



La Marche Manufacturing Company
www.lamarchemfg.com

DCSC Controller

DC System Controller



Installation and Operation Manual

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About This Document

Purpose

This document describes the site monitoring unit DCSC in terms of its hardware, liquid crystal display (LCD), web user interface (WebUI), common operations, remote management, and features.






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
 DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
 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	Calls attention to important information, best practices and tips.

Symbol	Description
	NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

1 Overview

1.1 Introduction

The site monitoring unit DCSC is a compact high-end monitoring module that monitors and manages La Marche box-type and cabinet-type power systems.

You can access the DCSC over the WebUI or a third-party network management system (NMS) that supports the SNMP to remotely manage power systems at multiple sites.

By configured with the user interface module DCU, the DCSC provides sensor ports, a RS485 port, dry contact inputs, and dry contact outputs for managing the environment inside the cabinet and reporting alarms.

Figure 1-1 shows a DCSC, Figure 1-2 shows a DCU, Figure 1-3 shows the connections between the DCSC, DCU, and system interface board. Figure 1-4 shows the connections between the DCSC, power system components, and NMSs.



Figure 1-1 DCSC



Figure 1-2 DCU

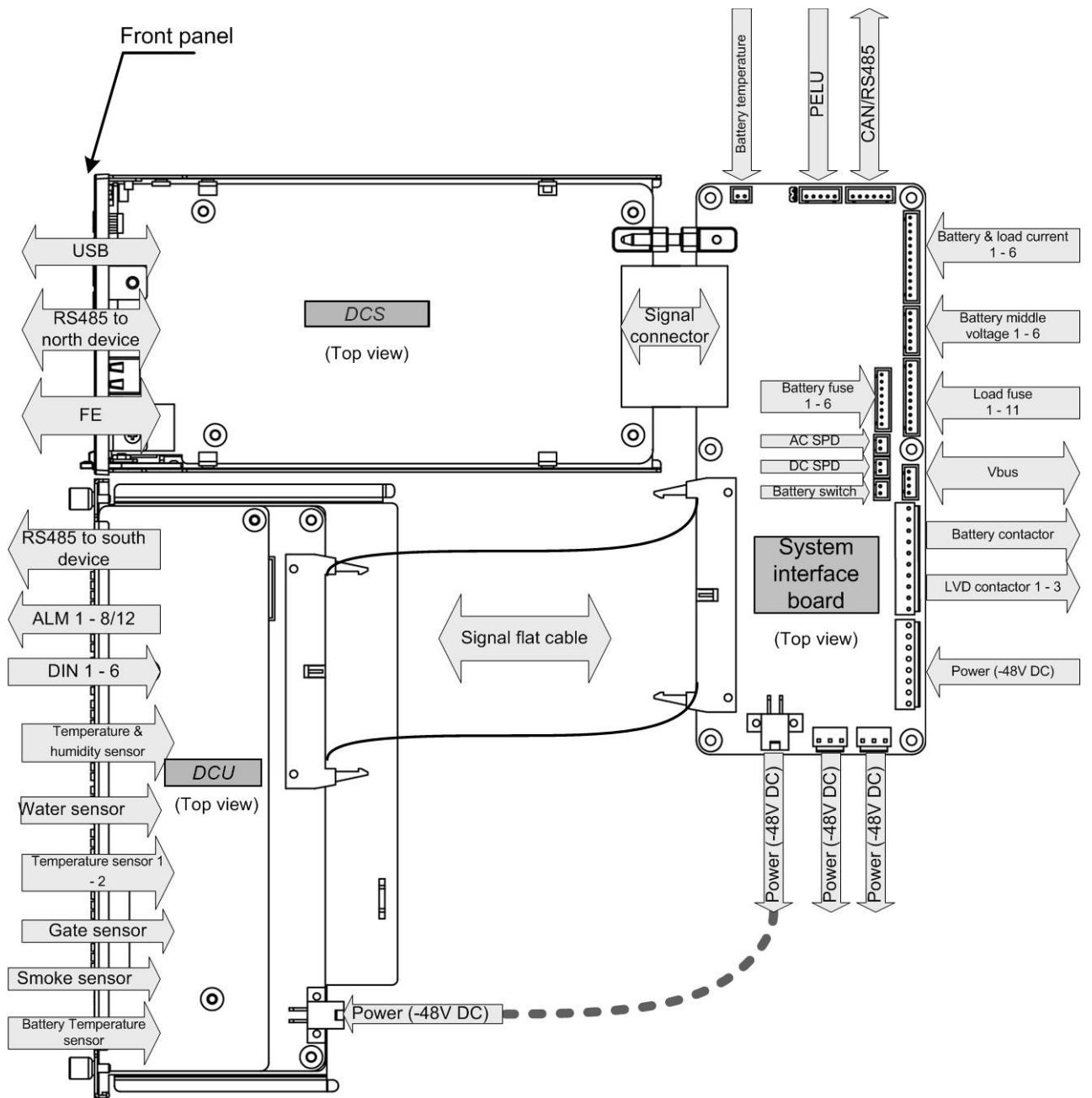


Figure 1-3 Connections between the DCSC and the DCU

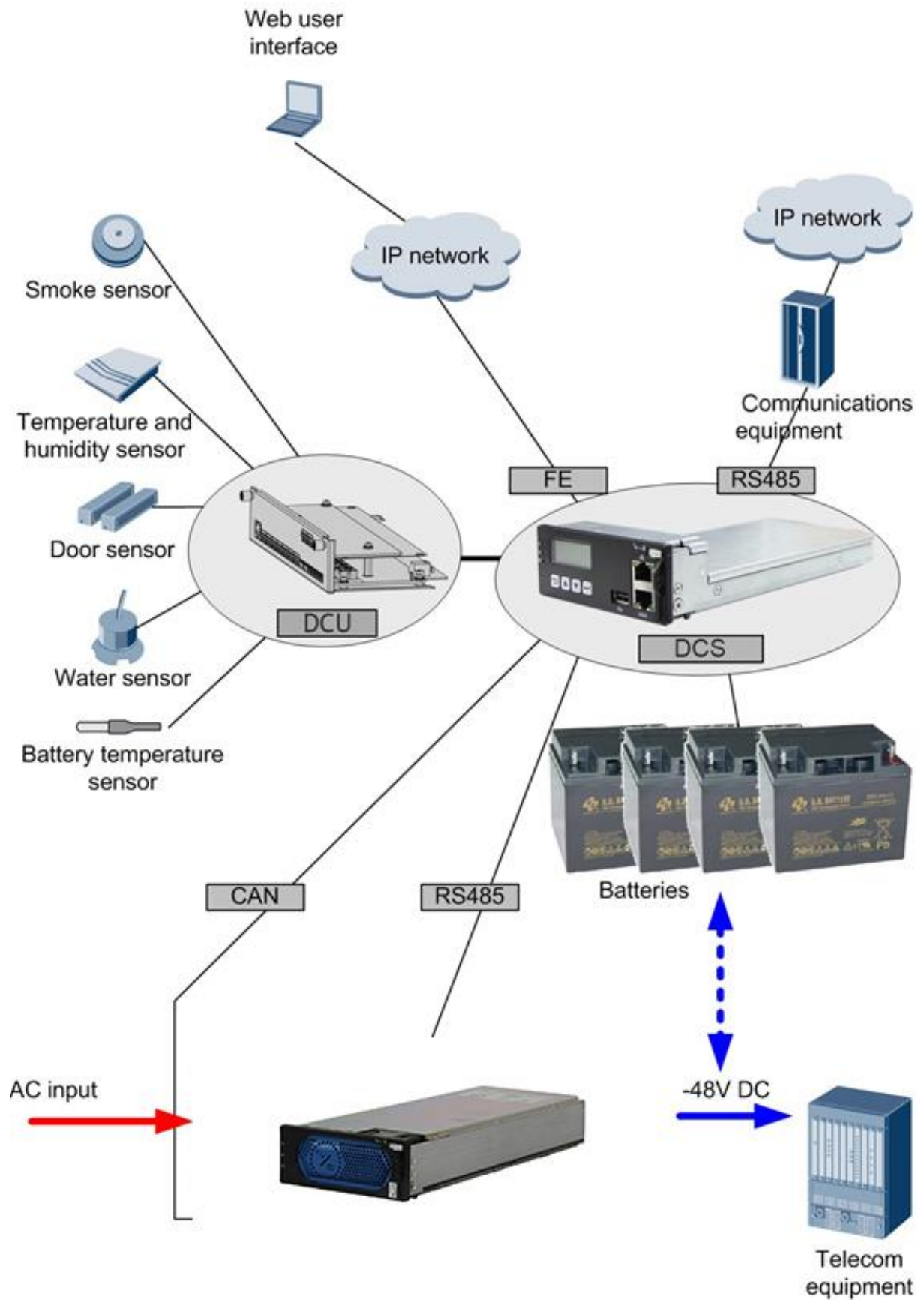


Figure 1-4 Network between the DCSC and Power System

1.2 Features

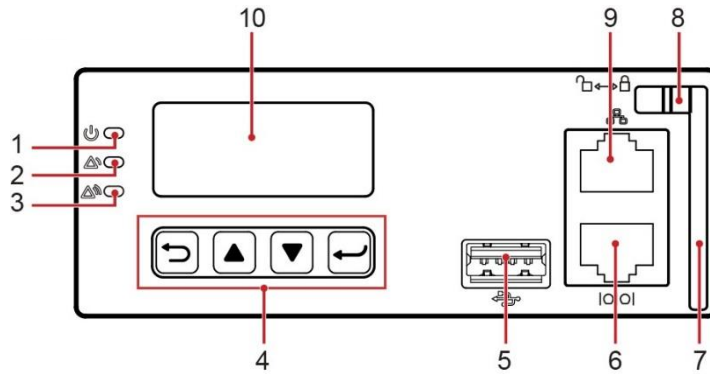
The DCSC has the following features:

- Monitors the power system operating status in real time.
 - Monitors AC and DC information.
 - Monitors rectifier information.
 - Monitors battery information.
 - Monitors ambient temperatures, battery temperatures, ambient humidity, door status, smoke generation, and water intrusion.
 - Detects the status of six dry contact inputs.
- Detects and reports alarms in real time.
 - There are four alarm severities, critical, major, minor, and warning, which can be associated with dry contact outputs. If the DCU is configured, eight dry contact outputs are supported.
 - Informs users of alarms by the indicators and alarm sounds that can be enabled.
 - Saves 50,000 historical alarms.
- Supports multiple remote management modes.
 - Over the WebUI.
 - Over an NMS that supports SNMP.
- Supports flexible rectifier management.
 - Controls rectifier output voltages.
 - Controls rectifier output currents.
 - Starts or shuts down each rectifier.
- Supports effective energy conservation management.
Intelligent rectifier hibernation management.
- Supports comprehensive battery management.
 - Battery boost charging and float charging management
 - Battery fast charging management.
 - Battery temperature compensation.
 - Battery high temperature protection.
 - Battery test management.
 - Battery current limiting management.
 - Battery low voltage disconnection (BLVD) protection.
 - Battery presence and balance detection.
- Supports flexible and programmable logic control.
Selects any signals (such as those indicating DC under voltage, rectifier missing, and AC power failures) and performs logical operations on them, such as **AND**, **OR**, **NOT**, **>**, **<**, and then sends calculation results to reserved dry contacts.
- Supports data export and performance statistics collection.

2 Panels and Ports

2.1 DCSC

Figure 2-1 DCSC panel



- (1) Run indicator (2) Minor Alarm indicator (3) Major Alarm indicator
 (4) Buttons (5) USB port (reserved) (6) RS485/RS232 port
 (7) Handle (8) Locking latch (9) Fast Ethernet (FE) port
 (10) LCD

Table 2-1 DCSC indicator description

Indicator	Color	Status	Description
Run indicator	Green	Off	The DCSC is faulty or has no DC input.
		Blinking at 0.5 Hz	The DCSC is running properly and communicating with the host properly.
		Blinking at 4 Hz	The DCSC is running properly but is not communicating with the host
Minor Alarm indicator	Yellow	Off	The DCSC is not generating any minor alarms.
		Steady on	The DCSC is generating a minor alarm.
Major Alarm indicator	Red	Off	The DCSC is not generating any critical or major alarms.
		Steady on	The DCSC is generating a critical or major alarm.

LCD

The DCSC provides a 128x48 LCD with white backlight to display real-time parameters for you to view and set. The visible area dimensions (L x W) are 34.54 mm x 11.02 mm.

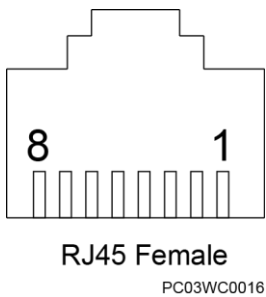
USB Port

The DCSC reserves a USB port.

Communications Ports

Table 2-2 DCSC communications port description

Communications Port	Communications Parameter	Communications Protocol
FE port	10/100M autonegotiation	HTTPS and SNMP



Pin	Signal	Description
1	TX+	Sends data over FE.
2	TX-	
3	RX+	Receives data over FE.
6	RX-	
4, 5, 7, and 8	Left blank	-

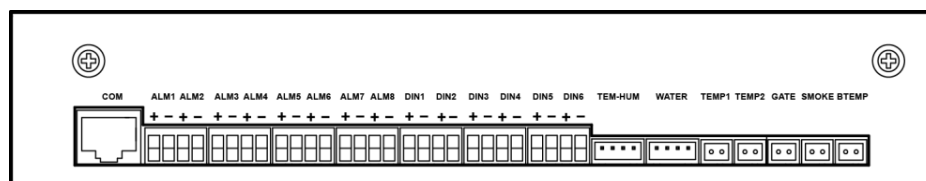
Figure 2-2 Pins in a communications port

Table 2-3 FE port pin definition

2.2 DCU Panel

Panel

Figure 2-3 DCU panel



Ports

Table 2-4 DCU port description

Port Type	Silk Screen	Description
Sensor port	TEM-HUM	Ambient temperature and humidity sensor
	WATER	Water sensor
	TEMP1	Ambient temperature sensor 1
	TEMP2	Ambient temperature sensor 2
	GATE	Door status sensor
	SMOKE	Smoke sensor
	BTEMP	Battery temperature sensor
Dry contact input NOTE For details about the signal definitions, see the power system user manual.	DIN1	Dry contact input 1
	DIN2	Dry contact input 2
	DIN3	Dry contact input 3
	DIN4	Dry contact input 4
	DIN5	Dry contact input 5
	DIN6	Dry contact input 6
Dry contact output NOTE For details about the alarms associated with dry contact outputs, see the power system user manual.	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
	ALM6	Dry contact output 6
	ALM7	Dry contact output 7
	ALM8	Dry contact output 8
Communications port	COM	RS485 port

Pins

Figure 2-4 DCU pin numbers

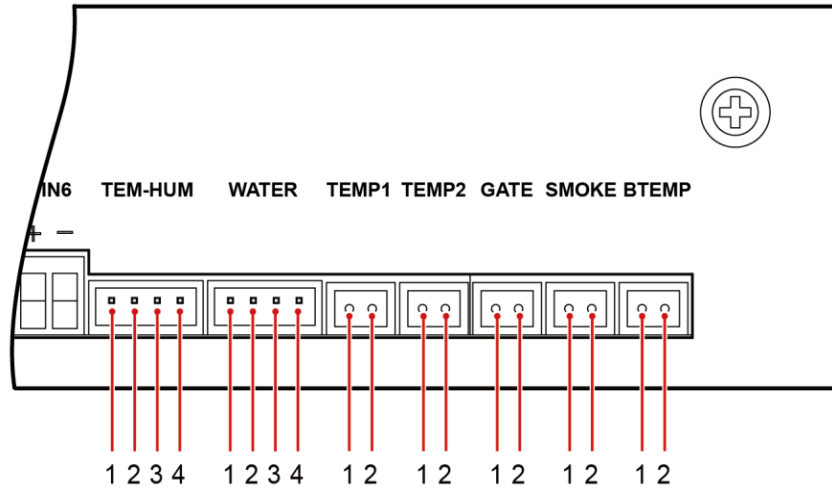


Table 2-5 DCU pin definitions

Silk Screen	No.	Pins
TEM-HUM	1	12 V
	2	ENV_TEMP
	3	12 V
	4	ENV_HUM
WATER	1	12 V
	2	WATER
	3	GND
	4	-
TEMP1	1	TEMP1
	2	GND
TEMP2	1	TEMP2
	2	GND
GATE	1	GATE-
	2	GATE+
SMOKE	1	12V
	2	SMOKE
BTEMP	1	BTEMP1
	2	GND

3 Hardware Replacement

3.1 Safety Precautions

When replacing the DCSC and user interface module (DCU), wear electrostatic discharge (ESD) gloves or an ESD wrist strap to avoid component damage.

3.2 Replacing the DCSC

Context

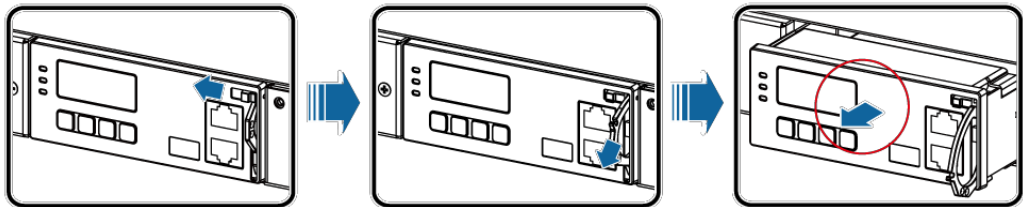
The DCSC is hot-swappable.

Procedure

Step 1 Push the locking latch on the DCSC to the left and pull out the handle.

Step 2 Take the DCSC out of the slot, as shown in Figure 3-1.

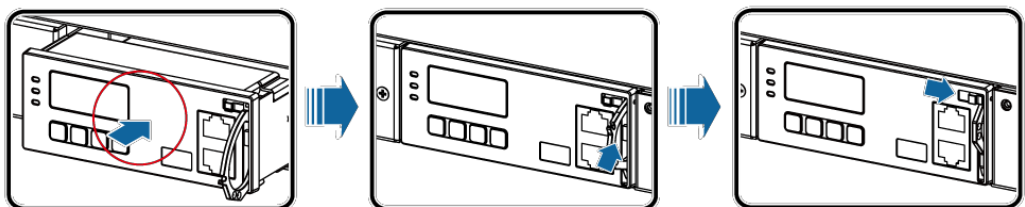
Figure 3-1 Removing the DCSC



Step 3 Place the new DCSC at the entry to the appropriate slot in the monitoring unit subrack, and push the DCSC until its front panel aligns with the front panel of the monitoring unit subrack.

Step 4 Push the handle in position and push the locking latch to the right to lock the handle, as shown in Figure 3-2.

Figure 3-2 Installing the DCSC



Follow-up Procedure

After replacing the DCSC, the parameters are restored to factory defaults. You need to reset the parameters based on site requirements.

