

You can manually power on or off batteries only in manual mode.

Parameters

Table 4-4 Battery power-on/off parameter description

Parameter	Description	Default Value	Value Range
BLVD Control	Powers on or off batteries	On	• On • Off

LCD Operation

Step 1 Set **System Control Mode** to **Manual** on the LCD by navigating through **Main Menu** > **Running Control** > **Power System**.

Step 2 Set **BLVD Control** to **On** or **Off** on the LCD by navigating through **Main Menu** > **Running Control** > **Battery**.

----End

4.2.9 Powering On and Off Loads

Context

NOTICE

Exercise caution when powering off loads, because doing so disconnects the power supply to loads.

You can manually power on or off loads when the system works in manual control mode.

Parameters

Table 4-5 Load power-on/off parameter description

Parameter	Description	Default Value	Value Range
LLVD Control	Powers on or off loads	On	• On • Off

LCD Operation

Step 1 Set **System Control Mode** to **Manual** on the LCD by navigating through **Main Menu** > **Running Control** > **Power System**.

Step 2 Set **LLVD1-4 Control** to **on** or **off** on the LCD by navigating through **Main Menu** > **Running Control** > **Power System**.

----End

4.2.10 Starting and Shutting Down Rectifiers

Context

NOTICE

Exercise caution when shutting down rectifiers, because doing so decreases maximum output power and may disconnect the power supply to loads.

You can manually start or shut down rectifiers when the system works in manual control mode.

Parameters

Table 4-6 Rectifier startup and shutdown parameter description

Parameter	Description	Default Value	Value Range
Turn on All Rectifiers	Starts all rectifiers.	Yes	Yes
Turn On/Off Rectifier	Starts or shuts down a single rectifier.	On	• On • Off

LCD Operation

Step 1 Set **System Control Mode** to **Manual** on the LCD by navigating through **Main Menu** > **Running Control** > **Power System**.

Step 2 Set **Turn on All Rects.** to **Yes** on the LCD by navigating through **Main Menu** > **Running Control** > **Rectifier** > **Rectifier Group**.

Step 3 Set **Turn on/off** to **Off** or **On** on the LCD by navigating through **Main Menu** > **Running Control** > **Rectifier** > **Rectifier N**.

----End

5 Remote Management

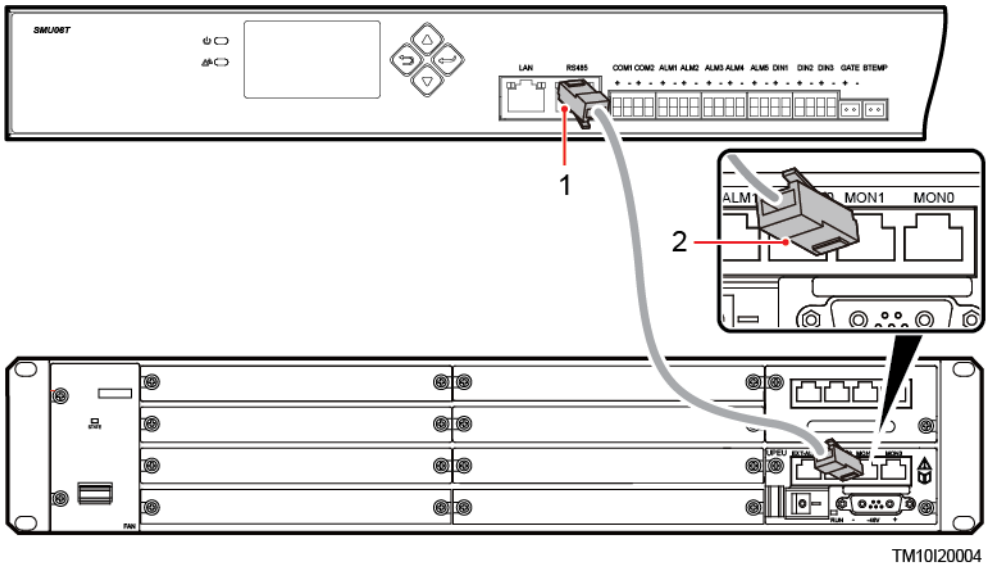
5.1 NetEco Management

5.1.1 BBU In-band Networking

Step 1 Connect one end of a network cable to the RS485 port on the SMU.

Step 2 Connect the other end to the MON0 or MON1 port on the BBU.

Figure 5-1 Connecting a communications cable



(1) RS485 Port	(2) MON1 Port

Step 3 Set the port mode, communications protocol type, baud rate, and communications address on the LCD.

Table 5-1 Setting communications parameters

Main Menu	Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Setting
Parameters Settings	Comm. Parameters	Serial Port	Northbound	Port Mode	Manual
				Protocol Type	M/S Protocol
		M/S Protocol	Baud Rate	-	9600
			Comm. Address	-	3

----End

5.1.2 Logging In to the NetEco

Procedure

Step 1 Enter **https: //NetEco IP address**: **port number for NetEco login** (for example, https://10.10.10.1:31943) in the address box of the browser and press **Enter**. The NetEco login page is displayed.

Figure 5-2 NetEco login page

Step 2 Enter the correct user name and password and click **Log In**.

NOTICE

To obtain the NetEco user name and password, contact the site or equipment room network administrator.

----End

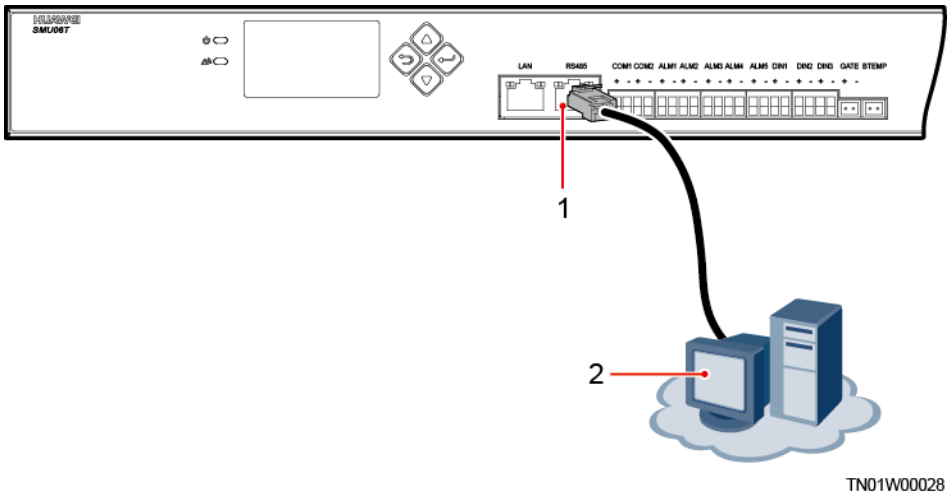
5.2 NMS Management over YDN1363 Protocol

5.2.1 Connecting a Communications Cable

Step 1 Connect one end of a network cable to the RS485 port on the SMU.

Step 2 Connect the other end to the corresponding port on the power and environment monitoring device, as shown in **Figure 5-3**.

Figure 5-3 Connecting a communications cable



(1) RS485 port on the SMU	(2) Power and environment network management system (NMS)

----End

5.2.2 Setting Parameters

Step 1 On the LCD, check that the port mode, protocol type, baud rate and communication address are the same as the default values in **Table 5-2**.

Table 5-2 Communications parameters

Main Menu	Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value
Parameters Settings	Comm. Parameters	Serial Port	North Bound	Port Mode	Manual
				Protocol Type	YDN1363 Protocol
		North YDN Protocol	Baud Rate	-	9600
			Comm. Address	-	1

----End

6 Maintenance and Troubleshooting

6.1 Identifying Faults

The following lists main faults that may occur on the SMU:

- The DC output is normal while the green indicator on the SMU is off.
- The SMU breaks down, fails to start, or its LCD or keyboard fails.
- With the alarm reporting enabled, the SMU does not report alarms when the power system is faulty.
- The SMU reports an alarm while the power system does not experience the fault.
- The SMU fails to communicate with the connected lower-level devices while the communications cables are correctly connected.
- Communication between the SMU and all rectifiers fails while both the rectifiers and the communications cables are normal.
- The SMU cannot detect the DC power distribution while the communications cables and DC power distribution are normal.
- Parameters cannot be set or operating information cannot be viewed on the SMU.

6.2 Component Replacement

For details about the component replacement of this SMU, see the user manual of the power system configured with this SMU.

6.2.1 Replacing an SMU06T (Cabinet Scenario)

6.2.1.1 Replacing an SMU06T Control Board

Prerequisites

- ESD gloves, cabinet door key, and maintenance toolkit are available.

- The new control board is intact.

Context

- The SMU is not hot swappable. You need to disconnect the power supply to the SMU, instead of the AC input to the power system.
- To avoid damaging the LCD flat cable, pull the cable gently.
- You are advised to replace the SMU06T with power on. If the mains supply is disconnected and the battery capacity is insufficient, power supply to the site may be disconnected.