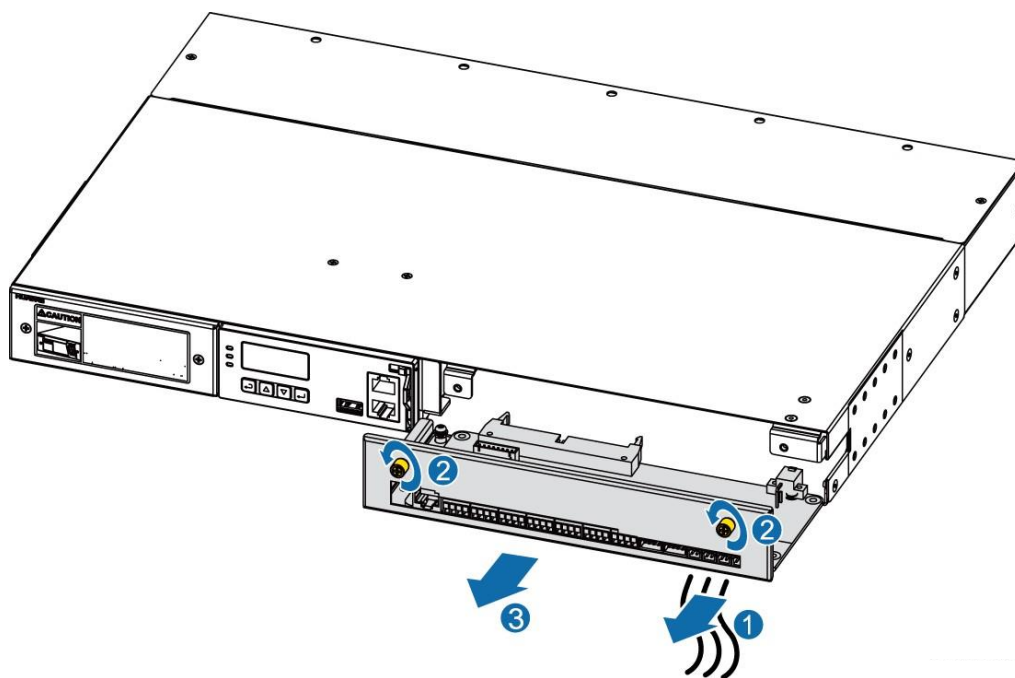
3.3 Replacing the DCU

Procedure

Step 1 Record the positions where signal cables connect to the DCU panel, and then disconnect the signal cables.

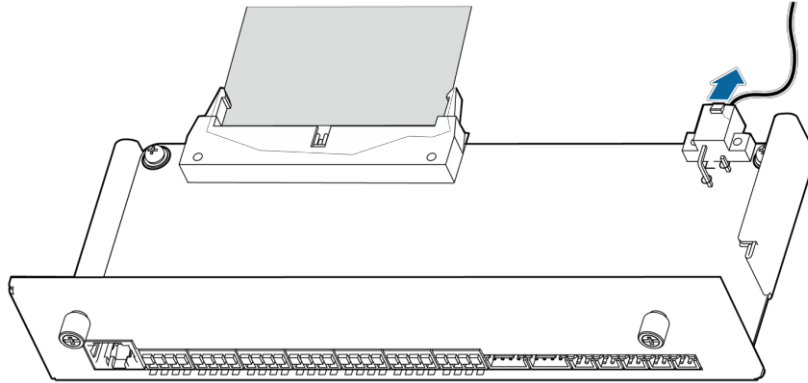
Step 2 Loosen the screws on the DCU panel and remove the DCU.

Figure 3-3 Removing the DCU



Step 3 Disconnect the 48VDC power cable from the DCU backplane.

Figure 3-4 Disconnecting the 48 V power cable



Step 4 Disconnect the flat cable from the DCU backplane.

Step 5 Take out a new DCU, and connect the flat cable to the new DCU backplane.

Step 6 Connect the 48 V power cable to the new DCU backplane.

Step 7 Push the DCU into the slot until its front panel aligns with the front panel of the monitoring unit, and tighten the screws.












Step 8 Connect the signal cables to the original positions on the DCU panel.

4 LCD

4.1 Buttons

The DCSC provides four buttons to set and query parameters.

Table 4-1 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	<ul style="list-style-type: none">• Enters the main menu from the standby screen.• Enters a submenu from the main menu.• Saves menu settings on a submenu.
NOTE <ul style="list-style-type: none">• 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 the parameter value quickly, hold down  or .• To restart the DCSC, hold down  and  at the same time for 10 seconds.• Hold down  and  (or ) for more than 2 seconds to increase (or decrease) the LCD backlight brightness.		

4.2 Password

When visiting **Setting Wizard**, **Parameters Settings**, and **Running Control** on the LCD, enter the preset password **000001**.

Change the default password upon your first login to ensure the system security. 6.2.6 *Changing the User Password* describes how to change the password.

Preset user name: admin

Preset password: **Changeme**

5 WebUI

5.1 Preparations for Login

5.1.1 Preparing the Operating Environment

Operating system: Windows XP or later

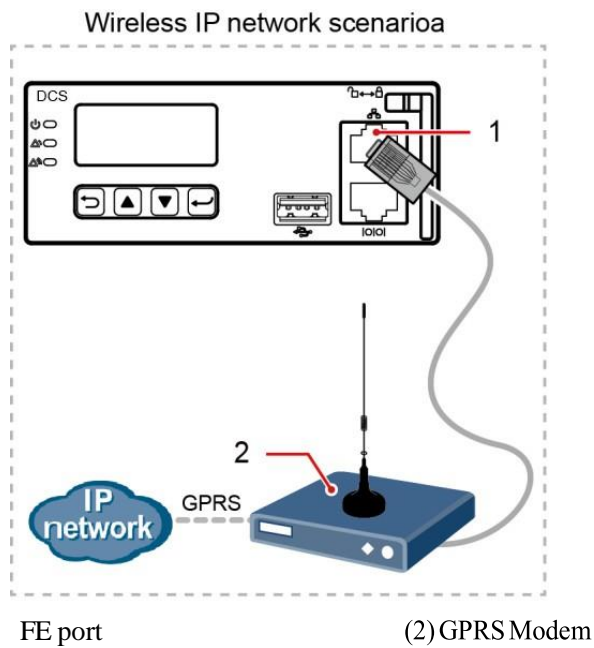
Browser: Internet Explorer 7.0 or later, FireFox 5.0 or later, and Chrome 16.0 or later

5.1.2 Connecting a Communications Cable

Procedure

Step 1 Connect the FE port on the DCSC by using a network cable.

Figure 5-1 Connecting a Communications Cable



5.1.3 SettingParameters

Procedure

- Step 1** Apply to the site or equipment room network administrator for a fixed IP address.
- Step 2** Set the IP address, subnet mask, and gateway on the LCD.

Table 5-1 IP parameters

Main Menu	Second-Level Menu	Third-Level Menu	Default Value	Setting Value
Setting Wizard	Network Parameters	IP Address	192.168.0.10	Set this parameter according to the address assigned by the network administrator.
		Subnet Mask	255.255.255.0	Set this parameter according to the subnet mask provided by the network administrator.
		Default Gateway	192.168.0.0	Set this parameter according to the gateway address provided by the network administrator.

5.2 Login Page

Enter “<https://>”, followed by the IP address for the DCPS in the address box of Internet Explorer. The login page is displayed.

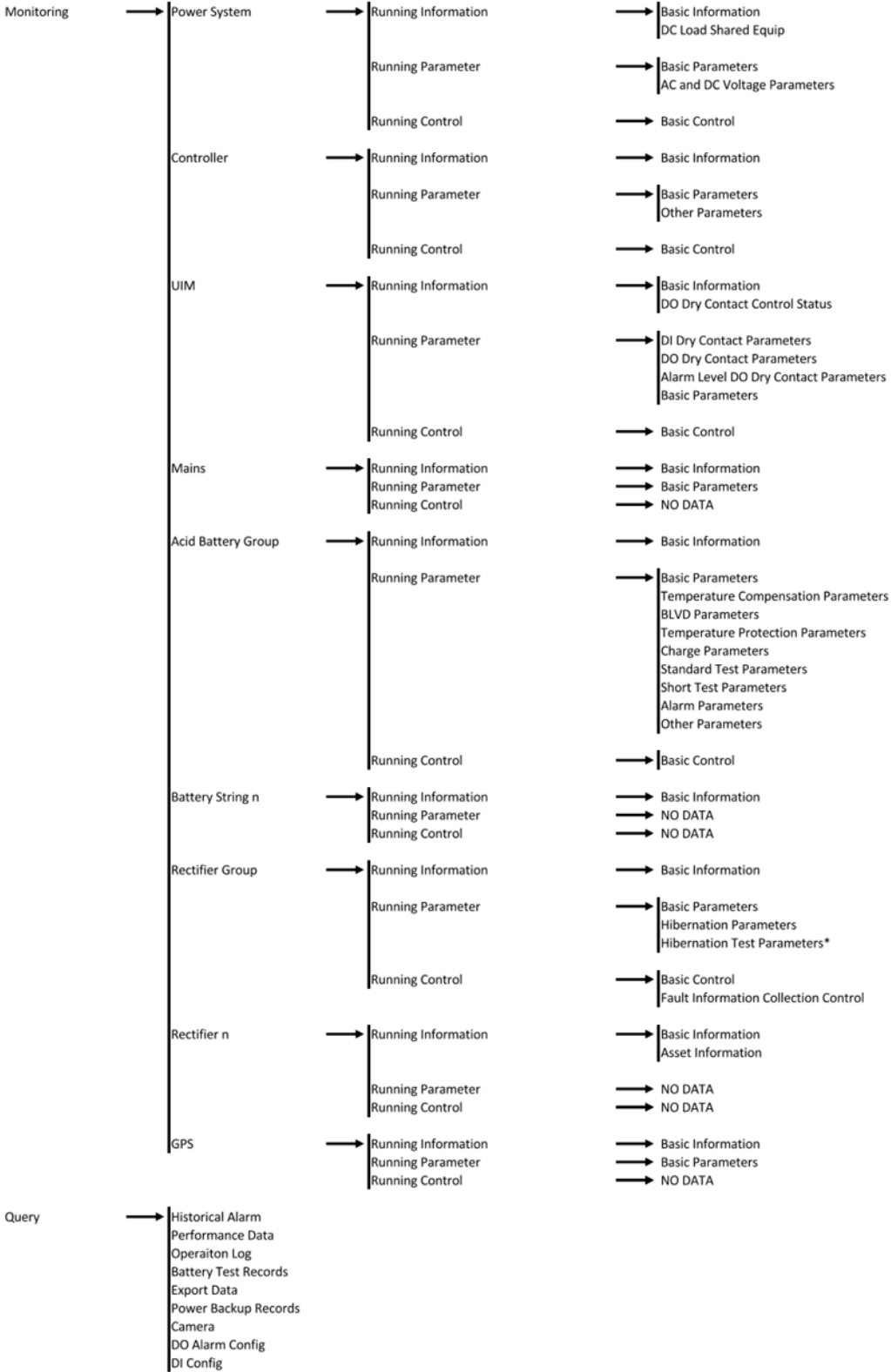
Default user name: **admin**

Default password: **Changeme**



Figure 5-2 Login page

5.3 WebUI Hierarchy



System Settings	<ul style="list-style-type: none"> → Site Configuration Time Network Config SNMP NetEco Serial Port Alarm Parameters DI Dry Contact PLC Data Record Port Equip Config IP Camera Staggering Electricity Scene Config Setup Parameter TCP-Modbus Config 	<ul style="list-style-type: none"> → Site ID System Type System Individual File Network Security Certificate → Time Zone Time Synchronization → Local Area Connection Local Connection 2 NAT Mapping Configuration Enable NAT Gateway Mobile Data VPN Mobile VPN Configuration China Unicom VPN Configuration China Telecom VPN Configuration VLAN IPv4 WIFI Lock Network Type → SNMP SNMPv3 SNMP Trap Mib File → Communication Parameters Access NetEco Security Certificate Set Reauthentication Pre-Shared Key → Northbound M/S Protocol Modbus Protocol YDN1363 Protocol → Power System UIM Controller Rectifier Rectifier Group Acid Battery Group Battery String Mains GPS → Basic Parameters Logic List Import and Export → Port Device Configuration → Protocol Type SFTP User Management IP Camera Number → Basic Parameters → Scene Config File Import and Export → Basic Parameters Sensor Configuration Parameters Mobile DG Parameters → TCP-Modbus Setting Server
Maintenance	<ul style="list-style-type: none"> → Software Upgrade Version Information Configuration File E-Label User Management Fault Information Feature Management Network Diagnosis 	<ul style="list-style-type: none"> → Import New Configuration File Back Up Current Settings Restore Factory Settings → Export Fault Information → Device Feature List

5.4 Home

After you click **Home**, **System Overview** and **Active Alarm** are displayed in the navigation page.

Figure 5-3 System Overview

System Information	
Site ID	NA
System Type	DCPS-4RU-ST2
System Control Mode	Automatic
Bus Bar Voltage	54.0 V
Total Load Current	0.0 A
Load Usage	0 %
Current Power Supply Mode	Mains Supply

Battery Information	
Battery Status	Float Charging
Total Battery Current	0.0 A

Figure 5-4 Active Alarm

SN	Severity	Equipment	Alarm Name	Generation Time
28	Minor	Rectifier2	Communication Fail	2019-06-27 14:40:28

5.5 Monitoring

The **Monitoring** tab page allows you to view the running information, set the running parameters and set the running control for the **Power System, Controller, UIM, Mains, Acid Battery Group, Rectifier Group, and GPS.**

5.5.1 Running Information

Power System

The Running information page of the **Power System** tab allows you to view basic information regarding the power system, such as bus bar voltage, total output current, load shared power, etc.

Figure 5-5 Power System – Running Information

Basic Information	
Bus Bar Voltage	54.0 V
Total Load Current	0.0 A
AC Voltage	125.4 V
AC Current	0.0 A
AC Frequency	60 Hz
Power System Efficiency	NA
Site Efficiency	NA
System Load Ratio	0.00 %
SPUE	NA
Current Power Supply Mode	Mains Supply
AC Power Outage Status	AC Normal
Total Load Power	0.00 kW
Energy Work Mode	Site Power
LLVD Number	0
DC Load Shared Equip	
DC Load Shared Power Consumption	0.0 kWh
DC Load Shared Current	0.0 A
DC Load Shared Power	0.00 kW
Last Month Load Shared Power Consumption	0.0 kWh

Controller

The Running Information page of the **Controller** tab allows you to view the NetEco Link state.

Figure 5-6 Controller – Running Information

Basic Information	
NetEco Link State	Unlink

UIM

The Running Information page of the **UIM** tab allows you view basic I/O panel information such as temperature sensor state and DO dry alarm contact control status.

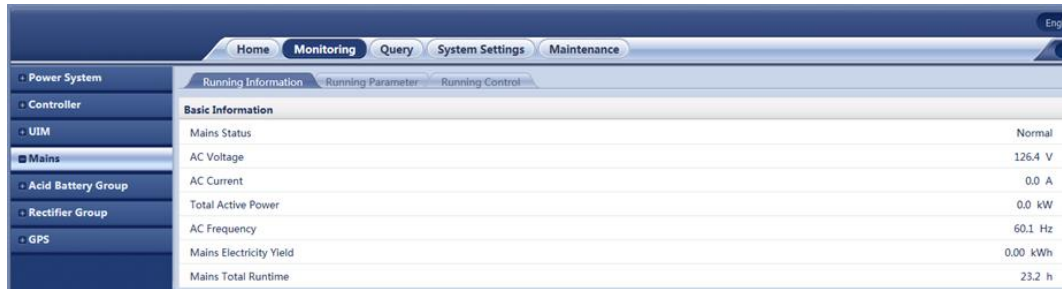
Figure 5-7 UIM – Running Information

Basic Information	
Temp2	NA
DO Dry Contact Control Status	
ALM1 Control Status	Close
ALM2 Control Status	Close
ALM3 Control Status	Open
ALM4 Control Status	Close
ALM5 Control Status	Close
ALM6 Control Status	Close
ALM7 Control Status	Close
ALM8 Control Status	Open

Mains

The Running Information page of the **Mains** tab allows you to view basic AC input information.

Figure 5-8 Mains – Running Information

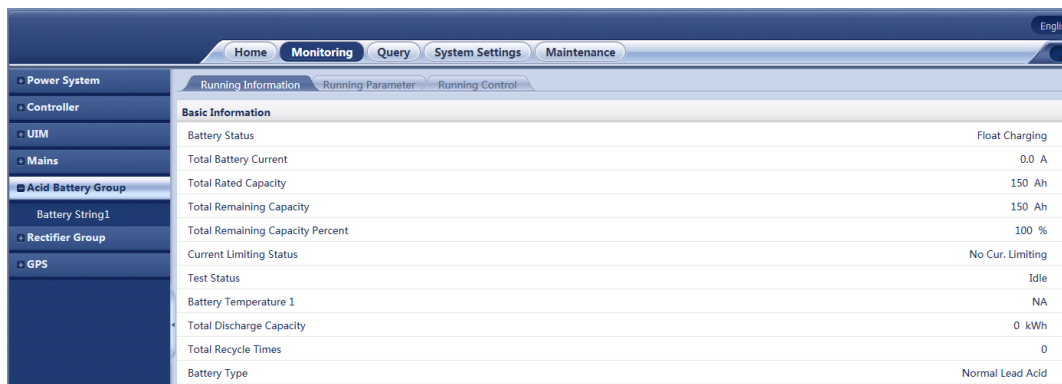


Basic Information	
Mains Status	Normal
AC Voltage	126.4 V
AC Current	0.0 A
Total Active Power	0.0 kW
AC Frequency	60.1 Hz
Mains Electricity Yield	0.00 kWh
Mains Total Runtime	23.2 h

Acid Battery Group

The Running Information page of the **Acid Battery Group** page allows you to view basic battery information.

Figure 5-9 Acid Battery Group – Running Information

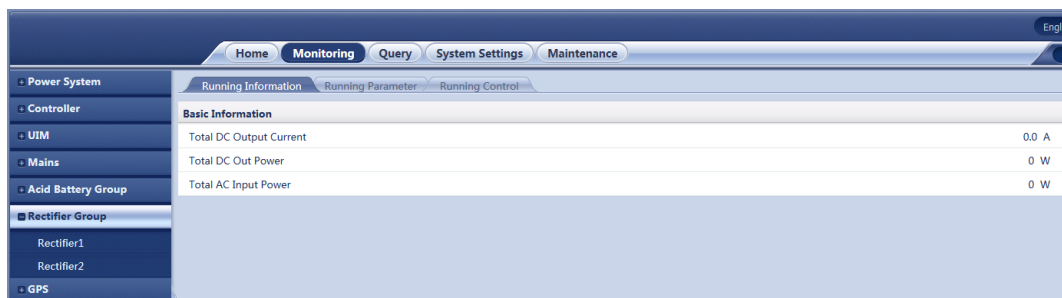


Basic Information	
Battery Status	Float Charging
Total Battery Current	0.0 A
Total Rated Capacity	150 Ah
Total Remaining Capacity	150 Ah
Total Remaining Capacity Percent	100 %
Current Limiting Status	No Cur. Limiting
Test Status	Idle
Battery Temperature 1	NA
Total Discharge Capacity	0 kWh
Total Recycle Times	0
Battery Type	Normal Lead Acid

Rectifier Group

The Running Information page of the **Rectifier Group** tab allows you to view basic rectifier AC input/DC output information.

Figure 5-10 Rectifier Group – Running Information



Basic Information	
Total DC Output Current	0.0 A
Total DC Out Power	0 W
Total AC Input Power	0 W

GPS

The Running Information page of the **GPS** tab allows you to view the power system GPS location.

Figure 5-11 GPS – Running Information

Basic Information		
Longitude		NA
Latitude		NA
Altitude		0 m

Running Parameters Power System

The Running Parameters page of the **Power System** tab allows you to set basic power system and AC/DC voltage parameters.

Figure 5-12 Power System – Running Parameter

Basic Parameters			
<input type="checkbox"/>	Number of Load Shunts	0	(0-4)
<input type="checkbox"/>	Enable System On Power Limit	No	
<input type="checkbox"/>	AC Maximum Phase Current	1000	A (1-10000)
<input type="checkbox"/>	AC Derating Coefficient	0.8	(0.0-1.0)

Submit

AC and DC Voltage Parameters

Controller

The Running Parameters page of the **Controller** tab allows you to set basic controller parameters.

Figure 5-13 Controller – Running Parameter

Basic Parameters			
<input type="checkbox"/>	Buzzer Enable	No	
<input type="checkbox"/>	Traffic Fluctuation Alarm Threshold	50	MB/Day (0-10000)
<input type="checkbox"/>	Heartbeat Duration	120	s (10-180)

Submit

Other Parameters

UIM

The Running Parameters page of the **UIM** tab allows you to set basic I/O panel parameters.

Figure 5-14 UIM – Running Parameter

The screenshot shows the 'UIM' tab in the 'Monitoring' section. The 'Running Parameter' sub-tab is active. The left sidebar shows a tree view with 'UIM' selected. The main content area is titled 'DI Dry Contact Parameters' and contains a table of parameters:

Parameter	Value
DIN1 Alarm Condition	Close
DIN2 Alarm Condition	Close
DIN3 Alarm Condition	Close
DIN4 Alarm Condition	Close
DIN5 Alarm Condition	Close
DIN6 Alarm Condition	Close
DIN5 Reuse	None
DIN6 Reuse	None

Below the table is a 'Submit' button. Further down, there are sections for 'DO Dry Contact Parameters', 'Alarm Level DO Dry Contact Parameters', and 'Basic Parameters'.

Mains

The Running Parameters page of the **Mains** tab allows you to set basic AC input parameters.

Figure 5-15 Mains – Running Parameter

The screenshot shows the 'Mains' tab in the 'Monitoring' section. The 'Running Parameter' sub-tab is active. The left sidebar shows a tree view with 'Mains' selected. The main content area is titled 'Basic Parameters' and contains a table of parameters:

Parameter	Value	Unit
AC Voltage Mode	Percentage Mode	
Rated AC Volt	120	V (60-300)
Max Power Ratio	100.0	% (0.0-100.0)
AC Model	1Phase_2Line	
Mains Phase Overvoltage Threshold	130	% (110-200)
Mains Phase Undervoltage Threshold	80	% (1-90)
AC High Freq Threshold	66	Hz (40-70)
AC Low Freq Threshold	45	Hz (40-70)
Mains Current Limit Enabled	Disable	
Three-Phase Imbalance Ratio	100.0	% (10.0-150.0)
PSU Conversion Efficiency	95.0	% (90.0-98.0)

Below the table is a 'Submit' button.

Acid Battery Group

The Running Parameters page of the **Acid Battery Group** tab allows you to set basic battery, BLVD, charge, temperature compensation/protection, standard test, short test, and alarm parameters.

Figure 5-16 Acid Battery Group – Running Parameter

Parameter Name	Value	Unit
Battery1 Connected	Yes	
Battery2 Connected	No	
Single-String Rated Capacity	150	Ah (5-10000)
Float Charge Voltage	54.0	V (42.0-58.0)
Boost Charge Voltage	56.0	V (42.0-58.0)
Charge Current Limit Coefficient	0.15	C10 (0.05-0.50)
BLVD General Disconnect	Enable	
Intelligent Dormancy Enable	Disable	
Battery Cable Length	1	m (0-100)
Battery Cable Cross-sectional Area	35	mm ² (1-1000)
SOC/SOH Calculation Scenario	Backup Scene	
Attenuation Coefficient	0.80	(0.00-1.00)
Block Voltage	2V	

Rectifier Group

The Running Parameters page of the **Rectifier Group** tab allows you to set basic rectifier and hibernation parameters.

Figure 5-17 Rectifier Group – Running Parameter

Parameter Name	Value	Unit
Default Output Volt	52.0	V (48.0-58.0)
Maximum Limited Current	121	% (10-121)
High Rectifier Remaining Capacity	5	% (0-150)
Low Rectifier Remaining Capacity	75	% (0-150)
Sequential Start Interval	0	s (0-20)
Overtoltage Protection Threshold	59.5	V (56.0-60.5)
WALK-IN Enable	No	

GPS

The Running Parameters page of the **GPS** page allows you to set basic GPS parameters, such as longitude, attitude, altitude.

Figure 5-18 GPS – Running Parameter

Basic Parameters		
<input type="checkbox"/>	Longitude	<input type="text"/> deg: 180~180 Max. 15 Characters
<input type="checkbox"/>	Latitude	<input type="text"/> deg: 90~90 Max. 14 Characters
<input type="checkbox"/>	Altitude	<input type="text" value="0"/> - + m (-500~10000)

Running Control Power System

The Running Control page of the **Power System** tab allows you to set basic power system control parameters, such as system control mode.

Figure 5-19 Power System – Running Control

Basic Control	
<input type="radio"/>	System Control Mode <input type="text" value="Automatic"/>
<input type="radio"/>	PUE Calculation Reset <input type="text" value="Yes"/>

Controller

The Running Control page of the **Controller** tab allows you to set basic controller control parameters, such as resetting the controller and blocking all alarms.

Figure 5-20 Controller – Running Control

Basic Control	
<input type="radio"/>	Reset SMU <input type="text" value="Yes"/>
<input type="radio"/>	Block Alarm <input type="text" value="No"/>

UIM

The Running Control page of the **UIM** tab allows you to set basic I/O panel control parameters, such as clearing alarm associations.

Figure 5-21 UIM – Running Control

Item	Value
<input type="radio"/> Clear ALM1 Association	Yes
<input type="radio"/> Clear ALM2 Association	Yes
<input type="radio"/> Clear ALM3 Association	Yes
<input type="radio"/> Clear ALM4 Association	Yes
<input type="radio"/> Clear ALM5 Association	Yes
<input type="radio"/> Clear ALM6 Association	Yes
<input type="radio"/> Clear ALM7 Association	Yes
<input type="radio"/> Clear ALM8 Association	Yes
<input type="radio"/> Clear DIN1 Association	Yes
<input type="radio"/> Clear DIN2 Association	Yes
<input type="radio"/> Clear DIN3 Association	Yes
<input type="radio"/> Clear DIN4 Association	Yes
<input type="radio"/> Clear DIN5 Association	Yes
<input type="radio"/> Clear DIN6 Association	Yes

Mains

The Running Control of the **Mains** tab is currently unavailable and is for future use.

Acid Battery Group

The Running Control of the **Acid Battery Group** tab allows you to set basic battery control parameters.

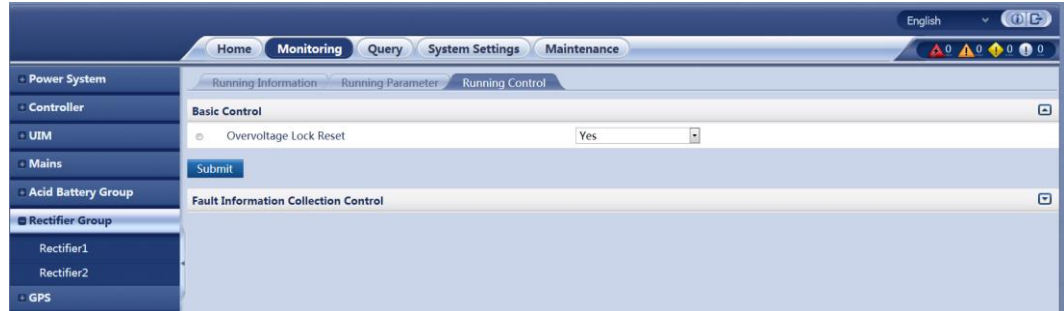
Figure 5-22 Acid Battery Group – Running Control

Item	Value
<input type="radio"/> Reset Battery Capacity	Yes
<input type="radio"/> Battery Standard Test	Stop
<input type="radio"/> Short Test Control	Stop
<input type="radio"/> Clear Test Log	Yes
<input type="radio"/> Fast Charge Control	Stop
<input type="radio"/> Clear Backup Log	Yes

Rectifier Group

The Running Control of the **Rectifier Group** tab allows you to set basic rectifier control parameters, such as, threshold, rectifier, charge, and battery parameters.

Figure 5-23 Rectifier Group – Running Control



GPS

The Running Control of the **GPS** tab is currently unavailable and is for future use.

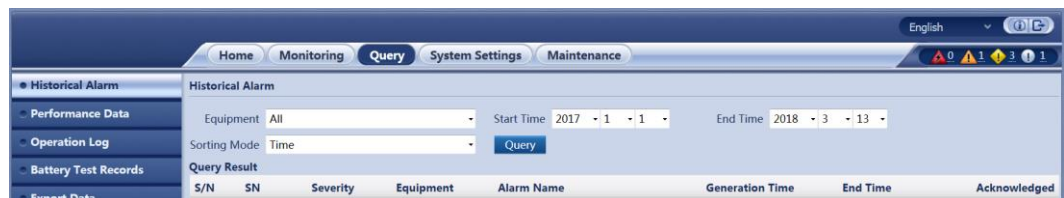
5.6 Query

The **Query** tab allows you to query and export historical alarms, performance data, operation logs, battery test records, as well as view the output relay alarm configuration.

Querying Historical Alarm

The **Historical Alarm** page allows you to query the alarm information about one or all devices based on the device type.

Figure 5-24 Historical Alarm



Querying Performance Data

The **Performance Data** page allows you to query system parameters, such as ambient temperatures, system voltages, and battery parameters based on the device type.

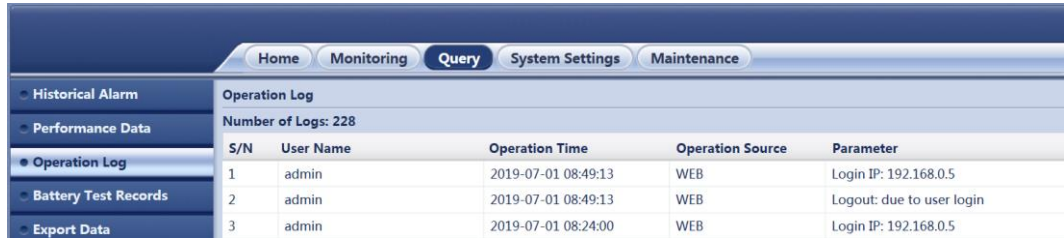
Figure 5-25 Performance Data



Operation Log

The **Operation Log** page allows you to view the system event logs, whether the event occurred on the LCD or on the WebUI.

Figure 5-26 Operation Log



S/N	User Name	Operation Time	Operation Source	Parameter
1	admin	2019-07-01 08:49:13	WEB	Login IP: 192.168.0.5
2	admin	2019-07-01 08:49:13	WEB	Logout: due to user login
3	admin	2019-07-01 08:24:00	WEB	Login IP: 192.168.0.5

Querying Battery Test Records

The **Battery Test Records** page allows you to view test results regarding battery tests performed by the power system.

Figure 5-27 Battery Test Records



Battery Type
Lead Acid

No Data

Exporting Data

The **Export Data** page allows you to export historical alarms, performance data, operation records, and battery test records respectively or as a whole.

Figure 5-28 Export Data



Export Options
<input type="radio"/> Historical Alarm
<input type="radio"/> Performance Data
<input type="radio"/> Operation Log
<input type="radio"/> Battery Test Records
<input type="radio"/> All

Export

Power Backup Records

The **Export Data** page allows you to export historical alarms, performance data, operation records, and battery test records respectively or as a whole.

Figure 5-29 Power Backup Records

S/N	Power-off Type	Power Backup Mode	Expected Backup Time (Min)	Actual Backup Time (Min)	Expected Backup Capacity (%)	Actual Backup Capacity (%)	Expected Backup Stop Voltage (V)	Batt Avg Current(A)	Backup Alarm	Record Time
No Data										

Camera

The **Camera** page is currently unavailable and is for future use.

DO Alarm Configuration

The **DO Alarm Configuration** page allows you to view the alarms assigned per output relay and from which equipment the alarm is associated with.

Figure 5-30 DO Alarm Config

Output Relay		
ALM1		
S/N	Alarm Name	Equipment Type
1	AC Failure	Power System
ALM2		
S/N	Alarm Name	Equipment Type
1	Bus Bar Ultra Overvoltage	Power System
2	Bus Bar Overvoltage	Power System
3	Bus Bar Ultra Undervoltage	Power System
4	Bus Bar Undervoltage	Power System
ALM3		
S/N	Alarm Name	Equipment Type
1	Multi-Rectifier Fault	Rectifier Group
2	All Rectifiers Fail to Communicate	Rectifier Group
3	Rectifier Fault	Rectifier
4	Rectifier Protection	Rectifier
5	Communication Fail	Rectifier
ALM4		
S/N	Alarm Name	Equipment Type
1	AC Surge Protector Fault	Power System
2	DC Surge Protector Fault	Power System
ALM5		
ALM6		

DI Alarm Configuration

The **DI Configuration** page is currently unavailable and is for future use.

5.7 System Settings

The **System Settings** tab allows you to set the Site Configuration, Time, Network Configuration, SNMP, NetEco, Serial Port, Alarm Parameters, DI Dry Contact, PLC, Data Record, Port Equipment Configuration, IP Camera, Staggering Electricity, Scene Configuration, Setup Parameters, and TPC-Modbus Configuration of the power system.

Setting Site Configuration

The **Site Configuration** page allows you to set the site ID, system type, as well as upload system individual files, security certificate and key.

Figure 5-31 Site Configuration

The screenshot shows the 'Site Configuration' page within the 'System Settings' tab. The page has a navigation bar with 'Home', 'Monitoring', 'Query', 'System Settings', and 'Maintenance'. A left sidebar lists various configuration options, with 'Site Configuration' selected. The main content area is divided into several sections:

- Site ID:** A text input field with a placeholder 'a-z;A-Z;0-9;_'(Max.8Characters)' and a 'Submit' button.
- System Type:** A dropdown menu currently set to 'DCPS-4RU-ST2' with a 'Submit' button.
- System Individual File:** A section with a 'Browse...' button and the text 'No file selected.', followed by an 'Upload' button.
- Network Security Certificate:** A section with a 'Select Certificate Format' dropdown set to 'CRT format'. It contains two 'Please select a security certificate' fields, each with a 'Browse...' button and 'No file selected.' text, and an 'Upload' button. Below these is a checkbox for 'Enable key password' and a 'Submit' button.

Setting Date and Time

The **Time** page allows you to set a time zone and local time. You can directly set the local date and time or synchronize the time with that on the Network Time Protocol (NTP) server.

Figure 5-32 Date and Time

The screenshot shows the 'Time' page within the 'System Settings' tab. The page has a navigation bar with 'Home', 'Monitoring', 'Query', 'System Settings', and 'Maintenance'. A left sidebar lists various configuration options, with 'Time' selected. The main content area is divided into two sections:

- Time Zone:** A section with a 'Local Time Zone' dropdown set to '(UTC -06:00)Center Standard Time' and a 'DST Enable' dropdown set to 'No'. It includes a 'Submit' button.
- Time Synchronization:** A section with a checkbox for 'NTP Server Synchronization'. Below it are 'Local Date' (set to '2018-3-13 (YYYY-MM-DD)') and 'Local Time' (set to '08:52:40 (HH:MM:SS)') fields, followed by a 'Submit' button.

Setting Network Configuration

The **Network Configuration** page allows you to set the IP address, subnet mask, and default gateway.

Figure 5-33 Network Configuration

The screenshot shows the 'Network Config' page in a web interface. The left sidebar contains a menu with options: Site Configuration, Time, Network Config (selected), SNMP, NetEco, Serial Port, Alarm Parameters, DI Dry Contact, PLC, Data Record, Port Equip Config, IP Camera, Staggering Electricity, Scene Config, Setup Parameter, and TCP-Modbus Config. The main content area is titled 'Network Config' and includes the following sections:

- Local Area Connection:** IP Address (192, 168, 0, 10), Subnet Mask (255, 255, 255, 0), Default Gateway (192, 168, 0, 1). A 'Submit' button is below.
- Local Connection 2:** Enable Local Connection 2 (No), IP Address (192, 168, 0, 10), Subnet Mask (255, 255, 255, 0), Default Gateway (192, 168, 0, 1). A 'Submit' button is below.
- NAT Mapping Configuration:** Enable NAT Gateway.
- Mobile Data:** VPN.
- Mobile VPN Configuration:** China Unicom VPN Configuration, China Telecom VPN Configuration.
- VLAN:** IPV4, WIFI.
- Lock Network Type:** A dropdown menu set to 'AUTO' and a 'Submit' button.

Setting SNMP

The **SNMP** page allows you to set SNMP network parameters and export Mib files.

Figure 5-34 SNMP

The screenshot shows the 'SNMP' configuration page in a web interface. The left sidebar contains a menu with options: Site Configuration, Time, Network Config, SNMP (selected), NetEco, Serial Port, Alarm Parameters, DI Dry Contact, PLC, Data Record, Port Equip Config, IP Camera, and Staggering Electricity. The main content area is titled 'SNMP' and includes the following sections:

- SNMP:** SNMP Version (SNMPv3), SNMP Port Number (161, with a range of 1-65535). A 'Submit' button is below.
- SNMPv3:** A table with columns: S/N, User Name, Authentication Protocol, and Proprietary Protocol. Below the table are 'Add', 'Modify', and 'Delete' buttons.
- SNMP Trap:** A table with columns: S/N, Trap Target Address, Trap Port, SNMP Version, and SNMPv3User Name/Trap community. Below the table are 'Add', 'Modify', and 'Delete' buttons.
- Mib File:** A 'Mib File' field and an 'Export' button.

Setting NetEco

The **NetEco** page allows you to set NetEco communication parameters, security certificate, and pre-shared password/key.

Figure 5-35 NetEco

The screenshot shows the 'NetEco' configuration page. The left sidebar contains a menu with options: Site Configuration, Time, Network Config, SNMP, NetEco (selected), Serial Port, Alarm Parameters, DI Dry Contact, PLC, Data Record, Port Equip Config, IP Camera, Staggering Electricity, Scene Config, Setup Parameter, and TCP-Modbus Config. The main content area is titled 'NetEco' and contains several sections:

- Communication Parameters:** Primary Server IP Address (192, 168, 0, 10), Port Number (31220). A 'Submit' button is below.
- Access NetEco Security Certificate:** Three 'Upload' buttons for CA certificate file, local certificate file, and key file. Each has a 'Browse...' button and a note: 'Upload files that are less than 1 MB.' A 'Key password' field and a 'Confirm key password' field are also present. A 'Submit' button is below.
- Set Reauthentication Pre-shared Key:** Pre-shared Password and Confirm Pre-shared Key fields. A note specifies: 'a-z;A-Z;0-9;-!@#%^_[]~/'-`\$ (8-32 characters of at least three types)'. A 'Submit' button is below.

Setting Serial Port

The **Serial Port** page allows you to set the serial port mode, protocol type, as well as the baud rate and communication addresses.

Figure 5-36 Serial Port

The screenshot shows the 'Serial Port' configuration page. The left sidebar is the same as in Figure 5-35, with 'Serial Port' selected. The main content area is titled 'Serial Port' and contains:

- Northbound:** Port Mode (Automatic), Protocol Type (YDN1363 Protocol). A 'Submit' button is below.
- M/S Protocol:** Baud Rate (9600), Communication Address (3).
- YDN1363 Protocol:** Baud Rate (9600), Communication Address (1).
- Modbus Protocol:** Baud Rate (9600), Communication Address (33).

A 'Submit' button is located at the bottom right of the configuration area.

Setting Alarm Parameters

The **Alarm Parameters** page allows you to view alarm information based on the device type, to enable or disable alarm generation, and to set alarm severities and alarm dry contact outputs based on site requirements.

Figure 5-37 Alarm Parameters

The screenshot shows the 'Alarm Parameters' configuration page. The left sidebar is the same as in Figure 5-35, with 'Alarm Parameters' selected. The main content area is titled 'Alarm Parameters' and contains:

- A dropdown menu labeled 'Select an equipment type:' with 'Power System' selected.
- A 'Confirm' button to the right of the dropdown.

Setting DI Dry Contact Parameters

The **DI Dry Contact** page allows you to name the alarm dry contact inputs.