Procedure

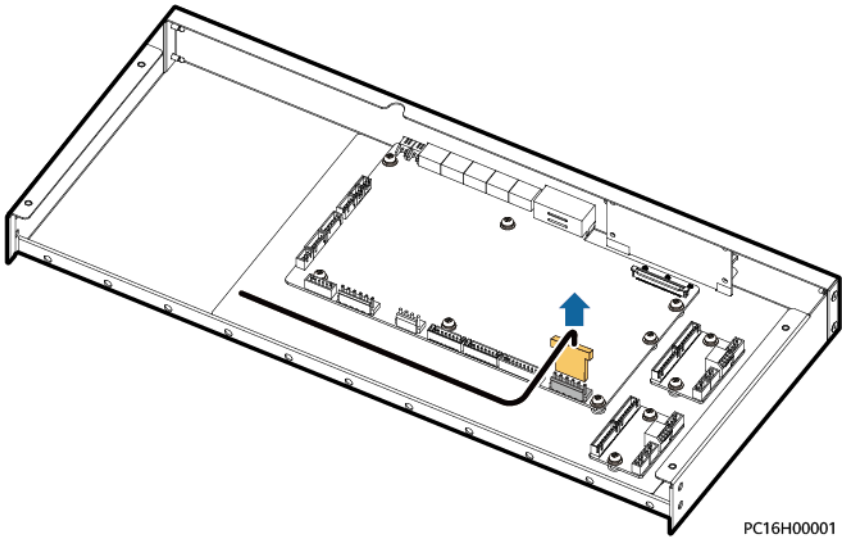
Step 1 Record the SMU parameters.

Step 2 Put on the ESD gloves.

Step 3 Record the positions of the signal cables connected to the SMU, and disconnect the signal cables.

Step 4 Disconnect the cables from the power input port (J53) on the SMU control board.

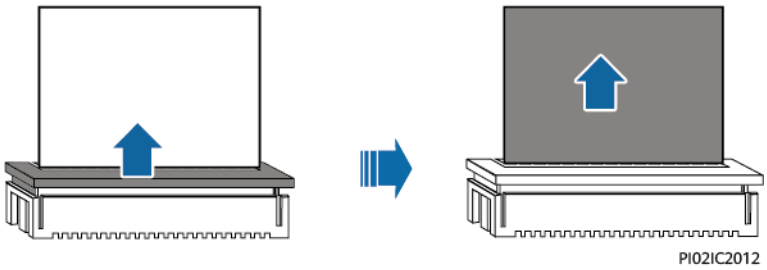
Figure 6-1 Disconnecting the input power cables



Step 5 Remove the LCD flat cable.

1. Hold the two sides of the locking latch on the LCD flat cable connector, and gently and levelly disconnect the locking latch.
2. Hold the LCD flat cable on its two sides and gently remove it from the connector.

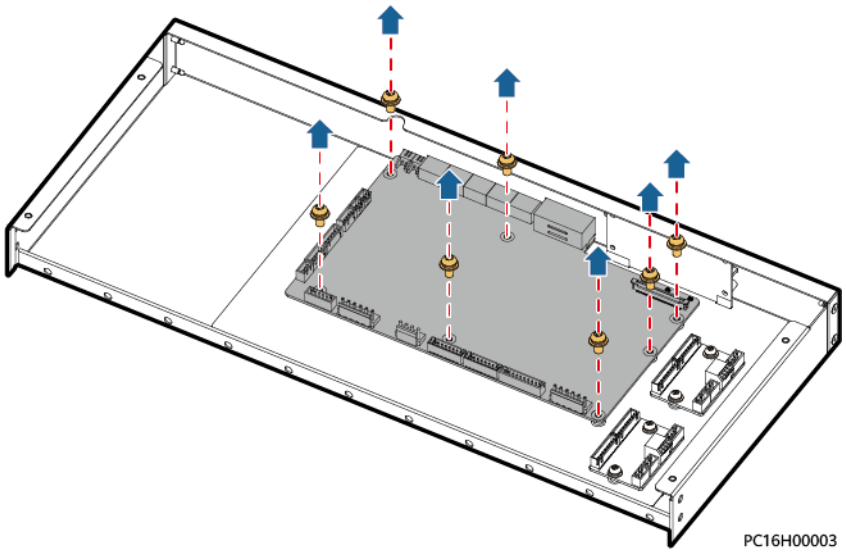
Figure 6-2 Removing the LCD flat cable



Step 6 Record the positions of communications and signal cables connected to the control board, label the cables, and disconnect them.

Step 7 Take out the SMU. Then unscrew and remove the control board.

Figure 6-3 Removing the control board



Step 8 Place the new control board and tighten the screws.

Step 9 Connect the communications and signal cables to the control board based on the recorded information.

Step 10 Install the LCD flat cable.

1. Gently and levelly insert the LCD flat cable into the connector.
2. Evenly and levelly press the locking latch on the connector to lock the flat cable.

Step 11 Connect the cables to the power input port (J53).

Step 12 Connect the signal cables to the SMU based on the recorded information.

Step 13 Remove the ESD gloves.

Step 14 Reset the SMU parameters.

----End

Follow-up Procedure

Pack the faulty component and send it to the local Huawei warehouse.

6.2.1.2 Replacing an SMU06T LCD

Prerequisites

- ESD gloves, cabinet door key, and maintenance toolkit are available.
- The new LCD is intact.

Context

- The SMU is not hot swappable. You need to disconnect the power supply to the SMU, instead of the AC input to the power system.
- To avoid damaging the LCD flat cable, pull the cable gently.
- You are advised to replace the SMU06T with power on. If the mains supply is disconnected and the battery capacity is insufficient, power supply to the site may be disconnected.

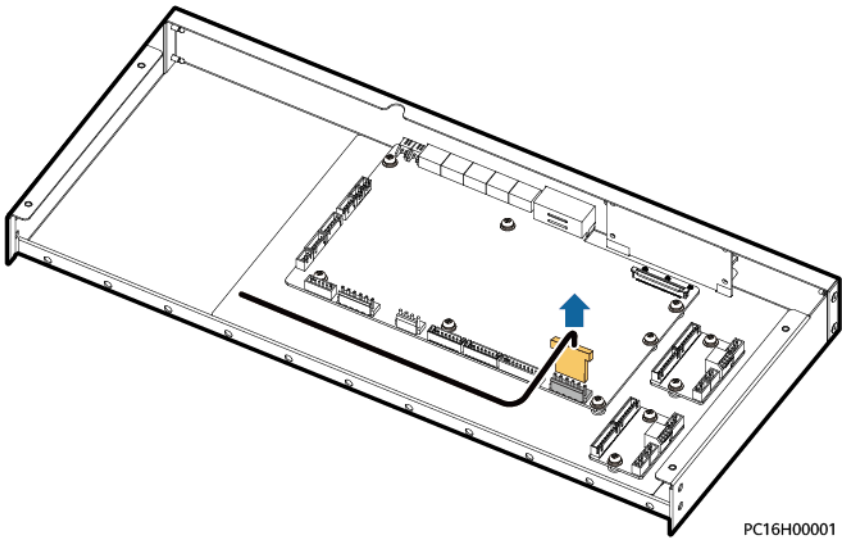
Procedure

Step 1 Put on the ESD gloves.

Step 2 Record the positions of the signal cables connected to the SMU, and disconnect the signal cables.

Step 3 Disconnect the cables from the power input port (J53) on the SMU control board, as shown in **Figure 6-4**.

Figure 6-4 Disconnecting the input power cables

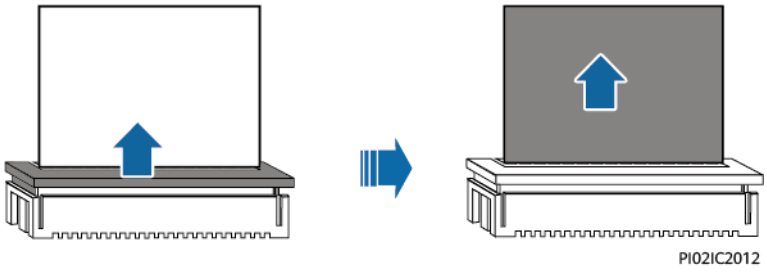


Step 4 Remove the LCD flat cable, as shown in **Figure 6-5**.

1. Hold the two sides of the locking latch on the LCD flat cable connector, and gently and levelly disconnect the locking latch.