Figure 5-38 Alarm Parameters

The screenshot shows a web interface for configuring DI Dry Contact parameters. The navigation menu includes Home, Monitoring, Query, System Settings, and Maintenance. The left sidebar lists configuration options: Site Configuration, Time, Network Config, SNMP, NetEco, Serial Port, Alarm Parameters, DI Dry Contact (selected), and PLC. The main content area is titled 'DIN' and contains a table with 6 rows. Each row has an 'S/N' column and a 'Name' column with a text input field and a label (DIN1-DIN6). A 'Submit' button is located at the bottom right of the table.

S/N	Name 'a-z','A-Z','0-9','_'(Max.8Characters)
1	<input type="text"/> (DIN1)
2	<input type="text"/> (DIN2)
3	<input type="text"/> (DIN3)
4	<input type="text"/> (DIN4)
5	<input type="text"/> (DIN5)
6	<input type="text"/> (DIN6)

Setting PLC

The **PLC** page allows you to select any signals (such as those indicating DC undervoltage, D.G. operating, and AC power failures) and perform logical operations on them, such as **AND**, **OR**, **NOT**, **>**, and **<**, and then send calculation results to dry contacts.

Figure 5-39 PLC

The screenshot shows a web interface for configuring PLC parameters. The navigation menu includes Home, Monitoring, Query, System Settings, and Maintenance. The left sidebar lists configuration options: Site Configuration, Time, Network Config, SNMP, NetEco, Serial Port, Alarm Parameters, DI Dry Contact, PLC (selected), Data Record, Port Equip Config, IP Camera, Staggering Electricity, Scene Config, Setup Parameter, and TCP-Modbus Config. The main content area is titled 'PLC' and contains several sections: 'Basic Parameters' with a 'PLC Function Enable' dropdown set to 'No' and a 'Submit' button; 'Logic List' with a table for defining logic operations; and 'Import and Export' sections for configuration files. The 'Logic List' table has columns for S/N, Input 1, Logic, Input 2, Output, and Status. The 'Import and Export' sections include checkboxes for 'Configuration File Decryption Password' and 'Configuration File Encryption Password', along with 'Browse...' and 'Export' buttons.

S/N	Input 1	Logic	Input 2	Output	Status
-----	---------	-------	---------	--------	--------

Data Record

The **Data Record** page allows you to enable/disable the recording of data for various performance data variables, as well as being able to set the recording period.

Figure 5-40 Data Record

Data Record		Number of Total Records : 15		Number of Enabled Records : 15		
<input type="checkbox"/> All	S/N	Equipment	Performance Data	Record Enable	Record Period	Setting Result
<input type="checkbox"/>	1	Power System	AC Voltage	Enable	5Min	
<input type="checkbox"/>	2	Power System	Phase L1 Voltage	Enable	5Min	
<input type="checkbox"/>	3	Power System	Phase L2 Voltage	Enable	5Min	
<input type="checkbox"/>	4	Power System	Phase L3 Voltage	Enable	5Min	
<input type="checkbox"/>	5	Power System	L1-L2 Line Voltage	Enable	5Min	
<input type="checkbox"/>	6	Power System	L2-L3 Line Voltage	Enable	5Min	
<input type="checkbox"/>	7	Power System	L3-L1 Line Voltage	Enable	5Min	
<input type="checkbox"/>	8	Power System	Bus Bar Voltage	Enable	5Min	
<input type="checkbox"/>	9	Power System	Total Load Current	Enable	5Min	
<input type="checkbox"/>	10	Power System	Current Power Supply Mode	Enable	Status Change	
<input type="checkbox"/>	11	Acid Battery Group	Battery Temperature	Enable	5Min	
<input type="checkbox"/>	12	Acid Battery Group	Battery Status	Enable	Status Change	
<input type="checkbox"/>	13	Acid Battery Group	Battery Current	Enable	5Min	
<input type="checkbox"/>	14	Acid Battery Group	Battery Remaining Capacity Percent	Enable	5Min	
<input type="checkbox"/>	15	Battery String1	Battery Current	Enable	5Min	

Setting Port Equipment Configuration

The **Port Equipment Configuration** page allows you to set the equipment type, communication addresses, protocol type, and baud rate of various devices.

Figure 5-41 Port Equipment Configuration

Equipment Type	Communication Start Address	Communication End Address	Protocol Type	Baud Rate
Electronic Lock_Modbus Protocol	91	95	Modbus Protocol	9600
TCUC_Modbus Protocol	36	39	Modbus Protocol	9600
TCUC_Modbus Protocol	53	56	Modbus Protocol	9600
EFUSE_M/S Protocol	12	13	M/S Protocol	9600
EFUSE_Modbus Protocol	128	133	Modbus Protocol	9600
DC Energy Meter_Modbus Protocol	20	20	Modbus Protocol	9600
DC Energy Meter_Modbus Protocol	80	80	Modbus Protocol	9600
Li Battery_Modbus Protocol	214	221	Modbus Protocol	9600
Li Battery_Modbus Protocol	224	231	Modbus Protocol	9600
DTS_Modbus Protocol	210	213	Modbus Protocol	9600
DCDU_Modbus Protocol	144	146	Modbus Protocol	9600
AIM_Modbus Protocol	41	41	Modbus Protocol	9600
Batt.Cell Detector_Modbus Protocol	112	113	Modbus Protocol	9600
iBOX_Modbus Protocol	60	61	Modbus Protocol	9600
Int. AirCon_Modbus Protocol	21	22	Modbus Protocol	9600
Int. AirCon_Modbus Protocol	25	28	Modbus Protocol	9600
TCU_M/S Protocol	6	7	M/S Protocol	9600
TCU_M/S Protocol	23	26	M/S Protocol	9600
Battery Cabinet_Modbus Protocol	31	32	Modbus Protocol	9600
Yada2060 Ammeter_Modbus Protocol	1	1	Modbus Protocol	9600
Yada2060 Ammeter_Modbus Protocol	9	9	Modbus Protocol	9600

IP Camera

The **IP Camera** page is currently unavailable and is for future use.

Staggering Electricity

The **Staggering Electricity** page allows you to enable/disable the staggering electricity function.

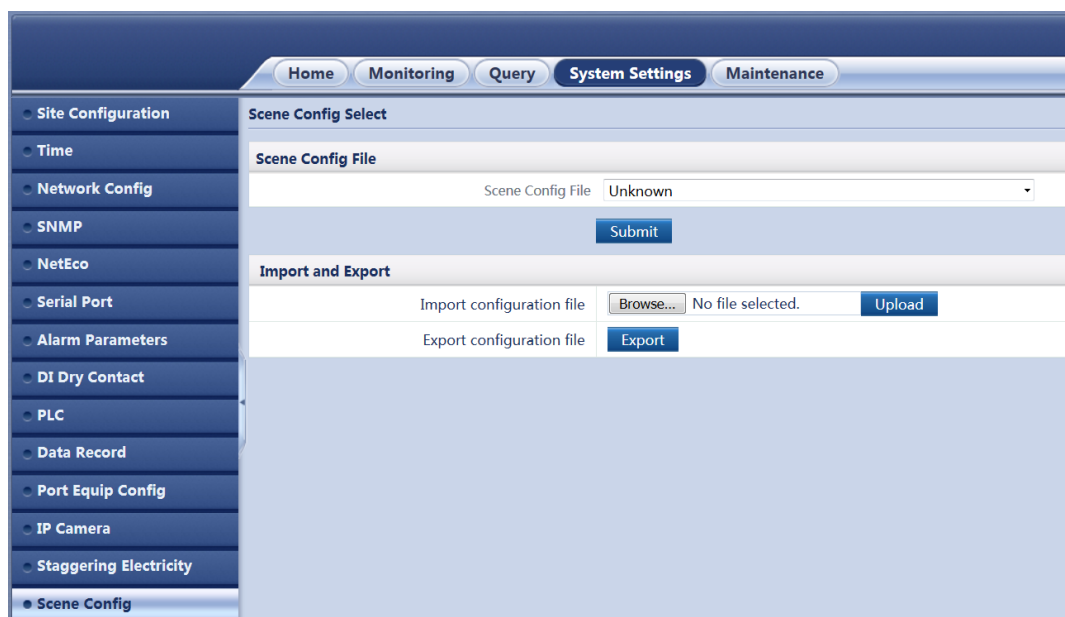
Figure 5-42 Staggering Electricity



Setting Scene Configuration

The **Scene Configuration** page allows you to both select the desirable scene configuration file, as well as import and export configuration files.

Figure 5-43 Scene Configuration



Setup Parameters

The **Setup Parameters** page allows you to set miscellaneous system parameters, as well as sensor configuration and mobile DG parameters.

Figure 5-44 Setup Parameters

The screenshot shows the 'Setup Parameters' page in a web interface. The page is divided into three main sections: Basic Parameters, Sensor Configuration Parameters, and Mobile DG Parameters. The left sidebar contains a navigation menu with options like Site Configuration, Time, Network Config, SNMP, NetEco, Serial Port, Alarm Parameters, DI Dry Contact, PLC, Data Record, Port Equip Config, IP Camera, Staggering Electricity, Scene Config, Setup Parameter (selected), and TCP-Modbus Config. The top navigation bar includes Home, Monitoring, Query, System Settings (selected), and Maintenance. The Basic Parameters section includes fields for Temperature Cycle Battery auto-sensing (Yes), DG Number (0), Load Electricity Statistics Source (Shunt), Include Public Load (No), Load Electricity Statistics Start Date (1), Battery Type Number (1), Battery Vendor (Other), Battery Model (12V VRLA), Specify the battery model (text input), Enable Signature Verification (Disable), TLS 1.0 (Disable), and Hybrid Scenario (No). The Sensor Configuration Parameters section is currently empty. The Mobile DG Parameters section includes Mobile DG Auto-Sensing (Disable). A Submit button is located at the bottom of each section.

Setting TCP-Modbus Configuration

The **TCP-Modbus Configuration** page allows you to set various TCP-Modbus parameters, as well as server setup by uploading certificate files and key files.

Figure 5-45 TCP-Modbus Configuration

The screenshot shows the 'TCP-Modbus Configuration' page in a web interface. The page is divided into two main sections: TCP-Modbus Setting and Server. The left sidebar contains a navigation menu with options like Site Configuration, Time, Network Config, SNMP, NetEco, Serial Port, Alarm Parameters, DI Dry Contact, PLC, Data Record, Port Equip Config, IP Camera, Staggering Electricity, Scene Config, Setup Parameter, and TCP-Modbus Config (selected). The top navigation bar includes Home, Monitoring, Query, System Settings (selected), and Maintenance. The TCP-Modbus Setting section includes fields for TCP-Modbus link Mode (Server) and TCP-Modbus SSL server enable (Enable). A Submit button is located at the bottom of this section. The Server section includes fields for Upload CA certificate file, Upload local certificate file, and Upload key file, each with a Browse... button and a No file selected. message. There is also an Enable key password checkbox and a Submit button at the bottom.

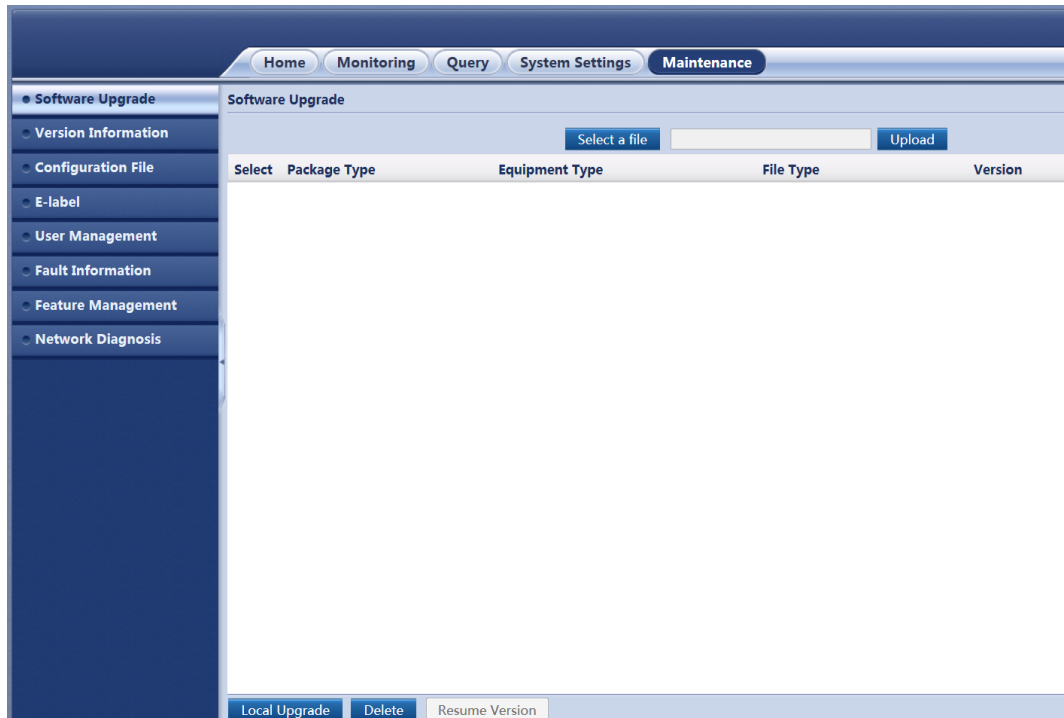
5.7 Maintenance

The **Maintenance** tab allows you to upgrade the system, view version information, import and back up configuration files, query component electronic labels, manage users, and export fault information.

Upgrading Software

The **Software Upgrade** page allows you to select an upgrade file and upgrade the software.

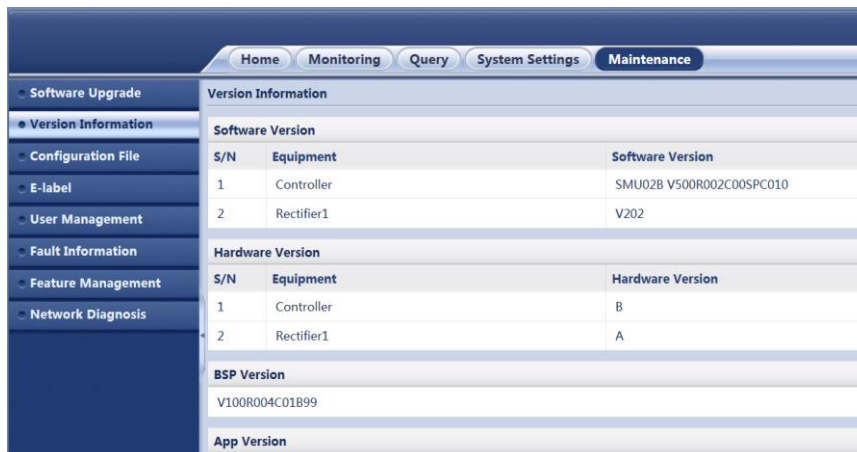
Figure 5-46 Software Upgrade



Querying Version Information

The **Version Information** page allows you to query the software version, hardware version, and bottom support program (BSP) version of the power system and its components.

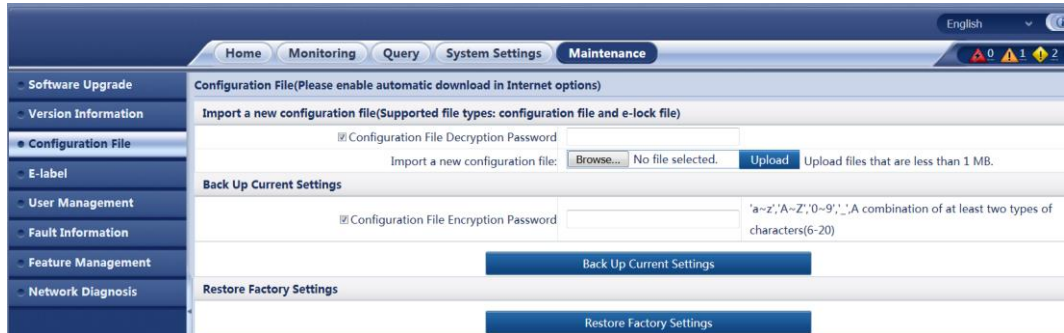
Figure 5-47 Version Information



Setting Configuration Files

The **Configuration File** page allows you to import configuration files, back up current configurations, and restore the factory defaults.

Figure 5-48 Configuration File



Managing Users

The **User Management** page allows you to add, modify, and delete users.

Figure 5-49 User Management



The DCSC supports a maximum of three online users. User types are classified into admin, engineer, developer (Factory use only) and operator, and they have different rights.

You can manage users only on the WebUI.

Exporting Fault Information

The **Fault Information** page allows you to export fault information in one-click mode.

Figure 5-50 Fault Information



6 Common Tasks

6.1 Common Installation Tasks

6.1.1 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 6-1 describes basic battery parameters.

Table 6-1 Basic battery parameters

Parameter	Description	Default Value	Value Range
BatteryN 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	<ul style="list-style-type: none"> • Yes • No
Single-String Rated Capacity	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 Single-String Rated 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 Single-String 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 Rated Capacity to 2000 Ah (2 x 1000 Ah).	100Ah	5-10000

LCD Operation

Step 1 Set **Battery1 Connected** to **Yes**.

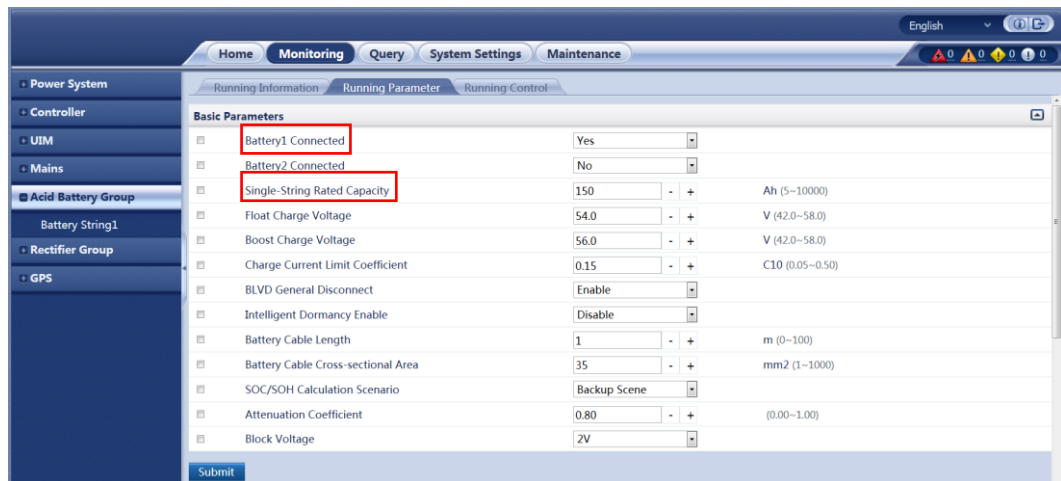
Path: **Setting Wizard > Battery Parameters > Battery1 Connected**

Step 2 Set the **Single-String Rated Capacity** based on the actual requirements.

WebUI Operation

The following figure shows the WebUI operations.

Figure 6-1 Setting basic battery parameters on the WebUI



6.1.2 Setting the Date and Time

Context

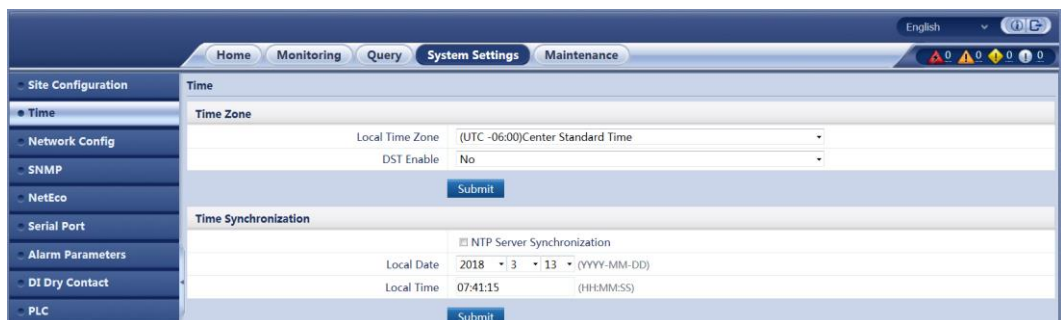
You can set the date and time based on the local time and time zone.

LCD Operation

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

WebUI Operation

Figure 6-2 Setting the date and time on the WebUI



6.1.3 Configuring an Alarm Tone

Context

You can configure an alarm tone over the LCD or WebUI.

When the buzzer sounds, press any button on the DCSC panel to suspend it.

Table 6-2 Alarm tone parameter description

Parameter	Description	Default Value	Value Range
Buzzer Enable	Enables or disables an alarm tone.	No	<ul style="list-style-type: none">• Yes• No

LCD Operation

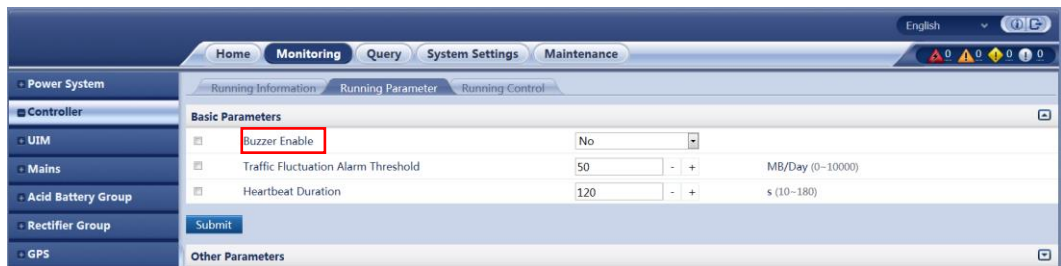
Step 1 Set **Buzzer Enable** to **Yes**.

Path: **Parameters Settings > Power System > Basic Parameters > Buzzer Enable**

WebUI Operation

Step 1 Set **Buzzer Enable** to **Yes**.

Figure 6-3 Setting Buzzer Alarm Duration on the WebUI



6.1.4 Enabling or Disabling Alarms

Context

You can enable or disable each alarm based on site requirements.

If an alarm is enabled, the DCSC generates the alarm when the alarm condition is met.

If an alarm is disabled, the DCSC does not generate the alarm even though the alarm condition is met.

LCD Operation

Step 1 Set Alarm Enable to Yes.

Path: **Parameters Settings > Alarm Parameters > AlarmParameters**

WebUI Operation

Step 1 Select an equipment type.

Figure 6-4 Selecting an equipment type on the WebUI



Step 2 Enable alarms on the alarm list corresponding to **Power System**.

Figure 6-5 Enabling alarms on the WebUI

The screenshot shows the 'Alarm Parameters' page with a table of alarms. The 'System Settings' tab is active. The 'Select an equipment type' dropdown is set to 'Power System'. The table lists 16 alarms with their respective settings.

All	S/N	Alarm Name	Alarm Enable	Severity	Output Relay	Camera	Setting Result
<input type="checkbox"/>	1	DC Surge Protector Fault	Enable	Minor	Select	Select	
<input type="checkbox"/>	2	AC Failure	Enable	Major	Select	Select	
<input type="checkbox"/>	3	AC Overvoltage	Enable	Minor	Select	Select	
<input type="checkbox"/>	4	AC Undervoltage	Enable	Minor	Select	Select	
<input type="checkbox"/>	5	Bus Bar Ultra Overvoltage	Enable	Major	Select	Select	
<input type="checkbox"/>	6	Bus Bar Overvoltage	Enable	Major	Select	Select	
<input type="checkbox"/>	7	Bus Bar Ultra Undervoltage	Disable	Critical	Select	Select	
<input type="checkbox"/>	8	Bus Bar Undervoltage	Enable	Major	Select	Select	
<input type="checkbox"/>	9	Unknown System Type	Enable	Critical	Select	Select	
<input type="checkbox"/>	10	Load Fuse Break	Enable	Major	Select	Select	
<input type="checkbox"/>	11	Long AC Failure	Disable	Major	Select	Select	
<input type="checkbox"/>	12	Illegal Door Open	Enable	Major	Select	Select	
<input type="checkbox"/>	13	AC Loop Abnormal	Enable	Major	Select	Select	
<input type="checkbox"/>	14	Mobile DG Required	Disable	Major	Select	Select	
<input type="checkbox"/>	15	AC Charge Abnormal	Enable	Major	Select	Select	
<input type="checkbox"/>	16	System Manual Control	Enable	Warning	Select	Select	

6.1.5 Setting Alarm Severities and Associated Relays

Context

There are four alarm severities: critical, major, minor, and warning.

You can set a severity for each alarm.

LCD Operation

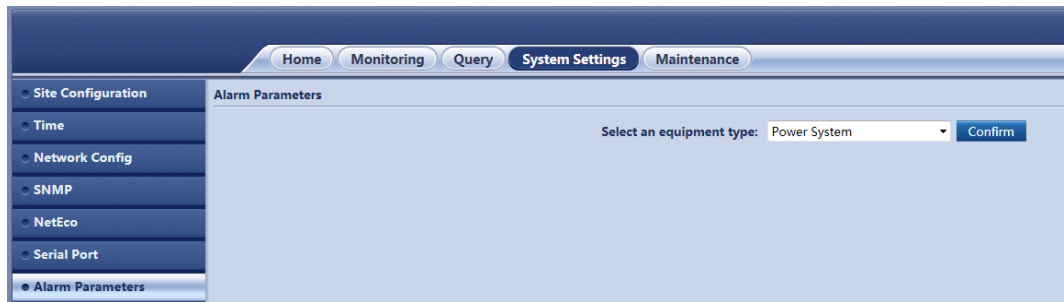
Step 1 Set alarm severities based on the site requirements.

Path: **Parameters Settings > Alarm Parameters > Alarm Parameters**

WebUI Operation

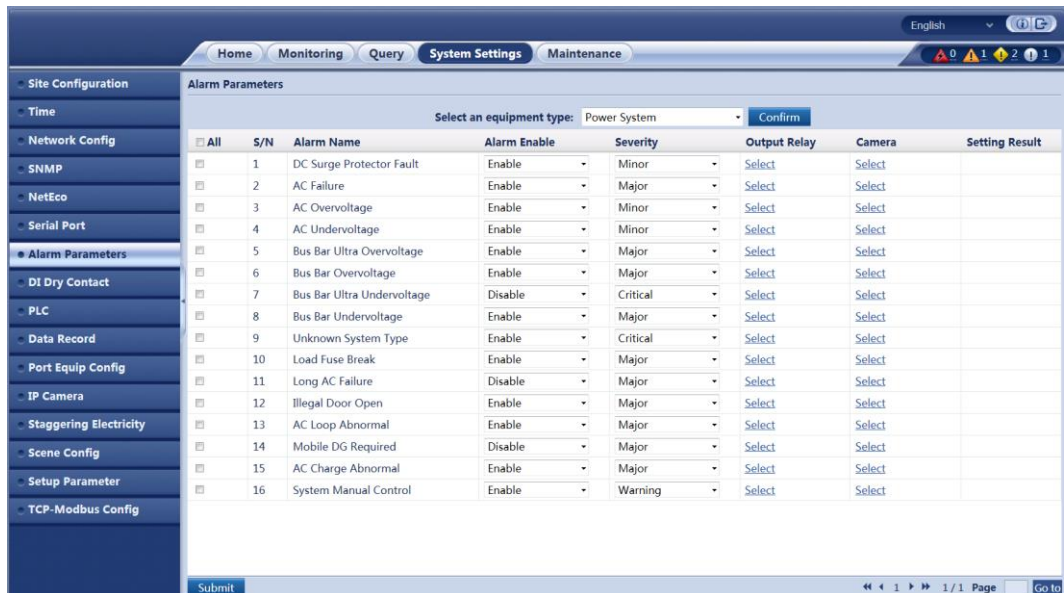
Step 1 Select an equipment type.

Figure 6-6 Selecting an equipment type on the WebUI



Step 2 Associate alarms with dry contact outputs and set severities for the alarms on the alarm list corresponding to **Power System**.

Figure 6-7 Associating alarms and setting alarm severities on the WebUI



6.1.6 Setting Alarm Action for Dry Contact Output

Context

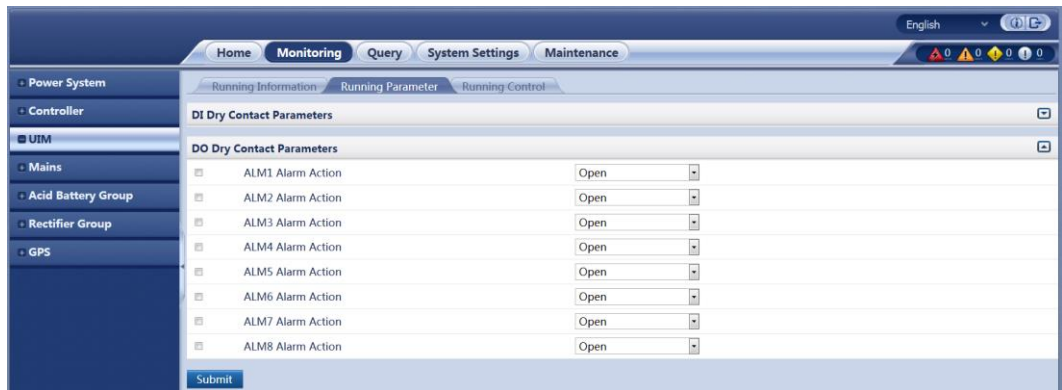
You can set associations between dry contact output status and alarm status. The default association is as follows: If an alarm is generated, the dry contact output is **open**; if no alarm is generated, the dry contact output is **closed**.

LCD Operation

Path: **Parameters Settings > Alarm Parameters > DO Dry Contact Para.**

WebUI Operation

Figure 6-8 Setting alarm actions on the WebUI



6.1.7 Setting Alarm Conditions for Dry Contact Inputs

Context

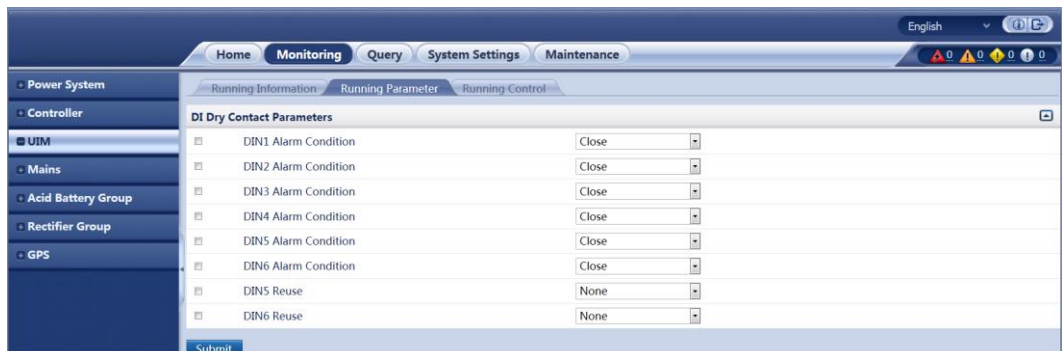
You can set associations between dry contact input status and alarm status. Take the DIN1 as an example. If you set the **DIN1 Alarm Condition** to **Close**, the DCU generates a **DIN1 Alarm** when the DIN1 is closed.

LCD Operation

Path: **Parameters Settings > Alarm Parameters > DI Dry Contact Para.**

WebUI Operation

Figure 6-9 Setting alarm conditions for dry contact inputs on the WebUI



6.2 Common Maintenance Tasks

6.2.1 Backing Up the Current Settings

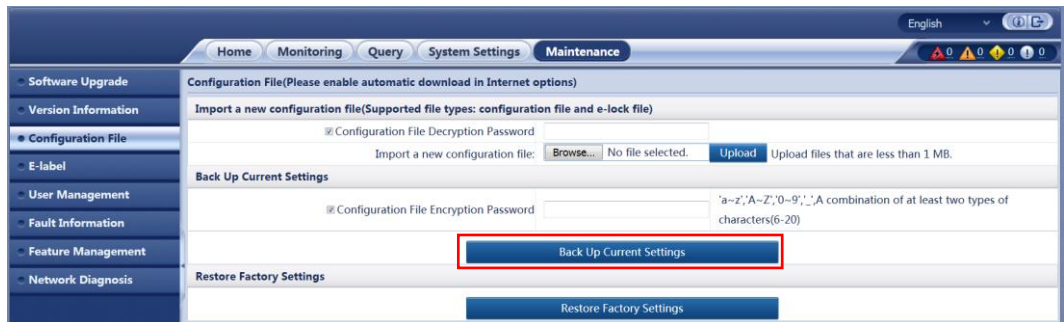
Context

The configuration file contains all the modified configurations for the current system type, such as parameter values and alarm configurations.

You can back up the configuration file to a local computer over the WebUI.

WebUI Operation

Figure 6-10 Backing up the current configuration file on the WebUI



6.2.2 Restoring Factory Defaults



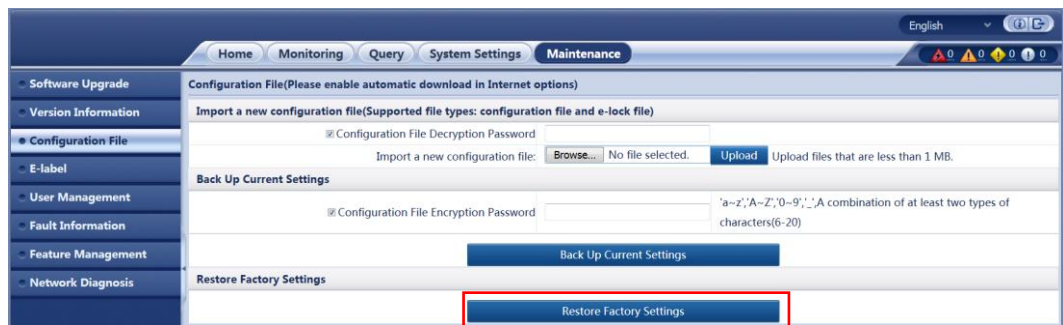
After factory defaults are restored, the DCSC restarts.

After factory defaults are restored, all parameter values change to the default values before delivery. Therefore, you are advised to back up the current configuration file before restoring factory defaults.

You can restore factory defaults over the WebUI. Operator users have no such permission.

WebUI Operation

Figure 6-11 Restoring factory defaults on the WebUI



6.2.3 Upgrading the Software

Context

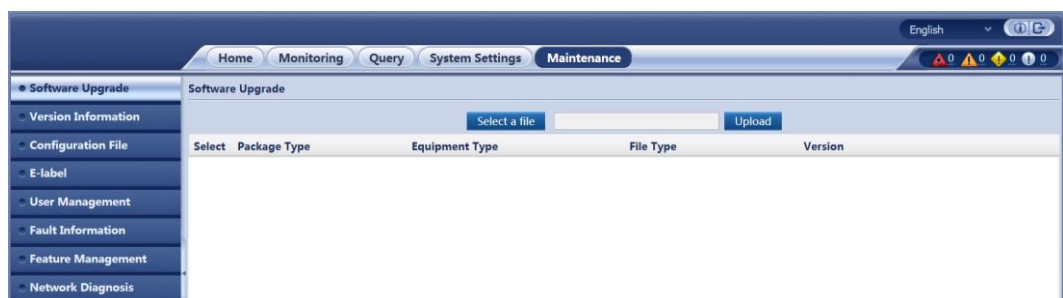
You can upgrade the software for the DCSC and rectifiers on the WebUI. It takes two minutes to upgrade the DCSC. Time for upgrading the rectifiers relates to the number of rectifiers.



After the software is upgraded, the DCSC restarts.

WebUI Operation

Figure 6-12 Upgrading the software on the WebUI



6.2.4 Rebooting the Controller

Context

Resetting the DCSC takes about one minute. During the resetting, the DCSC cannot monitor and manage connected rectifiers, batteries, and other devices. After the DCSC is reset, the configuration file used before the resetting, is automatically loaded. You do not have to reset parameters.

LCD Operation

Set **Reset SMU** to **Yes** on the LCD by navigating through **Running Control > Controller > Reset SMU**.

WebUI Operation

Step 1 Select **Reset SMU** and Click **Submit**.

Figure 6-13 Rebooting Controller on the WebUI



6.2.5 Adding or Deleting Users

Context

The DCSC supports a maximum of three online users. User types are classified into admin, engineer, and operator. Table 6-3 describes the rights of the three usertypes.



After version rollback, the user accounts created are deleted, and the initial user name and password are required for login.

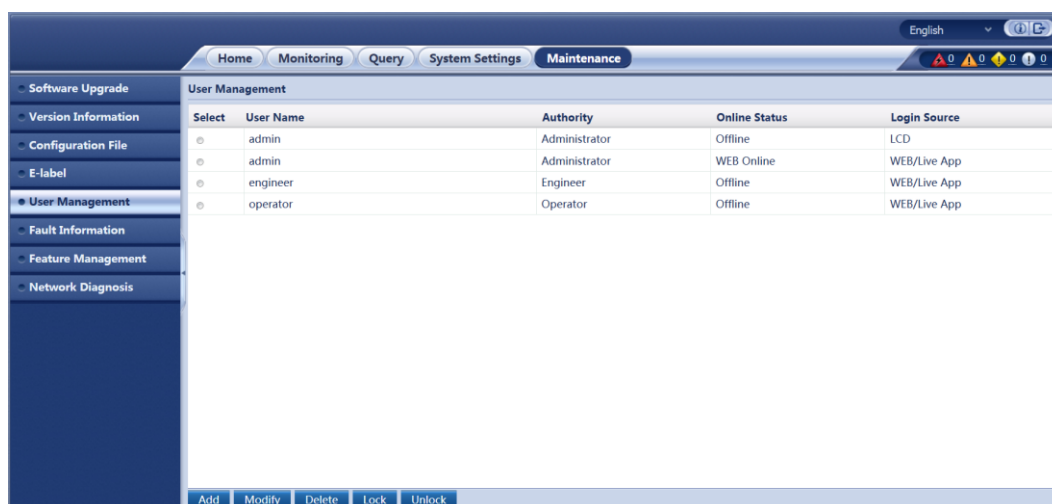
You can set user types only on the WebUI.

Table 6-3 User types and rights

User Type	User Rights	Maximum Number of Users
Admin	Have the rights of viewing, setting, and controlling all attributes and functions.	15 in total
Engineer	Have the same rights as admin users except the right of user management.	
Operator	Have the rights of viewing real-time monitoring information, querying historical data and electronic labels, setting time and IP addresses, configuring data record parameters, backing up configuration files, and exporting faulty information.	

WebUI Operation

Figure 6-14 User management on the WebUI



6.2.6 Changing the User Password

Context

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

Only the system administrator has the right of changing the user password.

LCD Operation

Change the password in compliance with the following principles:

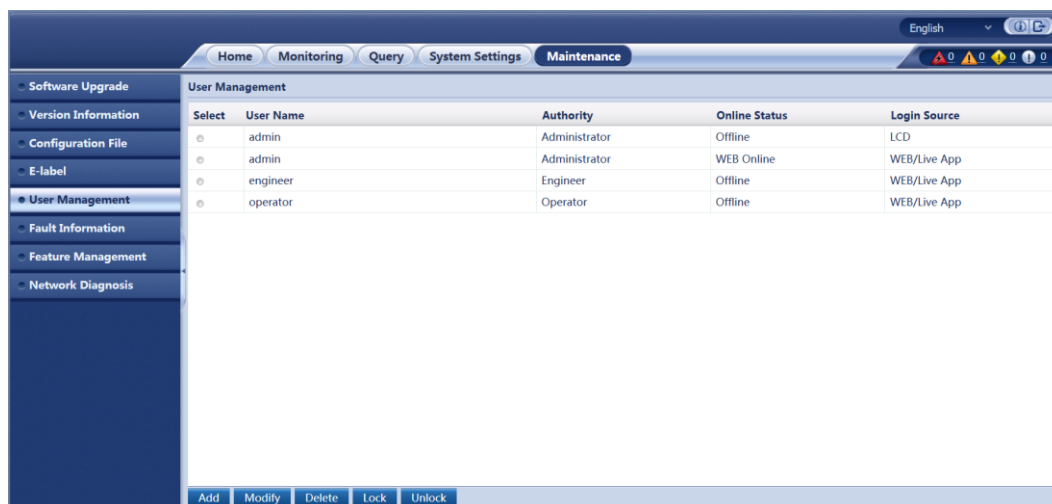
- Six characters are required.
- The password consists of digits, uppercase letters and lowercase letters.