2. Hold the LCD flat cable on its two sides and gently remove it from the connector.

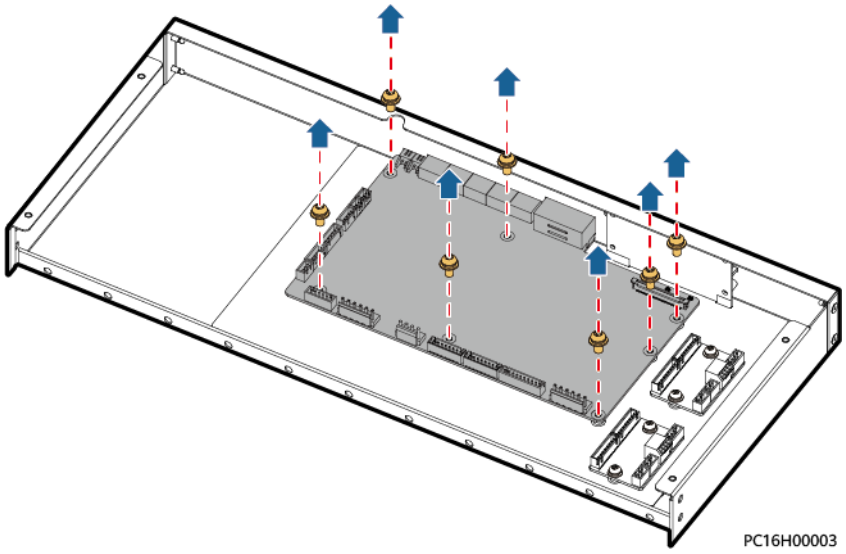
Figure 6-5 Removing the LCD flat cable



Step 5 Record the positions of communications and signal cables connected to the control board, label the cables, and disconnect them.

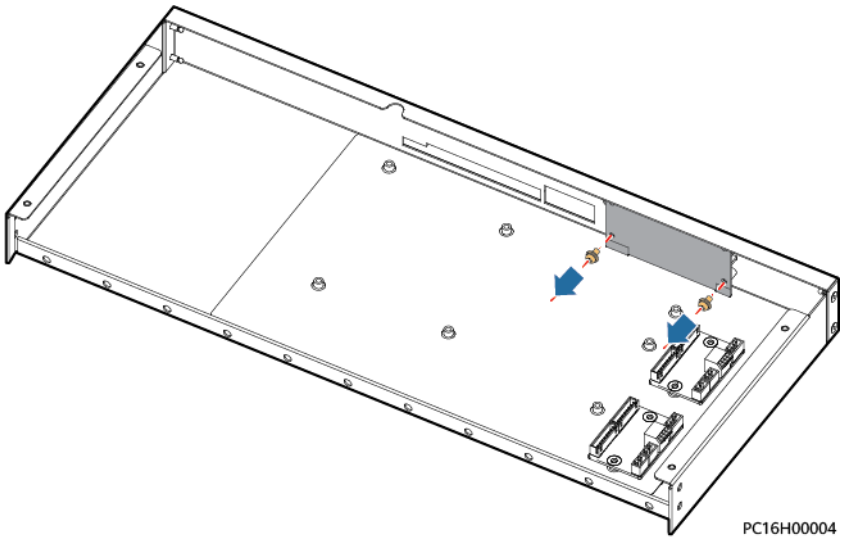
Step 6 Unscrew and remove the control board.

Figure 6-6 Removing the control board



Step 7 Unscrew and remove the LCD.

Figure 6-7 Removing the LCD



Step 8 Place the new LCD and tighten the screws.

Step 9 Reinstall the control board.

Step 10 Connect the communications and signal cables to the control board based on the recorded information.

Step 11 Install the flat cable.

1. Gently and levelly insert the LCD flat cable into the connector.
2. Evenly and levelly press the locking latch on the connector to lock the flat cable.

Step 12 Connect the cables to the power input port (J53).

Step 13 Connect the signal cables to the SMU based on the recorded information.

Step 14 Remove the ESD gloves.

----End

Follow-up Procedure

Pack the faulty component and send it to the local Huawei warehouse.

6.2.2 Replacing an SMU06T (Door-Mounted Scenario)

6.2.2.1 Replacing an SMU06T Main Control Board

Prerequisites

- The ESD wrist strap, protective gloves, ESD box or bag, cabinet door key, and required tools are available.
- The new control board is intact.

Context

- The SMU is not hot-swappable. Disconnect the input power cable from the SMU, instead of the AC input to the system.
- To avoid damaging the LCD flat cable, pull the cable gently.
- You are advised to replace the SMU06T with power on. If the mains supply is disconnected and the battery capacity is insufficient, power supply to the site may be disconnected.

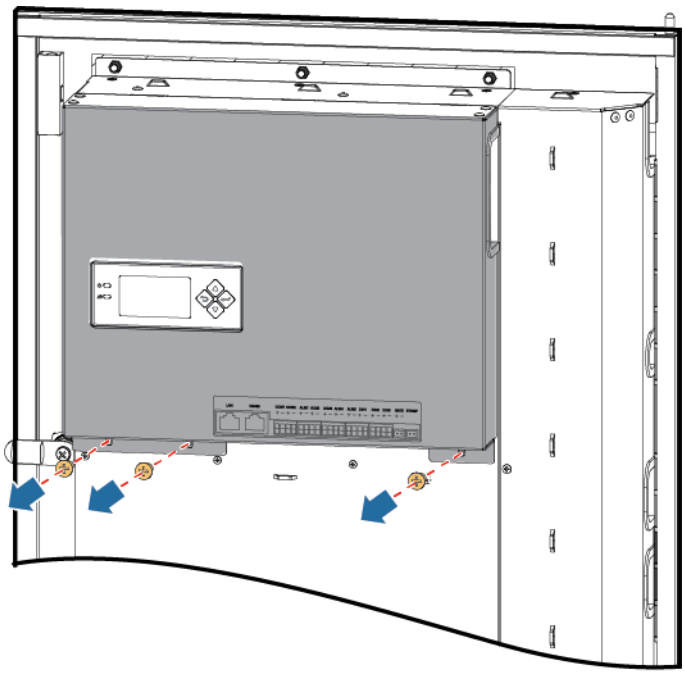
Procedure

Step 1 Connect the ground cable of the ESD wrist strap, and wear the ESD wrist strap and ESD gloves.

Step 2 Record the cable connection positions on the SMU and mark the cables to be removed.

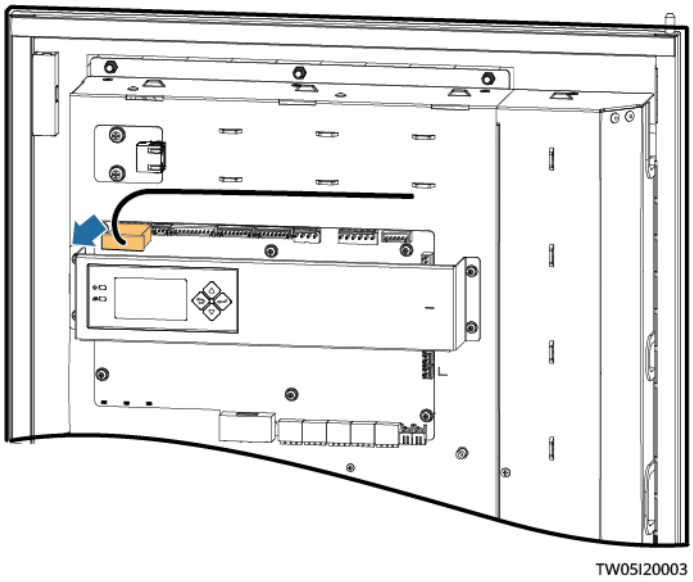
Step 3 Unscrew and remove the SMU cover.

Figure 6-8 Removing the cover



Step 4 Disconnect the cable from the power input port (J55).

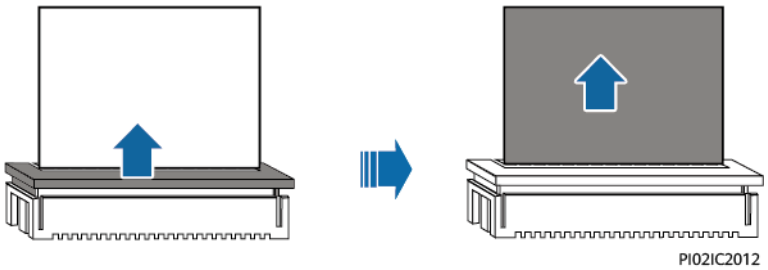
Figure 6-9 Disconnecting the cable from the power input port (J55)



Step 5 Remove the LCD flat cable.

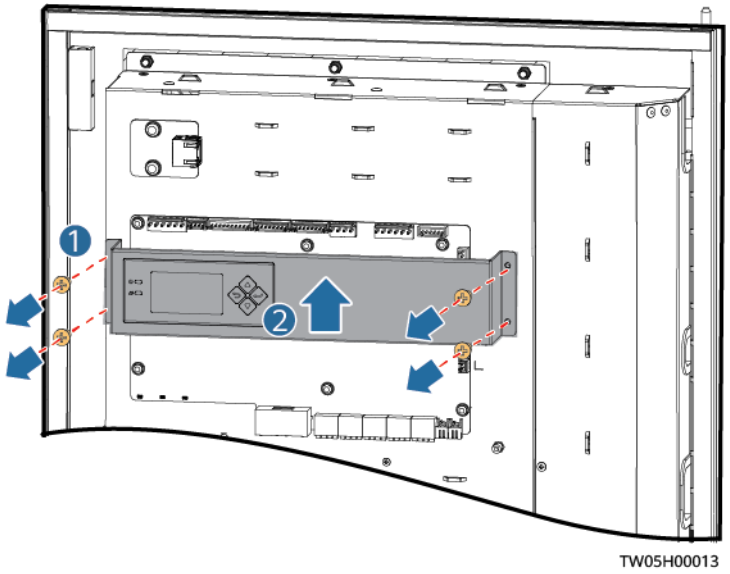
1. Hold the two sides of the locking latch on the LCD flat cable connector, and gently and levelly disconnect the locking latch.
2. Hold the LCD flat cable on its two sides and gently remove it from the connector.