Path: **Parameters Settings > Local Parameters > Change Password**

WebUI Operation

Step 1 After you log in to the WebUI, choose **Maintenance > User Management** to enter the user management page.

Figure 6-15 User management WebUI



Step 2 Select the user whose password needs changing and click **Modify**.

A dialog box is displayed.

Figure 6-16 Changing the user password on the WebUI.

User Management

Old Password

Change Password

New Password

a~z,'A~Z','0~9','!@*_?}'=(6-20 characters of at least two types. Different from the user name or its reverse).

Confirm password

Authority

Password

Step 3 Enter **Old Password**, **New Password**, and **Confirm Password** and click **Confirm**.

 **NOTE**

The administrator needs to enter the **Old Password** only when changing its own password.

Change the password in compliance with the following principles:

- Six characters are required.
- At least two types of the following are required in the password, digits, uppercase letters, lowercase letters, or special characters (` ~ !@ # \$ % ^ & * - _ = + ; : " , . ? or spacing).
- The new password should be different from the old one.
- The password cannot be the same as the user name or its reverse.

6.2.7 Querying Active Alarms

Context

Active alarms are the alarms that are not cleared.

LCD Operation

Choose **Active Alarm** on the LCD to view active alarms.

WebUI Operation

Figure 6-17 Querying active alarms on the WebUI.



All	SN	Severity	Equipment	Alarm Name	Generation Time
<input type="checkbox"/>	29	Major	Rectifier2	Rectifier Power Failure	2019-06-28 08:39:39

6.2.8 Querying and Clearing Historical Alarms

Context

Historical alarms refer to alarms that have been cleared.

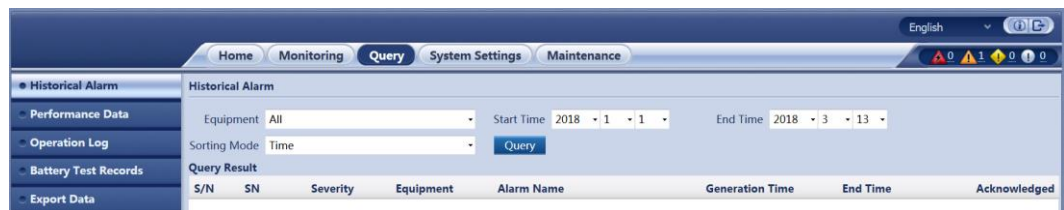
LCD Operation

Set **Delete His. Alarms** to **Yes** in the **Running Control > Clear Alarm > Historical Alarm > Delete His. Alarms** path.

Query historical alarms in the **Running Control > Clear Alarm > Historical Alarm > Active Alarm** path.

WebUI Operation

Figure 6-18 Querying and clearing historical alarms on the WebUI



6.2.9 Manually Controlling a Power System

You can control a power system manually or automatically.

- Automatic mode
This is the default mode. The DCSC automatically controls a power system based on the system configuration.
- Manual mode
You manually control a power system over the DCSC, such as starting or shutting down rectifiers. After remaining in the Manual mode for two hours, the controller automatically changes back to the Automatic mode.

Starting and Shutting Down Rectifiers

Context



NOTICE

Exercise caution when shutting down rectifiers, because such operation will decrease the maximum output power and may disconnect the power supply to loads.

You can manually start or shut down rectifiers only in manual mode.

Parameters

Table 6-4 Rectifier startup/shutdown parameter description

Parameter	Description	Default Value	Value Range
Turn on/off Rectifier	Controls the startup and shutdown for a single rectifier.	On	<ul style="list-style-type: none"> On Off

LCD Operation

Step 1 Set **System Control Mode** to **Manual**.

Path: **Running Control > Power System > System Control Mode**

Step 2 Set **Turn on/off** to **On** or **Off**.

Path: **Running Control > Rectifier > Rectifier1 > Turn on/off**

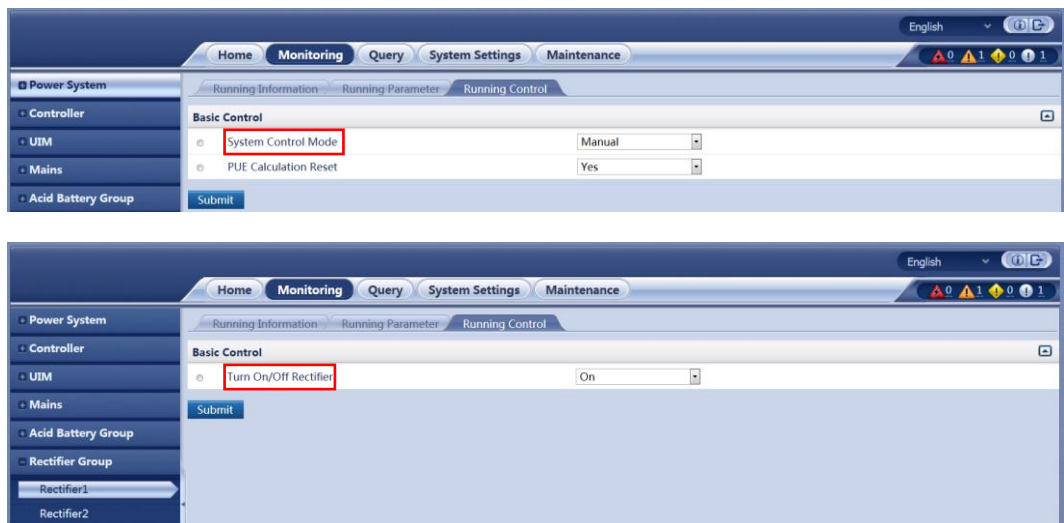
WebUI Operation

To control the startup and shutdown for rectifiers, perform the following steps:

Step 1 Set **System Control Mode** to **Manual** and click **Submit**.

Step 2 Select **Rectifier** from the drop-down list box, set **Turn on/off Rectifier** to **On** or **Off** and click **Submit** to start or shut down a single rectifier. Figure 6-27 shows the page for starting a single rectifier.

Figure 6-19 Starting a single rectifier on the WebUI



Setting Parameters

Procedure

Step 1 Apply to the site or equipment room network administrator for a fixed IP address.

Step 2 Set the IP address, subnet mask, and gateway on the LCD, as shown in Table 7-1.

Table 7-1 IP parameters

Main Menu	Second-Level Menu	Third-Level Menu	Default Value	Setting Value
Setting Wizard	Network Parameters	IP Address	192.168.0.10	Set this parameter according to the address assigned by the network administrator.
		Subnet Mask	255.255.255.0	Set this parameter according to the subnet mask provided by the network administrator.
		Default Gateway	192.168.0.1	Set this parameter according to the gateway address provided by the network administrator.

7.1.2 Setting SNMP Parameters

Prerequisites



NOTE

You can set SNMP parameters on the WebUI locally or remotely.

Before setting SNMP parameters, obtain the information listed in Table 7-2 from the EMS.

Table 7-2 Information obtained from the EMS

Information	Description
SNMP version	SNMP version and port number used by the DCSC and EMS. The SNMP versions include SNMPv1 , SNMPv2c , and SNMPv3 .
SNMP Port Number	

Information	Description
Read Community Name	If you use SNMPv1 or SNMPv2c, enter the read community name and write community name that comply with the EMS. Otherwise, the DCSC will not connect to the EMS.
Write Community Name	
User Name	To enhance the security, you need a username and password for authentication if you use SNMPv3. After the authentication succeeds, the DCSC can communicate with the EMS.
MD5 Password	
DES Password	
Trap Target Address	IP address and port number reported in the alarm trap.
Trap Port	

Procedure

- Step 1** Enter “https://”, followed by the IP address for the DCSC in the address box of Internet Explorer. Log in to the WebUI on the login page shown in Figure 7-2.



NOTE

The preset user name is **admin** and preset password is **Changeme**.

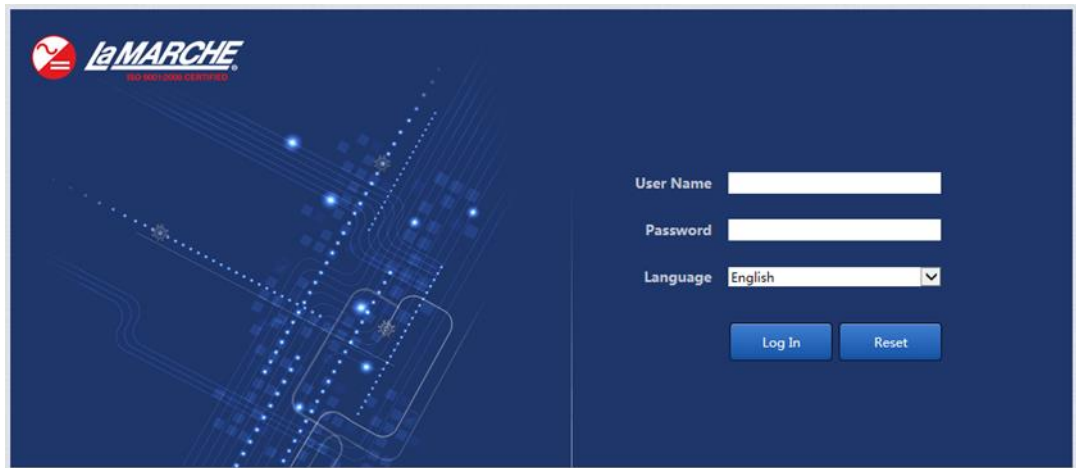


Figure 7-2 Login page

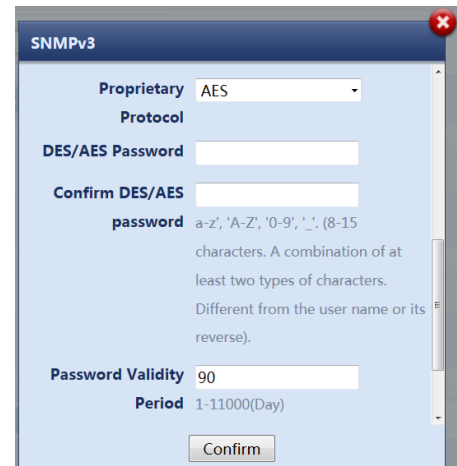
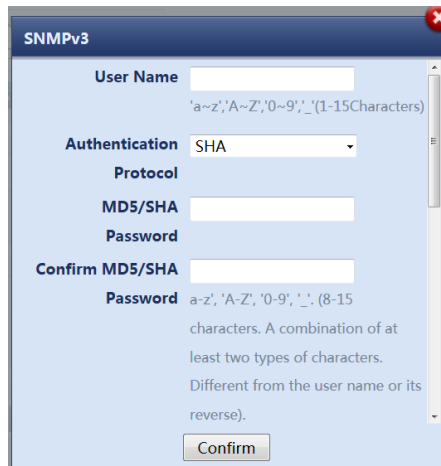
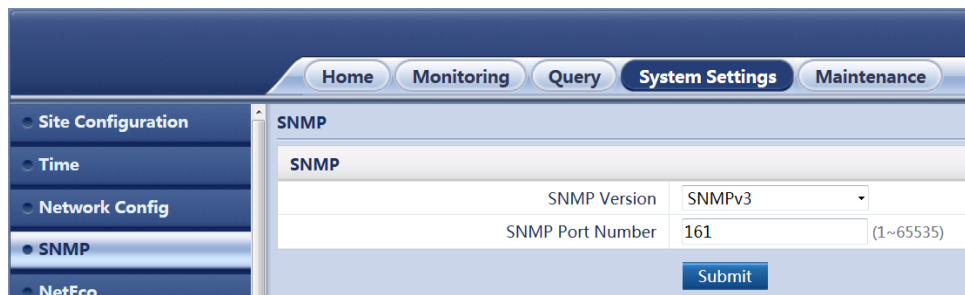
- Step 2** On the **System Settings** tab page, select **SNMP**.
- ☒ If the SNMP version is SNMPv1 or SNMPv2, set **SNMP Version** to **SNMPv1&SNMPv2c** under **SNMP**, and then set **SNMP Port Number**, **Read Community Name**, and **Write Community Name**, as shown in Figure 7-3.

Figure 7-3 Setting SNMPv1 and SNMPv2c parameters



- If the SNMP version is SNMPv3, set **SNMP Version** to **SNMPv3** under **SNMP**, click **Add** under **SNMPv3**, and then set **User Name**, **MD5 Password**, and **DES Password**.

Figure 7-4 Setting SNMPv3 parameters



Step 3 Under **SNMP Trap**, click **Add**, then set **Trap Target Address** and **Trap Port**.

Step 4 Under **Mib files**, click **Export** to export the Mib file and import it to the EMS.

NOTE

If there is only one EMS, perform Step 4 once.

8 Feature Description

8.1 Rectifier Management

8.1.1 (Optional) Starting Rectifiers Sequentially

Principles

Rectifiers start one by one based on the preset time interval, which avoids the impact on batteries and rectifier input circuit breakers.

This function applies only to the rectifiers that communicate over CAN.

Parameters

Table 8-1 Parameter description for sequential rectifier startup

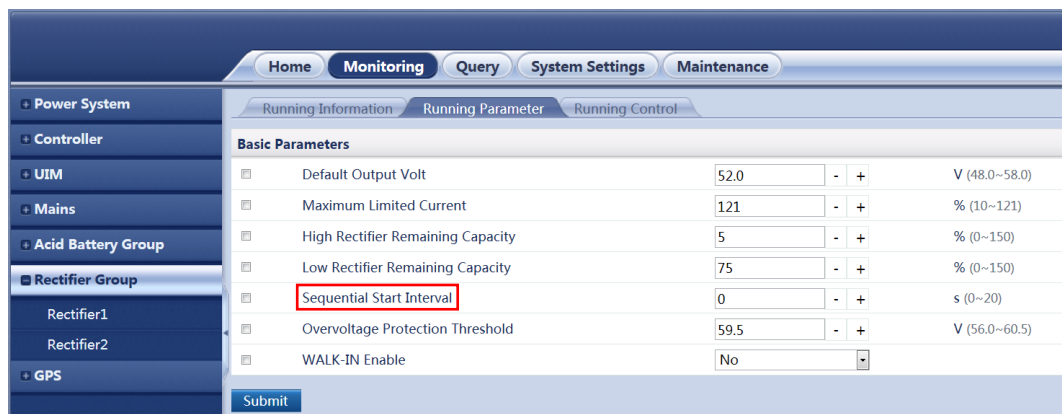
Parameters	Description	Default Value	Value Range
Sequential Start Interval	Time interval between the rectifiers that are started sequentially	0s	0–20

LCD Operation

Setting Sequential St. Int. on the LCD UI **Parameters Settings > Rectifier**.

WebUI Operation

Figure 8-1 Setting Sequential Start Interval on the WebUI

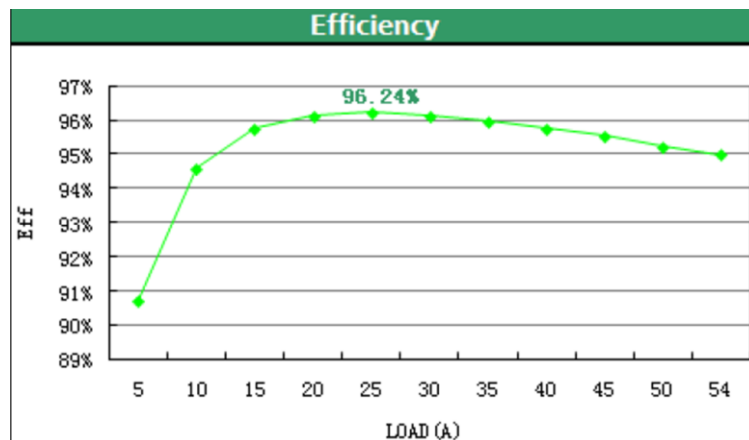


8.2 Energy Conservation Management

8.2.1 Intelligent Rectifier Hibernation

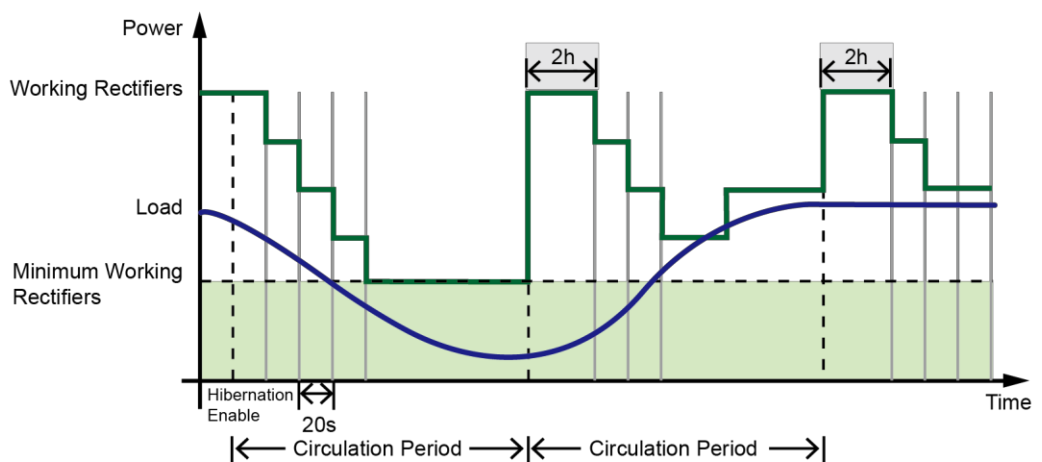
The rectifier efficiency increases in proportion to the load power. If the total load power is low, certain rectifiers can hibernate to improve the load power of running rectifiers and increase the rectifier efficiency. This facilitates energy conservation. In addition, rectifier service life is prolonged because rectifier runtime is reduced. Figure 8-2 shows a rectifier efficiency curve.

Figure 8-2 R4850G1 efficiency curve



The DCSC controls the rectifier startup and hibernation based on the loading capacity of the power system. If the load power decreases, the DCSC puts certain rectifiers into hibernation. If the load power increases, the DCSC starts rectifiers to meet load power requirements. To ensure that all rectifiers deteriorate to the same degree, the DCSC puts different rectifiers into or out of hibernation alternately based on their real-time efficiency and runtime. See Figure 8-3.

Figure 8-3 Rectifier hibernation periods.



If the power system experiences an exception (such as battery loop disconnection, battery overtemperature, and AC exceptions), all rectifiers stop hibernation. The rectifiers start hibernation again after the exception is rectified. If the exceptions persist and rectifiers exist hibernation from time to time, the DCSC disables the rectifier hibernation function. After the **Hibernation Stop Duration** expires, the rectifiers start hibernation again.