Figure 6-10 Removing the LCD flat cable



Step 6 Unscrew the LCD panel and move the panel upward.

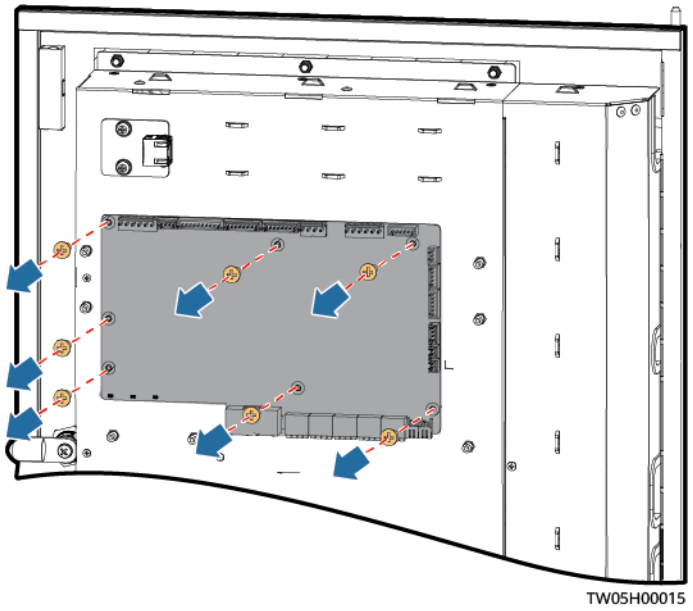
Figure 6-11 Removing the LCD panel



Step 7 Record the connection positions of the communications cable and signal cable on the main control board and remove the cables.

Step 8 Unscrew and remove the main control board.

Figure 6-12 Removing the main control board



Step 9 Place the new main control board and tighten the screws.

Step 10 Reconnect the communications cable and signal cable to the new main control board according to the recorded information.

Step 11 Reinstall the LCD panel.

Step 12 Install the LCD flat cable.

1. Gently and levelly insert the LCD flat cable into the connector.
2. Evenly and levelly press the locking latch on the connector to lock the flat cable.

Step 13 Connect the cable to the power input port (J55).

Step 14 Reinstall the SMU cover.

Step 15 Reconnect the cables to the SMU according to the recorded information.

Step 16 Reset the SMU parameters.

Step 17 Disconnect the ground cable of the ESD wrist strap, and remove the ESD wrist strap and ESD gloves.

----End

Follow-up Procedure

- Check that the monitoring function is proper and that alarms can be properly reported.
- Pack the faulty component and send it to the local Huawei warehouse.

6.2.2.2 Replacing an SMU06T LCD

Prerequisites

- The ESD wrist strap, protective gloves, ESD box or bag, cabinet door key, and required tools are available.
- The new LCD is intact.

Context

- The SMU is not hot-swappable. Disconnect the input power cable from the SMU, instead of the AC input to the system.
- To avoid damaging the LCD flat cable, pull the cable gently.
- You are advised to replace the SMU06T with power on. If the mains supply is disconnected and the battery capacity is insufficient, power supply to the site may be disconnected.

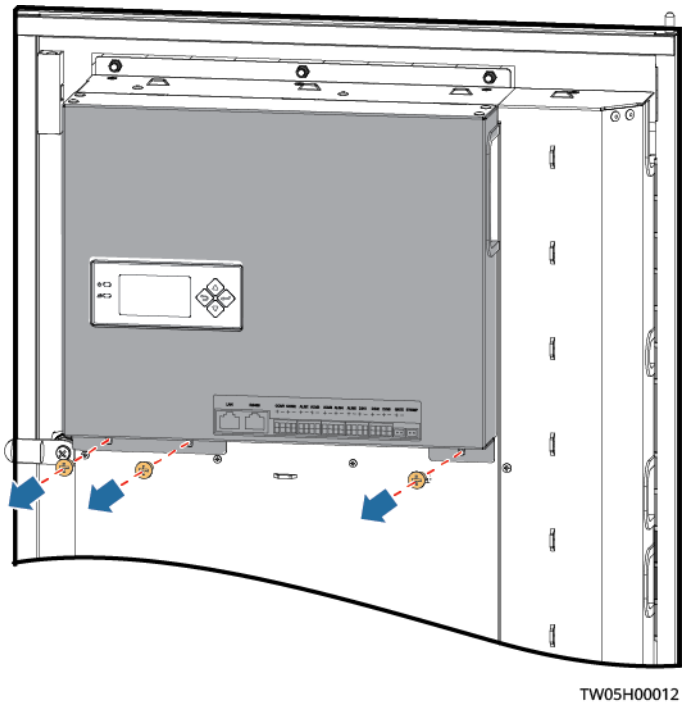
Procedure

Step 1 Connect the ground cable of the ESD wrist strap, and wear the ESD wrist strap and ESD gloves.

Step 2 Record the cable connection positions on the SMU and mark the cables to be removed.

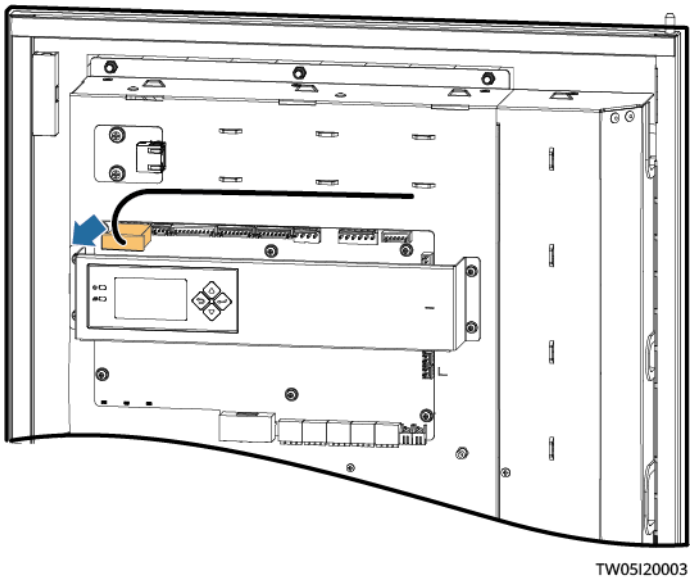
Step 3 Unscrew and remove the SMU cover.

Figure 6-13 Remove the cover.



Step 4 Disconnect the cable from the power input port (J55).

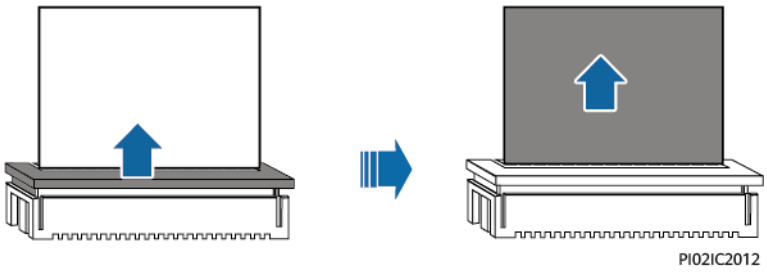
Figure 6-14 Disconnecting the input power cable



Step 5 Remove the LCD flat cable.

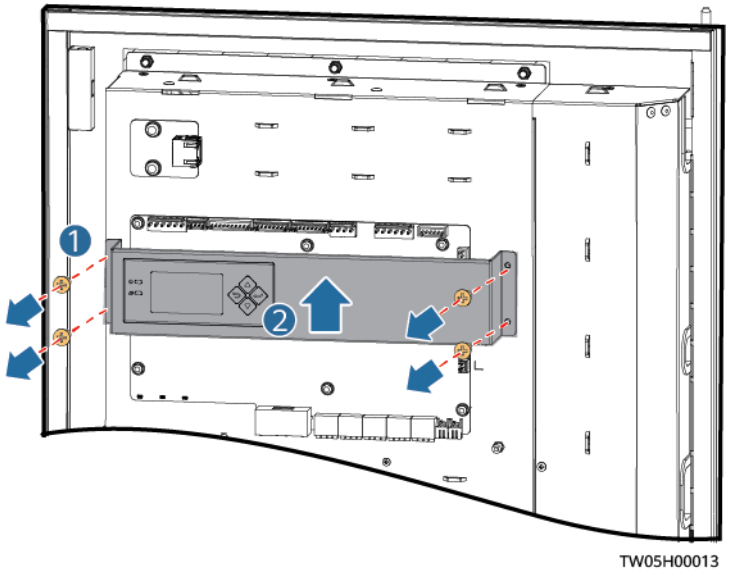
1. Hold the two sides of the locking latch on the LCD flat cable connector, and gently and levelly disconnect the locking latch.
2. Hold the LCD flat cable on its two sides and gently remove it from the connector.

Figure 6-15 Removing the LCD flat cable



Step 6 Unscrew the LCD panel and move the panel upward.

Figure 6-16 Removing the LCD panel



Step 7 Remove the old LCD from the LCD panel.

Step 8 Install a new LCD onto the LCD panel.

Step 9 Reinstall the LCD panel and tighten the screws.

Step 10 Install the LCD flat cable.

1. Gently and levelly insert the LCD flat cable into the connector.
2. Evenly and levelly press the locking latch on the connector to lock the flat cable.

Step 11 Connect the cable to the power input port (J55).

Step 12 Reinstall the SMU cover.

Step 13 Reconnect the cables to the SMU according to the recorded information.

Step 14 Disconnect the ground cable of the ESD wrist strap, and remove the ESD wrist strap and ESD gloves.

----End

Follow-up Procedure

- Check that the LCD can display information properly and that alarms can be reported properly.
- Pack the faulty component and send it to the local Huawei warehouse.

6.2.2.3 Replacing an SMU06T Electronic Label

Prerequisites

- The ESD wrist strap, protective gloves, ESD box or bag, cabinet door key, and required tools are available.
- The new electronic label is intact.

Context

- The SMU is not hot-swappable. Disconnect the input power cable from the SMU, instead of the AC input to the system.
- To avoid damaging the LCD flat cable, pull the cable gently.
- You are advised to replace the SMU06T with power on. If the mains supply is disconnected and the battery capacity is insufficient, power supply to the site may be disconnected.

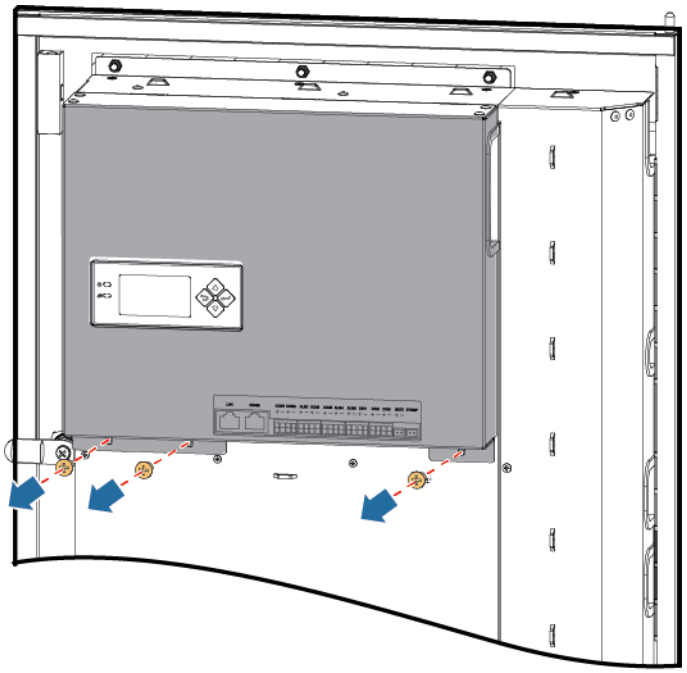
Procedure

Step 1 Connect the ground cable of the ESD wrist strap, and wear the ESD wrist strap and ESD gloves.

Step 2 Record the cable connection positions on the SMU and mark the cables to be removed.

Step 3 Unscrew and remove the SMU cover.

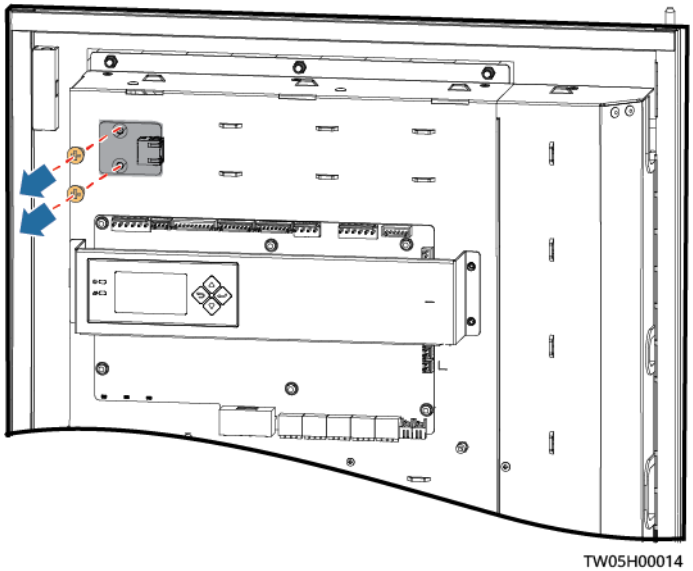
Figure 6-17 Removing the cover



Step 4 Record the cable connection positions on the electronic label, label the cables, and remove the cables.

Step 5 Unscrew and remove the electronic label.

Figure 6-18 Removing the electronic label



Step 6 Place the new electronic label and tighten the screws to install the new electronic label.

Step 7 Reconnect cables to the electronic label according to the recorded information.

Step 8 Reinstall the SMU cover.

Step 9 Reconnect the cables to the SMU according to the recorded information.

Step 10 Reset the SMU parameters.

Step 11 Disconnect the ground cable of the ESD wrist strap, and remove the ESD wrist strap and ESD gloves.

----End

A Technical Specifications

Table A-1 SMU06T technicalspecifications

Category	Item	Specifications
Environmental specifications	Operating temperature	–40°C to +70°C **NOTE** The LCD on the SMU can properly operate at –20°C to +70°C and remains intact below –20°C.
	Storage temperature	–40°C to +70°C
	Relative humidity	5% RH to 95% RH (non-condensing)
	Altitude	0 to 4000 m: When the altitude ranges from 2000 m and 4000 m, the operating temperature is derated by 1°C for each additional 200 m.
	Others	Free from conductive dust, corrosive gas, or potential explosion risks.
Power input	Operating voltage	–36 V DC to –72 V DC (rated voltage: –48 V DC)
EMC	Conducted emission (CE)	EN55022 CLASS A
	Radiated interference	EN55022 CLASS A

Category	Item	Specifications
	Electrostatic disturbance	• For the shell: contact discharge: 6 kV; air discharge: 8 kV (criterion B). The shell has been powered on before the test. • For the conductor in the signal port: contact discharge: 2 kV (criterion R). The conductor has been powered on before the test.
	Transmission anti-interference	Power port: 10 V (criterion A); signal port: 3 V (criterion A)
	Radiation disturbance	10 V/m, criterion A
Surge	COM port	Differential mode: 250 A; common mode: 250 A
	RS485/RS232 port	Differential mode: 250 A; common mode: 250 A (criterion B)
	Dry contact input ports	DIN1 to DIN3: differential mode: 1 kV; common mode: 2 kV
	Dry contact output ports	ALM1-ALM5: differential mode: 1 kV; common mode: 2 kV
	Battery temperature sensor port	Differential mode: 500 V; common mode: 1000 V
	DC port	Power input port: differential mode: 2 kV; common mode: 4 kV
Safety regulation certification	-	Main components of the SMU and the printed circuit board (PCB) comply with IEC60950-1, EN60950-1 and GB4943.
Reliability specifications	Mean time between failures (MTBF)	≥ 300,000 hours
	Annual repair rate	< 1%
	Service life	> 10 years

B LCD Menu Hierarchy

NOTE

- The menu hierarchy and parameter display depend on the system type, parameter settings, and device connections.
- The # means that the menu is available only when the associated equipment is connected or associated parameter is set.