Parameters

Table 8-2 Parameter description for intelligent rectifier hibernation

Parameter	Description	Default Value	Value Range
Rectifier Hibernation Enable	<ul style="list-style-type: none"> • No: Hibernation is disabled • Yes: The DCSC puts rectifiers into hibernation when the hibernation condition is met. 	No	<ul style="list-style-type: none"> • Yes • No
Hibernation Mode NOTE This parameter is displayed and valid only when Hibernation Enable is Yes .	<ul style="list-style-type: none"> • Time Mode: Rectifiers with shorter runtime take precedence for work. • High Efficiency Mode: Rectifiers with higher real-time efficiency take precedence for work. • Intelligent Mode: The DCSC puts rectifiers into hibernation based on the runtime and real-time efficiency. 	Intelligent Mode	<ul style="list-style-type: none"> • Intelligent Mode • Time Mode • High Efficiency Mode
Minimum Working Rectifiers NOTE This parameter is displayed and valid only when Hibernation Enable is Yes .	The minimum number of operating rectifiers after hibernation is enabled	2	1–100
Circulation Period NOTE This parameter is displayed and valid only when Hibernation Enable is Yes .	Period for alternating hibernated rectifiers with unhibernated rectifiers. At the end of the period, the DCSC starts all rectifiers and make them run for 2 hours, and then hibernate rectifiers again.	7 Day	1–365
Best Efficiency Point NOTE This parameter is displayed and valid only when Hibernation Enable is Yes .	Percentage of rectifier loading capacity to rated capacity, at which the rectifier reaches its highest efficiency.	80%	50–100
Min. RedundantCoefficient NOTE This parameter is displayed and valid only when Hibernation Enable is Yes .	Ratio of the minimum redundant current to the rated rectifier current For example, if the rated rectifier current is 50 A and you need a 10 A redundant current, set Min. Redundant Coefficient to 0.2 (10 A/50 A).	0.20	0.05–1.00

Parameter	Description	Default Value	Value Range
Phase Balance NOTE This parameter is displayed and valid only when Hibernation Enable is Yes .	In a three-phase power system, if the configuration of rectifiers meets the three-phase balance requirement, and intelligent rectifier hibernation is enabled, rectifiers corresponding to the three phases try to hibernate. <ul style="list-style-type: none"> • Absolute Balance: The working rectifiers corresponding to any two phases must be of the same quantity. • Relative Balance: The quantity difference between the working rectifiers corresponding to any two phases must be less than or equal to 1. 	Disable	<ul style="list-style-type: none"> • Disable • Relative Balance • Absolute Balance
Hibernation Without Battery NOTE This parameter is displayed and valid only when Hibernation Enable is Yes .	Indicates whether to enable hibernation when batteries are not connected. NOTICE If you enable hibernation when batteries do not connect to the power system, the loads may experience power failures. Exercise caution when performing this function.	No	<ul style="list-style-type: none"> • Yes • No
Hibernation Stop Duration NOTE This parameter is displayed and valid only when Hibernation Enable is Yes .	All rectifiers exit from hibernation if the power system experiences an exception. After the exception is eliminated, the duration preset by Hibernation Stop Duration starts. After the duration expires, rectifiers try to hibernate again.	72.0 h	<ul style="list-style-type: none"> • 0.5–168.0
Sequential Start Interval	Time interval between the rectifiers that are started sequentially	0 s	<ul style="list-style-type: none"> • 0–20
WALK-IN Enable	Enables or disables rectifier walk-in.	No	<ul style="list-style-type: none"> • Yes, No

LCD Operation

LCD operation navigation path: **Parameters Settings > Energy Saving.**

WebUI Operation

Figure 8-4 Hibernating rectifiers intelligently

The screenshot displays a web-based configuration interface for a power system. The navigation menu includes 'Home', 'Monitoring', 'Query', 'System Settings', and 'Maintenance'. The 'Monitoring' section is active, showing 'Running Information', 'Running Parameter', and 'Running Control'. The 'Basic Parameters' section is expanded to show 'Hibernation Parameters'. The 'Hibernation Mode' is highlighted with a red box and set to 'Intelligent Mode'. Other parameters include 'Hibernation Enable' (Yes), 'Minimum Working Rectifiers' (2), 'Circulation Period' (7), 'Best Efficiency Point' (55), 'Min. Redundant Coefficient' (0.20), 'Hibernation Without Battery' (No), and 'Hibernation Stop Duration' (72.0).

Parameter	Value	Unit/Range
Hibernation Enable	Yes	
Hibernation Mode	Intelligent Mode	
Minimum Working Rectifiers	2	(1~100)
Circulation Period	7	Day (1~365)
Best Efficiency Point	55	% (10~100)
Min. Redundant Coefficient	0.20	(0.05~1.00)
Hibernation Without Battery	No	
Hibernation Stop Duration	72.0	h (0.5~168.0)

Submit

8.3 Power Segment Management

When the system output power is insufficient due to the faulty AC input or rectifiers, batteries power the loads. To prolong the operating duration of primary loads and avoid reducing the battery lifespan due to over discharge, the DCSC controls BLVD based on preset power disconnection parameters.

After the AC input or the rectifiers are restored, the DCSC connects BLVD routes again.

The power distribution design of the power system allows the DCSC to perform power segment. You can set disconnection parameters based on load type to disconnect secondary loads first, and then primary loads. This effectively extends the backup time for primary loads.



NOTICE

- After the BLVD route is disconnected, the power system does not power loads.
 - You can disable BLVD, but batteries may be damaged due to overdischarge.
-

Figure 8-5 shows the hardware connections for power segment. Figure 8-6 shows the power segment logic diagram.

Figure 8-5 Hardware connections for power segment

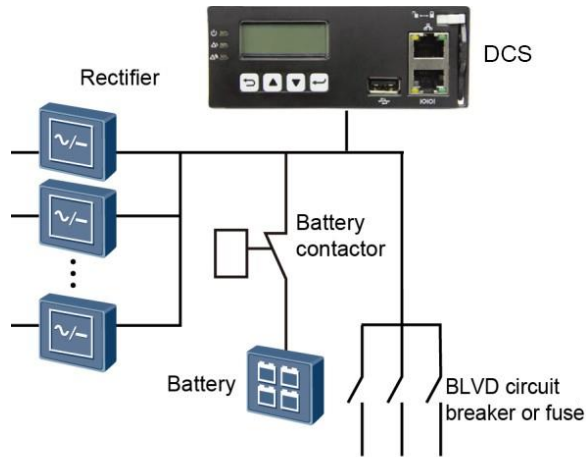
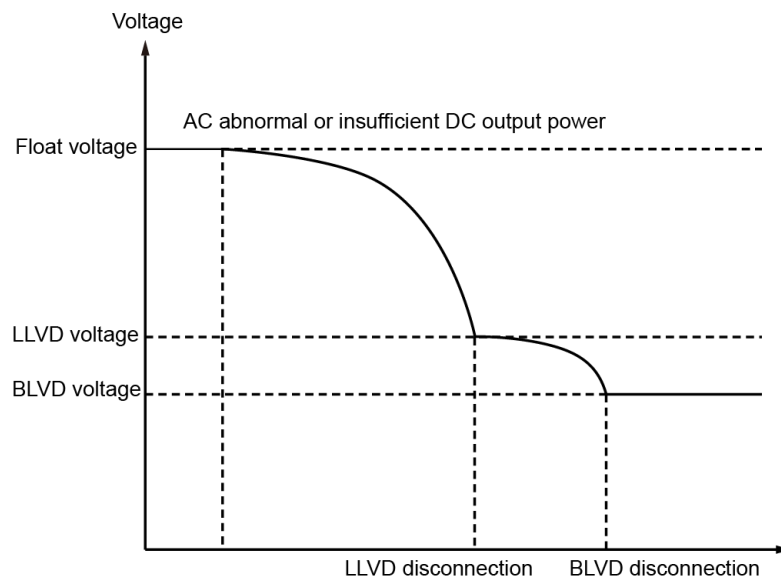


Figure 8-6 Power segment logic diagram



Parameters

Table 8-3 BLVD parameter description

Parameter	Description	Default Value	Value Range
BLVD Enable	Enable or disable the DCSC to control BLVD.	Yes	Yes No
BLVD Open Voltage	If the battery voltage is below the value of this parameter, the BLVD route is disconnected. NOTE The value of BLVD Voltage must be lower than the value of BLVD Connection Voltage .	43.2 V	35.0–56.0

Parameter	Description	DefaultValue	Value Range
BLVD Close Voltage	If the system voltage exceeds the value of this parameter, the BLVD route is connected. NOTE The value of BLVD Connection Voltage must be higher than the value of BLVD Voltage .	51.5 V	37.0–58.0
BLVD Delay Time	After the BLVD Warning alarm is generated, the LLVD route is disconnected after the BLVD Delay Time .	60s	5-90

LCD Operation

To set BLVD parameters, perform the following steps:

Step 1 Set **BLVD Enable** to **Yes**.

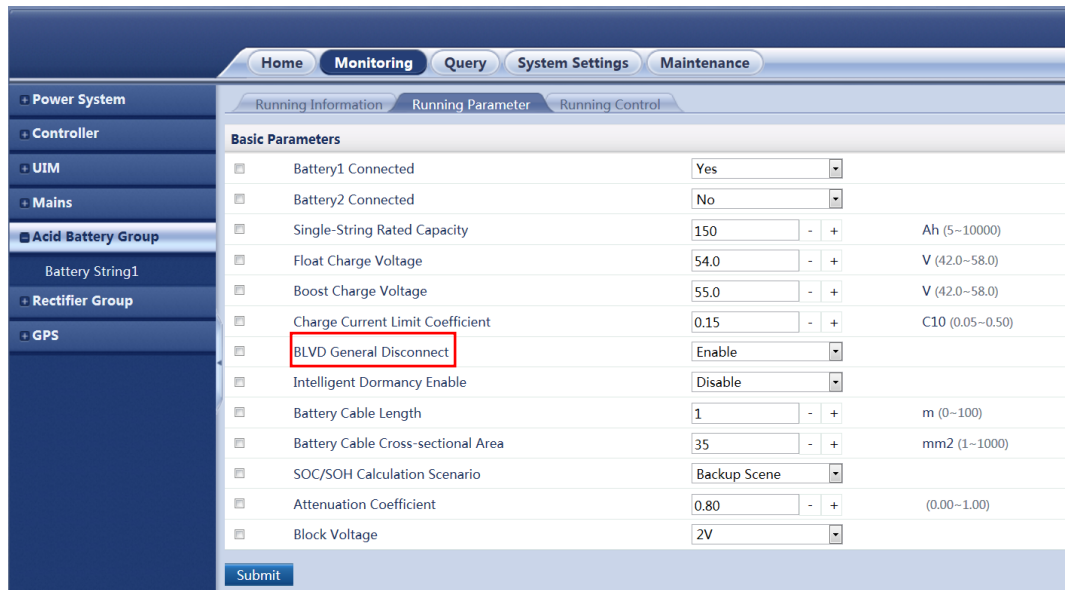
Step 2 Set **BLVD Mode** as required.

Step 3 Set BLVD parameters on the LCD by navigating through **Parameters Settings > Acid Battery > BLVD Parameters**.

WebUI Operation

Step 1 Set BLVD parameters and click **Submit**. Figure 8-7 shows the WebUI.

Figure 8-7 Setting BLVD Enable on the WebUI



8.4 Lead-Acid Battery Management

8.4.1 Charging Management

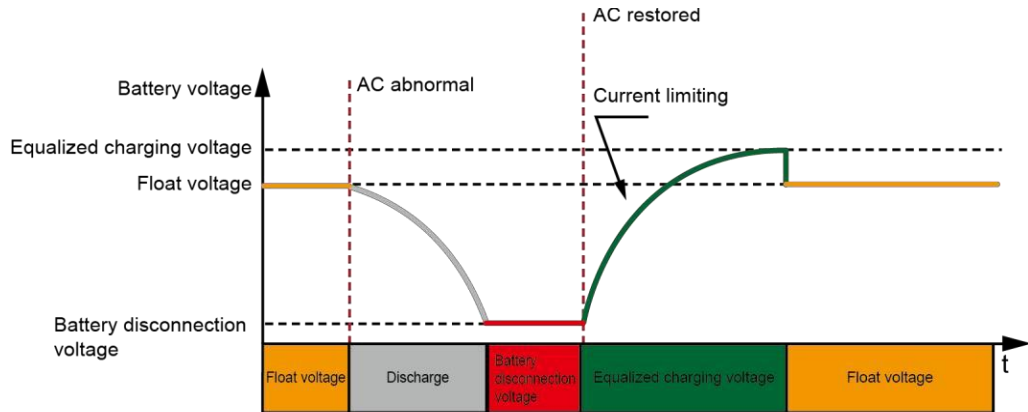
If the AC input to the power system is normal and meets load requirements, rectifiers supply DC power to loads and charge batteries. If the AC input is abnormal or rectifiers are overloaded or faulty, batteries supply power to loads. After the fault is rectified, rectifiers continue to supply DC power and charge batteries.

The DCSC enables batteries to be switched between float charging and boost charging by adjusting the output voltage.

- Float charging: The DCSC compensates the electricity consumed by self-discharge after full charge.
- Boost charging: The DCSC fully charges batteries rapidly by increasing the output voltage. During boost charging, the DCSC limits the rectifier output current to avoid battery damage caused by over large charge current.

Figure 8-9 shows the battery charge process.

Figure 8-9 Battery charge process



PC03P00001

The DCSC supports the following boost charging modes, also the modes in which float charging converts to boost charging, as described in Table 8-5.

Table 8-5 Boost charging mode description

Mode	Started When	Terminated When
Automatic boost charging	<p>Any of the following conditions is met:</p> <ul style="list-style-type: none"> • The battery charge current exceeds the preset value. • The battery capacity is below the preset value. • The AC power failure duration exceeds the preset value. • The scheduled period starts. <p>The DCSC charges batteries periodically in boost mode. After each time of boost charging is complete, the DCSC determines the start time of the next period.</p>	<p>Terminated automatically:</p> <p>Any of the following conditions is met:</p> <ul style="list-style-type: none"> • The battery charge current is below the preset value. • The boost charging duration exceeds the preset value. • The scheduled charging time arrives. <p>Terminated abnormally:</p> <p>The DCSC stops boost charging when detecting exceptions about AC inputs, rectifiers, or batteries such as high battery temperatures.</p>

Parameters

Table 8-6 Boost/Float charging parameter description

Parameter	Description	Default	Value Range
Automatic Boost Charge Enable	Indicates whether to enable automatic boost charging.	Yes	<ul style="list-style-type: none"> • Yes • No
Float to Boost Charge CurrentCoefficient	If the duration within which the battery charge current is higher than Float to Boost Charge Current Coefficient exceeds the value of Float to Boost Charge Current Duration , batteries automatically enter boost charging.	0.05 C10	0.01–0.25
Float to Boost Charge CurrentDuration		30 Min	2–1440
Float to Boost Charge CapacityPercent	If the battery charge capacity is lower than Float to Boost Charge Capacity Percent , batteries automatically enter boost charging.	80%	50-100
ScheduledBoost Charge Enable	Indicates whether to enable scheduled boost charging.	Yes	<ul style="list-style-type: none"> • Yes • No
ScheduledBoost Charge Interval	Period for scheduled boost charging	30 Day	1–365
ScheduledBoost Charge Duration	Duration for each scheduled boost charging period	9 h	1–24
Boost to Float Charge CurrentCoefficient	If the duration within which the battery charge current is lower than Boost to Float Charge CurrentCoefficient exceeds the value of Boost to Float Charge CurrentDuration , batteries automatically enter float charging.	0.01 C10	0.01–0.25
Boost to Float Charge CurrentDuration		30 Min	2–540
Boost Charge Maximum Duration	If the boost charging duration exceeds the value of this parameter, batteries automatically enter float charging.	16 h	5–48
Mains Recovery Boost Charge Enable	Indicates whether to perform boost charging after the AC power is restored.	No	<ul style="list-style-type: none"> • Yes • No

LCD Operation

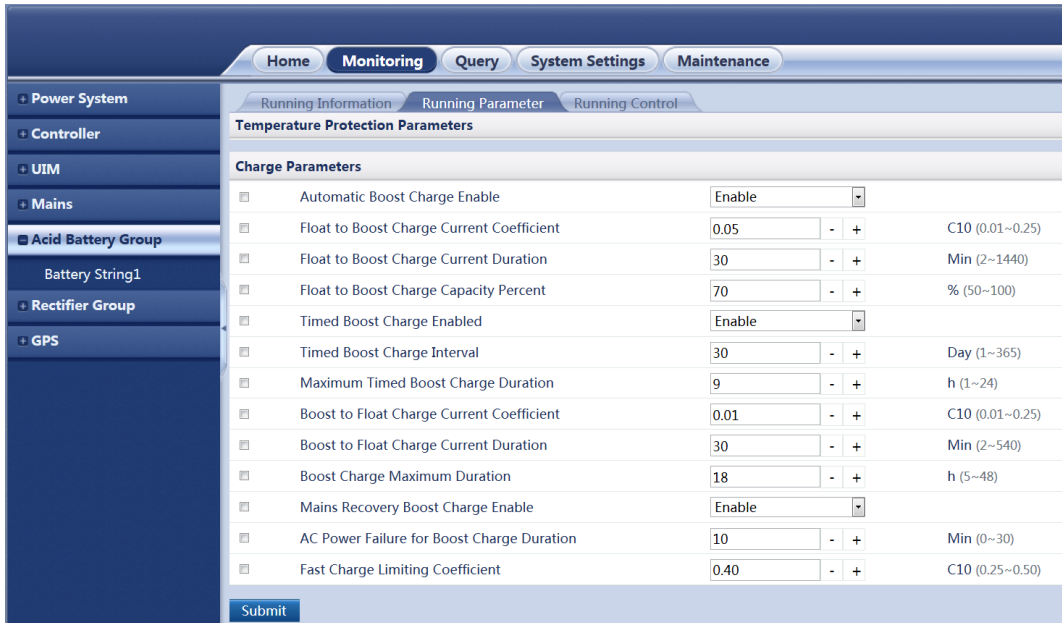
Set automatic boost charging on the LCD by navigating through **Parameters Settings > Acid Battery > Charge Parameters**.

WebUI Operation

Figure 8-10 Setting basic battery parameters on the WebUI



Figure 8-11 Setting charging parameters on the WebUI



8.4.2 Temperature Compensation

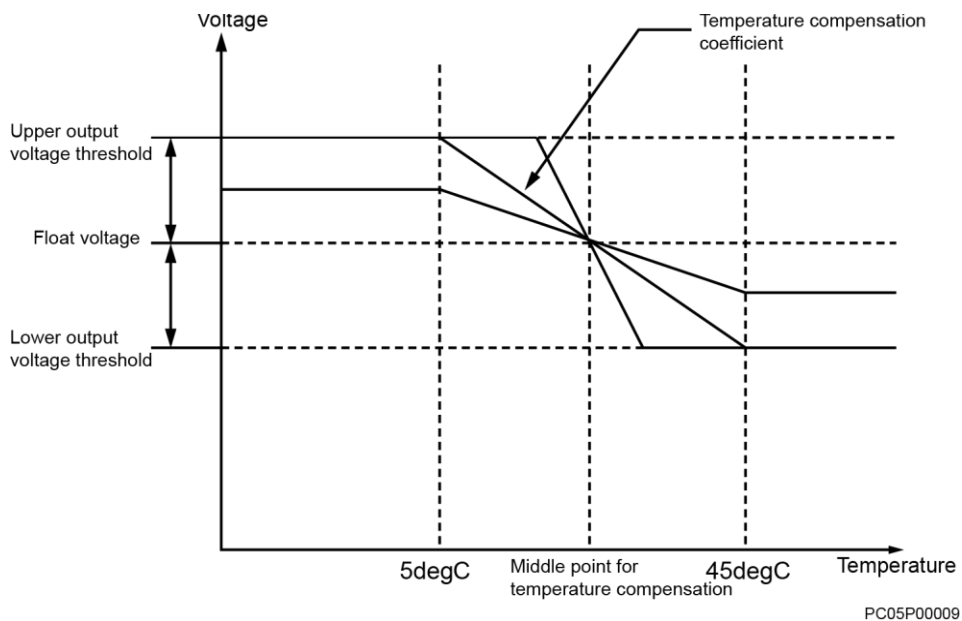
To reduce the effect of ambient temperatures on batteries, prolong the battery lifespan, and maintain a reliable charge current, the DCSC adjusts the output voltage based on the optimal operating temperature, present battery temperature, and temperature compensation coefficient.