B.1 Running Information

Table B-1 Running Information menu hierarchy

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu
Power System	Basic Information	System Voltage	-
		Total Load Current	-
		Phase L1 Voltage	-
		Phase L2 Voltage	-
		Phase L3 Voltage	-
		Phase L1 Current	-
		Phase L2 Current	-
		Phase L3 Current	-
		L1 Curr Unb Rate	-
		L2 Curr Unb Rate	-
		L3 Curr Unb Rate	-
		Total Active Power	-
		L1 Active Power	-
		L2 Active Power	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu
		L3 Active Power	-
		AC Frequency	-
	Shared Load	Common Total Consump	-
		Common Total Current	-
		Comm Cons Last Mon.	-
	User n Load	Usern Total Consump	-
		Usern Voltage	-
		Usern Total Cur	-
		Usern Curr Mnth Elec	-
		Usern Month Cons Prop	-
		Usern Curr Prop	-
		Usern Cons Last Mon.	-
Rectifier	Rectifier Group	Total DC Curr	-
		Total Power	-
		Load Usage Rate	-
		Total AC Input Power	-
	Rectifier n	DC Output Volt	-
		DC Output Curr	-
		DC Output Power	-
		AC Input Voltage	-
		Run State	-
		Temperature	-
		Hardware Version	-
		Software Version	-
		Barcode	-
SSU	SSU Group	Total Out Energy	-
		Total Output Curr	-
	SSU n	Output Volt	-
		Output Curr	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu
		Input Volt	-
		No/Off Status	-
		SW Version	-
		HW Version	-
Battery **NOTE** This parameter is available only when lead-acid batteries are configured.	Battery Group	Battery Status	-
		Total Batt. Current	-
		Total Rated Cap.	-
		Remain Cap. Percent	-
		Backup Time	-
		Cur. Limiting Status	-
		Test Status	-
		Battery Temp. 1	-
	Battery String n	Middle Voltage	-
	Battery Test Records	-	-
Cell Detector Group	Batt. Cell DetectorN	Batt. Detector Addr.	-
		Batt.n Celln Volt.	-
AIM n	AC Frequency	-	-
	Phase L1 Voltage	-	-
	Phase L2 Voltage	-	-
	Phase L3 Voltage	-	-
	Phase L1 Current	-	-
	Phase L2 Current	-	-
	Phase L3 Current	-	-
	Active Power	-	-
	Total Power Factor	-	-
	Active Electricity	-	-
	SoftWare Version	-	-
	Hardware Version	-	-
	BootLoader Version	-	-
Equip Int AC.n#	A/C Status	-	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu
	Compressor Status	-	-
	Indoor Vent Temp.	-	-
	External Temp.	-	-
	Internal Fan Speed	-	-
	External Fan Speed	-	-
	A/C Runtime	-	-
	Compressor Runtime	-	-
	Device Model	-	-
	A/C Software Version	-	-
	DC Power	-	-
	Input Volt.	-	-
	Running Current	-	-
	Comm. Address	-	-
	A/C Name	-	-
Batt Int AC.n#	A/C Status	-	-
	Compressor Status	-	-
	Indoor Vent Temp.	-	-
	External Temp.	-	-
	Internal Fan Speed	-	-
	External Fan Speed	-	-
	A/C Runtime	-	-
	Compressor Runtime	-	-
	Device Model	-	-
	A/C Software Version	-	-
	Comm. Address	-	-
	A/C Name	-	-
	System Time	-	-
DCDU#	DCDU Dev n	Basic Information	Major Current
			Minor Current
			Ambient Temperature

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu
			Ambient Humidity
			Outdoor Amb. TS
			Indoor Vent TS
			Temp1
			Temp2
		A/C Info	A/C Status
			A/C Compressor Stat.
			A/C Indoor Vent Temp
			A/C External Temp.
			A/C Inter. Fan Speed
			A/C Exter. Fan Speed
			A/C Runtime
			A/C Compress Runtime
		Fan Info	Fan n Speed
		Asset Info	Software Version
			Hardware Version
DMU#	DMU n	Equip Model	-
		Comm Status	-
		DC Output Voltage	-
		Load n Voltage	-
		Load Current	-
		Load n Current	-
		Total Load Power	-
		Software Version	-
		Hardware Version	-
		Total Load Energy Co	-
Temp. Control Info.#	Temp. Control Group	Indoor Vent Temp.	-
		Outdoor Amb. Temp.	-
		Pwr Cab. Vent Temp.	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu
		Equip Cab. Vent Temp.	-
	Fan Group	Fan 1 Speed	-
Historical Alarm	-	-	-
Performance	Mains Pwr Cons	-	-
	D.G.Output Power	-	-
	DC Load Pwr Cons	-	-
	Discharge Capacity	-	-
	Solar Energy Supply	-	-
	Usr n Total Cons Prop	-	-
	User n Total Consump	-	-

B.2 Setting Wizard

Table B-2 Setting Wizard menu hierarchy

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
Power System	Near Maint Net Port	-	-	Disable	Enable, Disable
Battery Parameters **NOTE** This parameter is available only when lead-acid batteries are configured.	Battery n Connected	-	-	Yes/No	Yes, No
	Single-String Cap.	-	-	150 Ah	5-10000
	Shunt Max. Volt.	-	-	25 mV	5-150
	Shunt Max. Cur.	-	-	300 A	5-3000
Date and Time	Date and Time	-	-	-	-
Network Parameters	Local Port IP	-	-	192.168.0.10	-
	Local Subnet Mask	-	-	255.255.255.0	-
	Local Default GW	-	-	192.168.0.1	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Local NetEco Prim IP	-	-	192.168.0.11	-
	Local NetEco BAK IP	-	-	192.168.0.10	-
	Local NetEco pORT	-	-	31220	1-65535

B.3 Parameters Settings

Table B-3 Parameters Settings menu hierarchy

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
Power System	Basic Parameters	AC Type	-	Three Phases	Three Phases, Single Phase, Three Live Lines
		LLVDn Enable	-	Yes	Yes, No
		Branch Name n	-	None	-
		Mobile DG Auto-Aense	-	Disable	Enable, Disable
		Battery Type **NOTE** This parameter is displayed only when **Hi temp batt sensing** is set to **No**.	-	Lead Acid Battery	Lead Acid Battery, TCB
		TCB auto-sensing **NOTE** This parameter is displayed based on the power system type.	-	Yes	Yes, No
	LLVD Parameters	LLVDn Mode	-	Time Mode	Voltage Mode, Power Mode, Time Mode

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	NOTE This parameter is valid when **LLVDn Enable** is set to **Yes**.	LLVDn Voltage **NOTE** This parameter is valid when **LLVDn Mode** is set to **Voltage Mode**.	-	44.0 V	35.0-56.0
		LLVDn Con. Volt.	-	51.5 V	37.0-58.0
		LLVDn Power **NOTE** This parameter is valid when **LLVDn Mode** is set to **Power Mode**.	-	10.000kWh	0.000-65.000
		LLVDn Time **NOTE** This parameter is valid when **LLVDn Mode** is set to **Time Mode**.	-	360 Min-	5-1000
	LLVDn Ex Parameters	Timed Enable	-	Disable	Enable, Disable
		Start Time n **NOTE** This parameter is valid when **Timed Enable** is set to **Enable**.	-	00:00:00	-
		Time Duration n **NOTE** This parameter is valid when **Timed Enable** is set to **Enable**.	-	0Min	0-1440

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
		Exempt Period En.	-	Disable	Enable, Disable
		Exempt Start Time n **NOTE** This parameter is valid when **Exempt Period En.** is set to **Enable**.	-	00:00:00	-
		Exempt Duration n **NOTE** This parameter is valid when **Exempt Period En.** is set to **Enable**.	-	0Min	0-1440
	AC&DC Volt. Para.	AC Overvolt. Thres.	-	280 V	60-300
		AC Undervolt. Thres.	-	180 V	60-300
		DC Overvolt. Thres.	-	58.0 V	53.0-60.0
		DC Undervolt. Thres.	-	45.0 V	35.0-57.0
		AC Overcurr Thres	-	110 A	10-250
		AC High Fre. Thres.	-	65 Hz	0-100
		AC Low Fre. Thres.	-	45 Hz	0-100
	Sensor Config. Para.	DC SPD	-	Yes	Yes, None
		AC SPD	-	Yes	Yes, None
		Door Sensor	-	None	Yes, None
		Batt. Temp. Sensor 1	-	Yes	Yes, None
	Stagger Electricity	Function Enable	-	No	Yes, No

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
		Minimum Capacity **NOTE** This parameter is valid when **Function Enable** is set to **Yes**.	-	70%	50-95
		High Ele Price On n **NOTE** This parameter is valid when **Function Enable** is set to **Yes**.	-	21:00:00	HH:MM:SS
		High Ele Price Off n **NOTE** This parameter is valid when **Function Enable** is set to **Yes**.	-	21:00:00	HH:MM:SS
		Low Ele Price On n **NOTE** This parameter is valid when **Function Enable** is set to **Yes**.	-	00:00:00	HH:MM:SS
		Low Ele Price Off n **NOTE** This parameter is valid when **Function Enable** is set to **Yes**.	-	00:00:00	HH:MM:SS

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
		Elc Price Save **NOTE** This parameter is valid when **Function Enable** is set to **Yes**.	-	Yes	Yes, No
		Stage Cutoff Volt **NOTE** This parameter is valid when **Function Enable** is set to **Yes**.	-	48.0 V	45.0-53.0
	Intelligent Peak Cli	Enb AC Peak Shave	-	Enable	Disable, Enable
		Breaker Rated Curr **NOTE** This parameter is valid when **Function Enable** is set to **Enable**.	-	1000 A	1-1000
		Tl Input Rated Pow **NOTE** This parameter is valid when **Function Enable** is set to **Enable**.	-	200.0 kW	1.0-1000.0
		AC Derating Coef **NOTE** This parameter is valid when **Function Enable** is set to **Enable**.	-	0.8	0.0-1.0

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
		AC Rated Phase Volt **NOTE** This parameter is valid when **Function Enable** is set to **Enable**.	-	220.0V	60.0-300.0
		LLVDn in Peak Shave **NOTE** This parameter is valid when **Function Enable** is set to **Enable**.	-	Enable	Disable, Enable
		Peak Shave LLVD POH **NOTE** This parameter is valid when **Function Enable** is set to **Enable**.	-	20%	10-85
	Other Parameters	Buzzer Enable	-	No	Yes, No
		Buzzer Alm. Duration **NOTE** This parameter is valid when **Buzzer Enable** is set to **Yes**.	-	10 Min	1-100
		YDN Protocol Version	-	None	V1.0, V2.1, V2.0, None
Rectifier Group	Rectifier Protect Vol.	-	-	59.5 V	56.0-60.5
	Sel Start Int	-	-	0s	0-20
	High Rect Remain Cap	-	-	5%	0-150
	Low Rect Remain Cap	-	-	75%	0-150

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Max. Limited Current	-	-	121%	10-121
	Default Output Volt	-	-	53.5 V	48-58
	WALK-IN Enable	-	-	No	Yes, No
	WALK-IN Time **NOTE** This parameter is valid when **WALK-IN Enable** is set to **Yes**.	-	-	8s	8-200
Energy Saving	Enb Hibernation	-	-	Yes	Yes, No
	Hibernation Mode **NOTE** This parameter is valid when **Hibernation Enable** is set to **Yes**.	-	-	Time Mode	Intelligent Mode, High Efficiency Mode, Time Mode
	Hiber Without Batt **NOTE** This parameter is valid when **Hibernation Enable** is set to **Yes**.	-	-	No	Yes, No
	Min Rdnt Coef **NOTE** This parameter is valid when **Hibernation Enable** is set to **Yes**.	-	-	0.20	0.05-1.00

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Min Work Rect Qty **NOTE** This parameter is valid when **Hibernation Enable** is set to **Yes**.	-	-	1	1-100
	Best Efficiency **NOTE** This parameter is valid when **Hibernation Enable** is set to **Yes**.	-	-	55%	10-100
	Hiber Stop Duration **NOTE** This parameter is valid when **Hibernation Enable** is set to **Yes**.	-	-	72.0 h	0.5-168.0
	Rotation Period **NOTE** This parameter is valid when **Hibernation Enable** is set to **Yes**.	-	-	7 Day	1-365
	Phase Balance **NOTE** This parameter is valid when **Hibernation Enable** is set to **Yes**.	-	-	Disable	Relative Balance, Absolute Balance, Disable
SSU	Solar BC Enb	-	-	Enable	Enable, Disable
	Solar BC Time	-	-	12 h	1-24
	Inc Volt than PSU	-	-	0.5 V	0.2-1.0

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
Photovoltaic	PV Module Quantity	-	-	24 PCS	1-1000
	PV Module Power	-	-	180 W	50-400
	PV Mod Miss Alm Asso	-	-	No	No, DIN1-3
Battery **NOTE** This parameter is available only when lead-acid batteries are configured.	Basic Parameters	Battery n Connected	-	Yes/No	Yes, No
		Single-String Cap.	-	300 Ah	5-10000
		FC Voltage	-	53.5 V	42.0-58.0 **NOTE** When temperature compensation is effective, the valid voltage range is 51.5–55.5 V.
		Boose Charge Voltarge	-	56.4 V	42.0-58.0
		Charge Limit Coef.	-	0.15 C10	0.05-0.5
		BLVD Enable	-	Yes	Yes, No
		Hibernation Enable	-	No	Yes, No

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Temp. Comp. Para.	TC Coefficient	-	80 mV/degC	0-500 **NOTE** This parameter is: For 48 V battery string, the amplitude of the battery float charge voltage that needs to be adjusted for each change of 1°C. Set this parameter based on the actual specifications of the battery. For example, if the temperature compensation coefficient of each 2 V battery is 3.33 mV/degC and each 48 V battery string comprises 24 2 V batteries, then set this parameter to 80 mV/degC, which is calculated as follows: 3.33 x 24 = 80.
		Nominal Temperature	-	25 degC	5-45
	BLVD Parameters	BLVD Voltage	-	43.2 V	35.0-56.0
		BLVD Con. Volt.	-	51.5 V	37.0-58.0
	Temp. Prot. Para.	Very HT Prot. Mode	-	Reduce DC Voltage	Reduce DC Voltage, Disable, Disconnect Battery
		Very HT Prot. Volt.	-	51.5 V	42.0-53.0

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
		HT Alarm Thres.	-	50 degC	25-80
		Very HT Alarm Thres.	-	53 degC	25-80
		LT Alarm Thres.	-	-10 degC	-20-20
	Charge Parameters	Auto. EC Enable	-	Yes	Yes, No
		FC-EC Cur. Coef.	-	0.05 C	0.01-0.25
		FC-EC Cur. Duration	-	30 Min	2-1440
		FC-EC Cap. Percent	-	70%	50-100
		Sche. EC Enable	-	Yes	Yes, No
		Sche. EC Interval	-	30 Day	1-365
		Sche. EC Duration	-	9 h	1-24
		EC-FC Cur. Coef.	-	0.01 C10	0.01-0.25
		EC-FC Cur. Duration	-	30 Min	2-540
		EC Max Duration	-	16 h	5-48
		Mains Recovery EC En	-	No	Yes, No
		AC Fail Duration **NOTE** This parameter is valid when **Mains Recovery EC En** is set to **Yes**.	-	10 Min	0-30

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Standard Test Enable	Sche. Test Enable	-	No	Yes, No
		Sche. Test St. Time **NOTE** This parameter is valid when **Sche. Test Enable** is set to **Yes**.	-	21:00:00	HH:MM:SS
		Sche. Test Period **NOTE** This parameter is valid when **Sche. Test Enable** is set to **Yes**.	-	90 Day	2-999
		Pre-EC Enable	-	Yes	Yes, No
		Test End Voltage	-	46.0 V	44.2-53.0
		Test End Capacity	-	20%	0-99
		Test End Time	-	480 Min	1-6000
		Test End Temperature	-	5degC	-5-15
	Short Test Para.	Short Test Enable	-	Yes	Yes, No
		Short Test Period **NOTE** This parameter is valid when **Short Test Enable** is set to **Yes**.	-	30 Day	1-360
		Short Test Time	-	5 Min	1-240
		Short Test End Volt.	-	45.0 V	44.2-53.0

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Alarm Parameters	Overcur. Alm. Thres.	-	0.25 C10	0.05-1.00
		Volt. Imb. Thres.	-	10%	5-30
	Other Parameters	Installation Time	-	2010-01-01	-
Cell Detector Group	Batt. Cell Detector n#	Cell Type	-	2V	2V, 6V, 12V
		Detected Batt String	-	1	1-4
		Imb. Alm. Thres.	-	20%	5-30
AIM n	AC Rated Frequency	-	-	50	50,60
	AC OV Thres.	-	-	280 V	60-300
	AC UV Thres.	-	-	180 V	60-300
	AC Source	-	-	Other	Other, Mains
Temp. Control Group#	Indoor Vent TS	-	-	Yes	Yes, No
	Outdoor Amb. TS	-	-	No	Yes, No
Equip Int AC.n#	Comp. Start Temp.	-	-	28 degC	20-50
	Comp. Hysteresis	-	-	3 degC	1-10
	HT Alarm Thres.	-	-	25 degC	25-80
	Heater Startup Temp.	-	-	0 degC	-40-15
	Heater Hysteresis	-	-	3 degC	1-15
	AC Otg Energy Saving	-	-	No	Yes, No

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Start Temp(AC Fail) **NOTE** This parameter is valid when **AC Otg Energy Saving** is set to **Yes**.	-	-	45 degC	40-45
	Stop Temp(AC Fail) **NOTE** This parameter is valid when **AC Otg Energy Saving** is set to **Yes**.	-	-	37 degC	35-40
	Cabinet Name	-	-	-	-
Batt Int AC.n#	Comp. Start Temp.	-	-	28 degC	20-50
	Comp. Hysteresis	-	-	3 degC	1-10
	HT Alarm Thres.	-	-	25 degC	25-80
	Heater Startup Temp.	-	-	0 degC	-40-15
	Heater Hysteresis	-	-	3 degC	1-15
	AC Otg Energy Saving	-	-	No	Yes, No
	Start Temp(AC Fail) **NOTE** This parameter is valid when **AC Otg Energy Saving** is set to **Yes**.	-	-	45 degC	40-45

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Stop Temp(AC Fail) **NOTE** This parameter is valid when **AC Otg Energy Saving** is set to **Yes**.	-	-	37 degC	35-40
	Cabinet Name	-	-	-	-
DCDU#	DCDU Group	TC Mode	-	Standard mode	Standard mode/Mute mode/Energy saving mode
		Backup Mode enable	-	Disable	Disable/ Enable
	DCDU n	Basic Information	Amb. HT Thres.	55degC	25-80
			Amb. LT Thres.	-20degC	-20-20
			Amb. HH Thres.	95%	0-100
			Amb. LH Thres.	5%	0-100
			Heater Alm DIN Conf	None	None, DIN1-6
		Sensor Config	Door Sensor	Yes	Yes/None
			Water Sensor	Yes	Yes/None
			Smoke Sensor	Yes	Yes/None
			Ambient Temp. Sensor	Yes	Yes/None
			Ambient Humi. Sensor	Yes	Yes/None
			Indoor Vent TS	Yes	Yes/None
			Outdoor Amb. TS	Yes	Yes/None
			Temp1 Sensor	Yes	Yes/None

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
			Temp2 Sensor	Yes	Yes/None
		A/C Config	Comp. Start Temp.	28 degC	20-50
			HT Alarm Thres.	50 degC	25-80
Alarm Parameters	DI Dry Contact Para.	DIN1 Alm. Cond.	-	Close	Close, Open
		DIN2 Alm. Cond.	-	Close	Close, Open
		DIN3 Alm. Cond.	-	Close	Close, Open
	DO Dry Contact Para.	ALM1 Alarm Action	-	Close	Close, Open
		ALM2 Alarm Action	-	Close	Close, Open
		ALM3 Alarm Action	-	Close	Close, Open
		ALM4 Alarm Action	-	Close	Close, Open
		ALM5 Alarm Action	-	Close	Close, Open
	Alarm Config **NOTE** Parameters are dynamically displayed depending on connected devices. The listed parameters are for reference only.	Power System	-	-	-
		Rectifier	-	-	-
		Rectifier Group	-	-	-
		SSU	-	-	-
		SSU Group	-	-	-
		PV Module	-	-	-
		Battery Group	-	-	-
		Battery String	-	-	-
		Batt. Cell Detector#	-	-	-
		AIM#	-	-	-
		Fan Group#	-	-	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
		DCDU#	-	-	-
		DCDU Group#	-	-	-
		Temp. Control#	-	-	-
		Temp. Control Group#	-	-	-
	Alarm Level DO Para.	Cri. Alm. Asso. DO	-	No	No, ALM1–ALM5
		Major Alm. Asso. DO	-	No	No, ALM1–ALM5
		Minor Alm. Asso. DO	-	No	No, ALM1–ALM5
		Warn. Alm. Asso. DO	-	No	No, ALM1–ALM5
	Clear ALM Asso.	Clear ALM1 Asso.	-	Yes	Yes
		Clear ALM2 Asso.	-	Yes	Yes
		Clear ALM3 Asso.	-	Yes	Yes
		Clear ALM4 Asso.	-	Yes	Yes
		Clear ALM5 Asso.	-	Yes	Yes
		Clear ALM6 Asso.	-	Yes	Yes
Comm. Parameters	Network Parameters	IP Address	-	192.168.0.10 **NOTE** This parameter can only be set to 192.168.0.x (x ranges from 1 to 254); otherwise it cannot be set successfully.	-
		Subnet Mask	-	255.255.255.0	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
		Default Gateway	-	192.168.0.1	-
		NetEco Primary IP	-	192.168.0.11	-
		NetEco Backup IP	-	192.168.0.10	-
		NetEco Port Number	-	31220	0-65535
	Serial Port	Northbound	Port Mode	Manual	Manual, Automatic
			Protocol Type	YDN1363 Protocol	M/S Protocol, YDN1363 Protocol, Modbus Protocol
		Southbound 1	Port Mode	Manual	Manual, Automatic
			Protocol Type	Modbus Protocol	Modbus Protocol
		Southbound 2	Port Mode	Automatic	Manual, Automatic
			Protocol Type	Modbus Protocol	Modbus Protocol
	North YDN Protocol	Baud Rate	-	9600	9600, 19200
		Comm. Address	-	1	1-254
	North M/S Protocol	Baud Rate	-	9600	9600, 19200
		Comm. Address	-	3	0-31
	North Modbus Protocol	Baud Rate	-	9600	9600, 19200
		Comm. Address	-	31	0-254
	South1-2 Modbus	Baud Rate	-	9600	9600, 19200
Local Parameters	Language	-	-	English	English, Chinese
	System Type	-	-	-	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	Date and Time	Date and Time	-	-	-
	LCD Contrast	-	-	5	0-10
Restore Settings	Restore Factory Set.	-	-	Yes	Yes
Parameters Correct **NOTE** This parameter is displayed in power systems that use copper bars.	Copper n	Copper n Current	-	140.0	1.0-30000.0
		Copper n Code	-	-	+, 0-9

B.4 Running Control

Table B-4 Running Control menu hierarchy

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
Power System	System Control Mode	-	-	Automatic	Automatic, Manual
	Reset SMU	-	-	Yes	Yes
	LLVD Control **NOTE** This parameter is valid when **System Control Mode** is set to **Manual**.	-	-	On	On, Off
Rectifier	Rectifier Group	Turn on All **NOTE** This parameter is valid when **System Control Mode** is set to **Manual**.	-	Yes	Yes
		Reset Protect	-	Yes	Yes

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
		Output Volt **NOTE** This parameter is valid when **System Control Mode** is set to **Manual**.	-	-	42.0-58.0
		Curr Limit **NOTE** This parameter is valid when **System Control Mode** is set to **Manual**.	-	121%	1-121
		Addr Abnormal Start **NOTE** This parameter is valid when **System Control Mode** is set to **Manual**.	-	Yes	Yes
		Clear Rect Loss Alm.	-	Yes	Yes
		Delete Rectifier	-	Yes	Yes
		Collect Fault Info	-	Yes	Yes
	Rectifier n	On/Off Ctrl **NOTE** This parameter is valid when **System Control Mode** is set to **Manual**.	-	On	On, Off

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
SSU #	SSU Group	On/Off Ctrl **NOTE** This parameter is displayed only when **System Control Mode** is set to **Manual**.	-	On	On, Off
		Reset	-	Yes	Yes
		Clear Lost Alm **NOTE** This parameter is displayed only when there is an **SSU Lost** alarm.	-	Yes	Yes
		Clear Com. Fail SSU **NOTE** This parameter is displayed only when there is an **All SSU Comm Fail** alarm.	-	Yes	Yes
	SSU n	On/Off Ctrl **NOTE** This parameter is displayed only when **System Control Mode** is set to **Manual**.	-	On	On, Off
		Reset	-	Yes	Yes
Battery **NOTE** This parameter is available only when lead-acid batteries are configured.	Charge Control **NOTE** This parameter is valid when **System Control Mode** is set to **Manual**.	-	-	Float Charging	Float Charging, Equalized Charging

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	BLVD Control **NOTE** This parameter is valid when **System Control Mode** is set to **Manual**.	-	-	On	On, Off
	Reset Batt. Capacity	-	-	Yes	Yes
	Battery Standard Tes	-	-	Stop	Stop, Start
	Short Test Control	-	-	Stop	Stop, Start
	Clear Test Log	-	-	Yes	Yes
Cell Detector Group	Batt. Cell Detector n#	Del Detector	-	Yes	Yes
AIM n	Board Reset	-	-	Yes	Yes
Equip Int AC.n#	A/C Control Mode	-	-	Auto	Auto, Manual
	A/C Power-on/off **NOTE** This parameter is valid when **A/C Control Mode** is set to **Manual**.	-	-	On	On, Off
	Delete Comm Fail A/C **NOTE** This parameter appears only if a communications failure A/C alarm is generated.	-	-	Yes	Yes
Batt Int AC.n#	A/C Control Mode	-	-	Auto	Auto, Manual

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
	A/C Power-on/off **NOTE** This parameter is valid when **A/C Control Mode** is set to **Manual**.	-	-	On	On, Off
	Delete Comm Fail A/C **NOTE** This parameter appears only if a communications failure A/C alarm is generated.	-	-	Yes	Yes
	Time Synchronization	-	-	Yes	Yes
DCDU#	DCDU Dev n	Reset Smoke Sensor	-	Yes	Yes
		Delete DCDU **NOTE** This parameter appears only if a communications failure DCDU alarm is generated.	-	Yes	Yes
Fan Group#	Fan Control Mode	-	-	Automatic	Automatic, Manual
	Fan Speed Ratio **NOTE** This parameter is displayed only when **Fan Control Mode** is set to **Automatic**.	-	-	50%	0-100

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Fifth-Level Menu	Default Value	Value Range
Clear Alarm	Historical Alarm	Delete His. Alarms	-	Yes	Yes
	Active Alarm	-	-	-	-
Output Relay Test	Test Enable	-	-	No	No, Yes
	Test Duration **NOTE** This parameter is displayed only when **Test Enable** is set to **Yes**.	-	-	1 Min	1-15
	ALM1-5 **NOTE** This parameter is displayed only when **Test Enable** is set to **Yes**.	-	-	Open	Open, Close
Hiber. Test Para.	Rect. Hiber. Speedup	Speedup Mutiple	-	1	1, 60, 600, 1440

B.5 User Management

Table B-5 User Managementmenu hierarchy

Second-Level Menu	Default Value	Range
Change Password	-	-
User Logout **NOTE** • Log out the current user. • This parameter is displayed only when you log in as an administrator or engineer.	Yes	Yes

C Acronyms and Abbreviations

B	
BLVD	battery low voltage disconnected
D	
DOD	depth of discharge
L	
LCD	liquid crystal display
LLVD	load low voltage disconnected
N	
NMS	network management system
S	
SMU	site monitoring unit
T	
TCB	temperature cycle battery