If the ambient temperature rises, the DCSC decreases the output voltage. If the ambient temperature decreases, the DCSC increases the output voltage. The temperature compensation range for a common lead-acid battery is 51.5 to 55.5 V and for a temperature cycle battery (TCB) is 52.3 to 56.3 V.

Temperature compensation is valid only when batteries are being charged in float mode or hibernating. For details about intelligent battery hibernation, see 8.4.4 Intelligent Battery Hibernation. The DCSC does not perform temperature compensation if the battery temperature sensor is disconnected or faulty.

Figure 8-12 shows the temperature compensation control logic.

Figure 8-12 Temperature compensation control logic



NOTE

Output voltage = Float voltage - (Present battery temperature - Temperature at the temperature compensation central point) x Temperature compensation coefficient

Parameters

Table 8-7 Temperature compensation parameter description

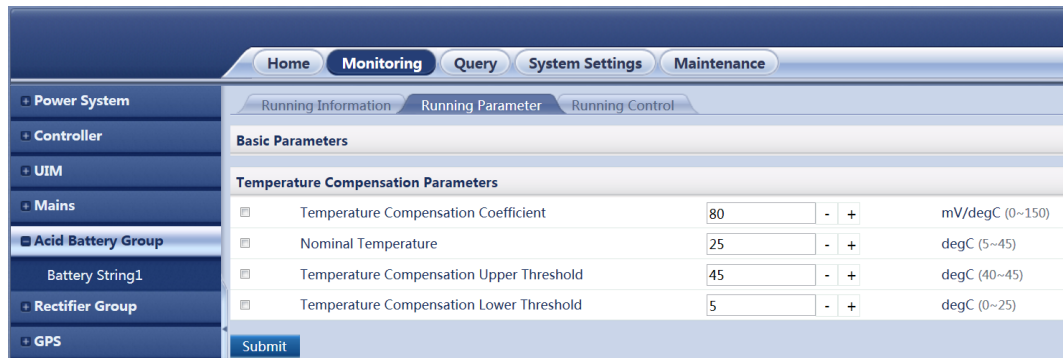
Parameter	Description	Default Value	Value Range
Temperature Compensation Coefficient	Amplitude of the battery float charge voltage that needs to be adjusted for each change of 1°C Set this parameter based on the temperature compensation coefficient for a 48 V battery string and battery specifications. For example, a 48 V battery string contains 24 cells and the temperature compensation coefficient for each cell is 3 mV/°C. Therefore, the parameter is set to 80 mV (3 x 24).	80 mV/degC NOTE The default value varies depending on the power system type.	0–500
Nominal Temperature	Temperature central point for temperature compensation Set this parameter based on battery specifications.	25 degC NOTE This default value varies in accordance with the battery performance. 35degC is set by default for the TCBs.	5–45
Temperature Compensation UpperThreshold	The highest temperature for temperature compensation	45 degC	40-45
Temperature Compensation Lower Threshold	The lowest temperature for temperature compensation	5 degC	5-10

LCD Operation

Set temperature compensation parameters on the LCD by navigating through **Parameters Settings > Battery > Temp. Comp. Parameters**.

WebUI Operation

Figure 8-13 Setting temperature compensation parameters on the WebUI



8.4.3 Standard Battery Test

The DCSC supports multiple standard battery test modes to detect battery performance and health. Table 8-8 describes the standard battery test modes.

Table 8-8 Standard battery test mode description

Mode	Started When	Charge Process	Discharge Process	Terminated When
Test by time <ul style="list-style-type: none"> • Tested on schedule • Tested as planned 	<ul style="list-style-type: none"> • Tested on schedule The scheduled test start time arrives. • Tested as planned The planned test start time arrives. 	You can choose whether to enable pre-boost charging. If you enable pre-boost charging, the DCSC charges batteries in boost mode before starting a standard battery test, and then tests the discharge after the batteries are fully charged. This ensures the accuracy of battery test data.	You can choose whether to enable the constant current test. If you enable the constant current test, batteries are discharging in constant current. This avoids battery damage caused by large discharge currents.	Any of the following conditions is met: <ul style="list-style-type: none"> • The standard battery test duration reaches the test end time. • The battery capacity is below the preset test end capacity. • The battery voltage is below the preset test end voltage. • The battery temperature exceeds the preset test end temperature. • The DCSC generates an alarm.

The DCSC records the standard battery test process in details and generates a test report after the test ends. You can query the test result over the LCD or WebUI or export it over the WebUI.

Parameters

Table 8-9 describes the standard battery test parameters. Table 8-10 lists the content in the battery test report.

Table 8-9 Standard battery test parameter description

Parameter	Description	Default Value	Value Range
AC Fail Test Enable	Indicates whether to allow a standard battery test to be performed when an AC power failure occurs.	No	<ul style="list-style-type: none"> • Yes • No

Parameter	Description	Default Value	Value Range
Time Test Mode	The mode in which the DCSC starts an automatic test periodically or by time	Disable	<ul style="list-style-type: none"> • Disable • Planned Test • Scheduled Test
Scheduled Test Start Time NOTE This parameter is displayed and valid only when Time Test Mode is Scheduled Test .	Time when a scheduled test starts	21:00:00	HH:MM:SS
Scheduled Test Period NOTE This parameter is displayed and valid only when Time Test Mode is Scheduled Test .	Period of a scheduled test	90 Day	2–999
Pre-Boost Charging Enable	Indicates whether to allow the DCSC to charge batteries in boost mode before a standard battery test starts.	Yes	<ul style="list-style-type: none"> • Yes • No
Test End Voltage	If the battery voltage is below the value of this parameter, the battery test ends.	46.0 V	44.2–53.0
Test End Capacity	If the battery capacity is below the value of this parameter, the battery test ends.	20%	0–99
Test End Temperature	If the battery temperature exceeds the value of this parameter, the battery test ends.	5degC	-5–15
Test End Time	If the standard battery test duration reaches the value of this parameter, the battery test ends.	480Min	1–6000

Table 8-10 Battery test report parameter description

Parameter	Description
Start Time	Time when a battery test starts
End Time	Time when a battery test ends
Test Type	Type of a battery test
Stop Reason	Reason why a battery test ends
Test Result	Result of a battery test
End Voltage (V)	Charge voltage when a battery test ends
Average Discharge Current (A)	Average discharge current during a battery test
Discharge Capacity (Ah)	Amount of electricity discharged during a battery test
Battery Temperature (degC)	Battery temperature when a battery test ends

LCD Operation

Set standard battery test parameters on the LCD by navigating through **Parameters Settings > Acid Battery > Standard Test Para.**

Set manually start or terminate a standard battery test on the LCD by navigating through **Parameters Settings > Acid Battery > Standard Test Para. > Time Test Mode**

Query standard battery test results on the LCD by navigating through **Running Information > Acid Battery > Battery Test Records**

WebUI Operation

The following figure shows how to set standard battery test parameters:

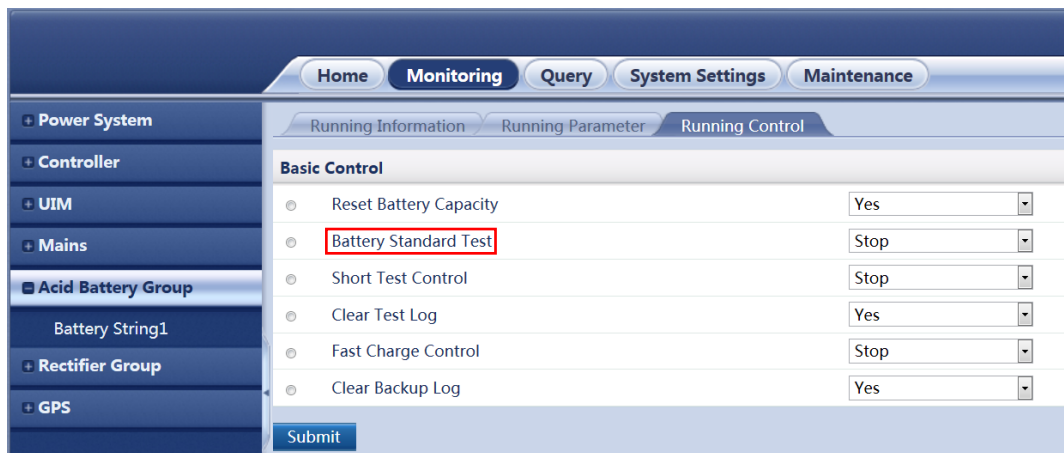
Figure 8-14 Setting standard battery test parameters

Standard Test Parameters			
<input type="checkbox"/>	AC Fail Test Enable	Disable	
<input type="checkbox"/>	Time Test Mode	Scheduled Test	
<input type="checkbox"/>	Scheduled Test Start Time	21:00:00	HH:MM:SS
<input type="checkbox"/>	Scheduled Test Period	90	Day (2~999)
<input type="checkbox"/>	Pre-Boost Charging Enable	Enable	
<input type="checkbox"/>	Constant Current Test Enable	Enable	
<input type="checkbox"/>	Constant Test Current	9999	A (1~9999)
<input type="checkbox"/>	Test End Voltage	46.0	V (44.2~53.0)
<input type="checkbox"/>	Test End Capacity	20	% (0~99)
<input type="checkbox"/>	Test End Temperature	5	degC (-5~15)
<input type="checkbox"/>	Test End Time	480	Min (1~6000)

Submit

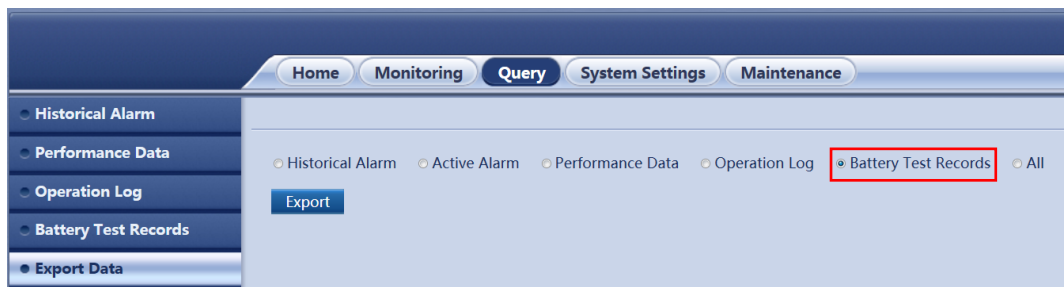
The following figure shows how to manually start or terminate a standard battery test:

Figure 8-15 Manually starting or terminating a standard battery test



The following figure shows how to query standard battery test results:

Figure 8-16 Exporting standard battery test results



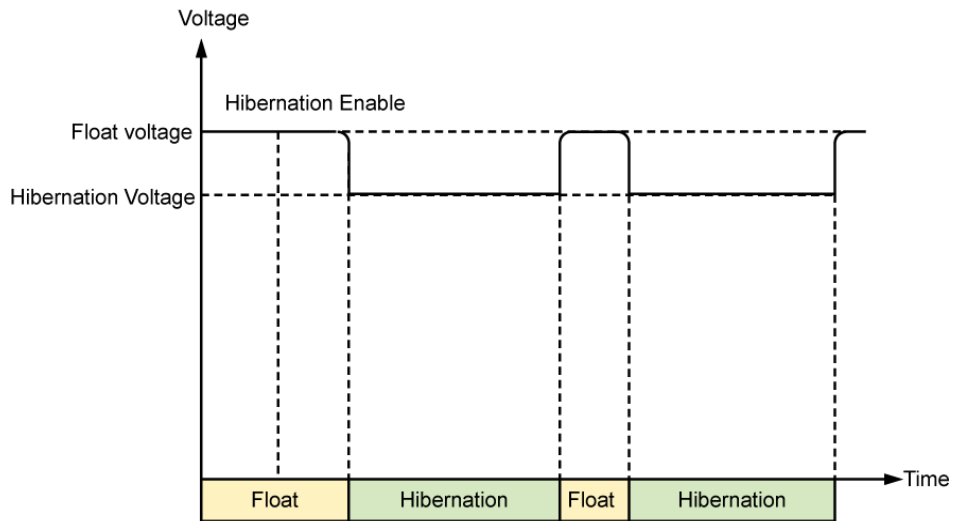
8.4.4 Intelligent Battery Hibernation

When the power grid quality is reliable, the DCSC periodically lowers the charge voltage to hibernate batteries, slowing down battery deterioration.

The DCSC evaluates the power grid operating status through statistics and selects an optimal battery hibernation management mode to increase the battery lifespan.

Figure 8-17 shows the control logic for intelligent battery hibernation.

Figure 8-17 Control logic for intelligent battery hibernation



Parameters

Table 8-11 Intelligent battery hibernation parameter description

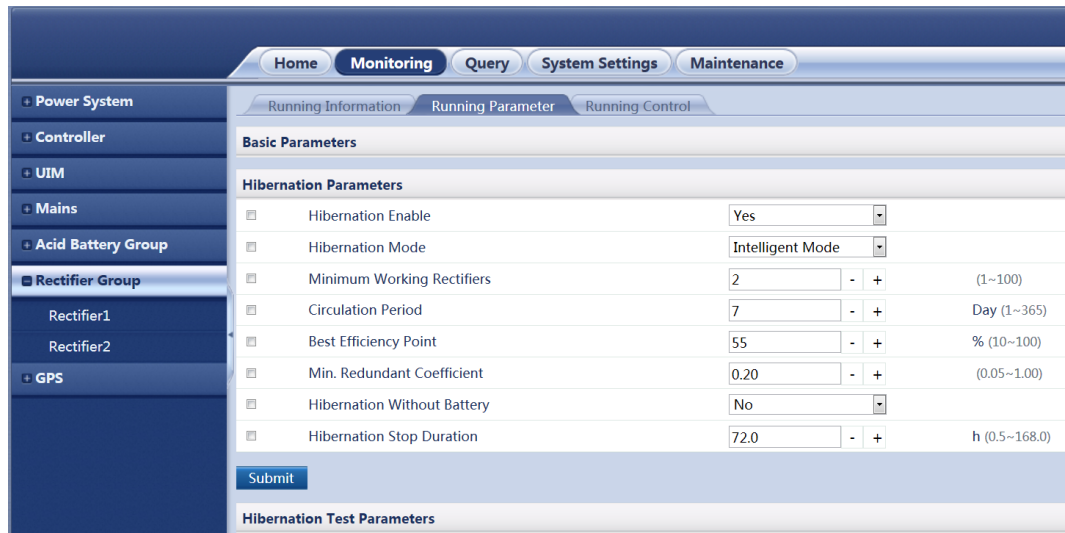
Parameter	Description	Default Value	Value Range
Hibernation Enable	Indicates whether to enable intelligent battery hibernation management.	No	<ul style="list-style-type: none"> • Yes • No

LCD Operation

Set **Hibernation Enable** to **Yes** or **No** to enable or disable intelligent battery hibernation on the LCD by navigating through **Parameters Settings > Energy Saving**.

WebUI Operation

Figure 8-18 Setting intelligent battery hibernation parameters

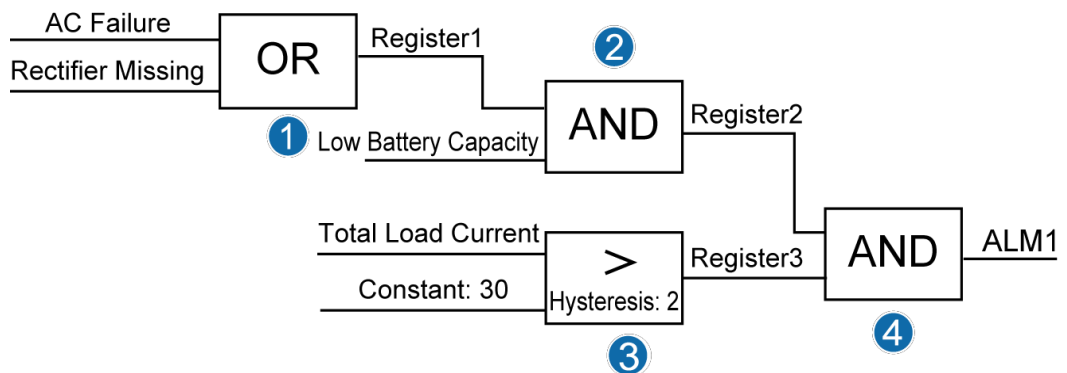


8.5 Programmable Logic Controller

The DCSC performs the flexible Programmable Logic Controller (PLC) function.

You can select any signals (such as those indicating DC undervoltage and AC power failures) and perform logical operations on them, namely, **AND**, **OR**, **NOT**, **>**, and **<**, and then send calculation results to dry contacts. Figure 8-19 shows the PLC conceptual diagram.

Figure 8-19 PLC conceptual diagram



NOTE

The circled numbers in Figure 8-19 indicate the numbers of logic program lines, which correspond to the logic program lines in Configuration Examples.

Parameters

The following are the inputs, operators, and outputs for PLC logic programs:

- Input:
 - Signals collected by the DCSC, such as total load current signals
 - Alarms generated by the DCSC, such as rectifier fault and battery high temperature alarms
 - Constant
 - Register: combines multiple levels of logic program lines.
- Operator:
 - **AND**: The output is active if both inputs are active.
 - **OR**: The output is active if either input is active.
 - **NOT**: The output is the inverse value of the input signal or constant.
 - **>**: The output is active if the input is greater than the constant.
 - **<**: The output is active if the input is less than the constant.
- Output
 - Outputs are associated with dry contact outputs and can be used for generating alarms or controlling devices.
 - Register: combines multiple levels of logic program lines.
 - Alarm customization: The calculation results are generated as a new alarm.
The new alarm is displayed under **Power System** in the alarm list. You can set the alarm name, severity, and associated dry contact.

WebUI Operation

The PLC configuration is concise and easy to operate and has the following functions:

- Configures and displays PLC logic program lines.
- Enables or disables each or all logic programs.
- Imports or exports configuration files.

Figure 8-20 shows the PLC WebUI.

- **Basic Parameters**: Logic program configuration is valid only when **PLC Function Enable** is set to **Yes**.
- **Logic List**: Allows you to configure logic program lines. Figure 8-21 shows the **Logic List** page.
- **Import and Export**: Allows you to import or export configuration files to generate logic program lines in batches.

Figure 8-20 PLC on the WebUI

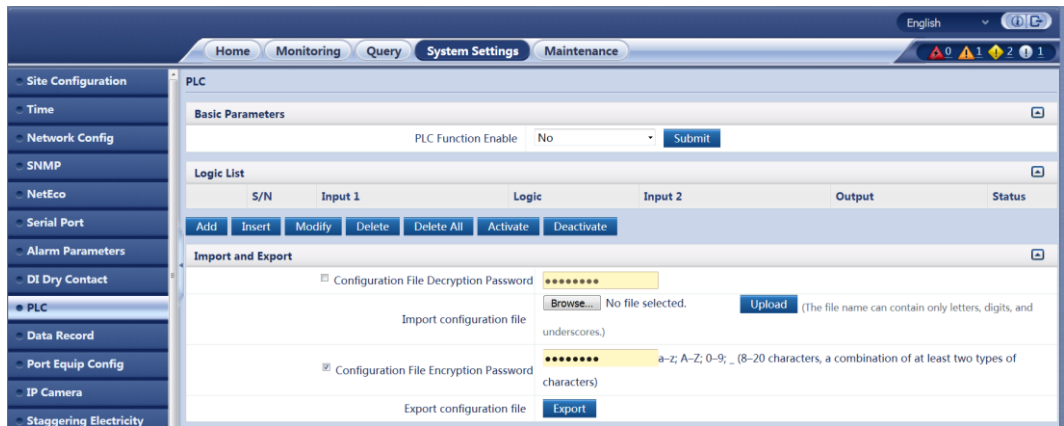
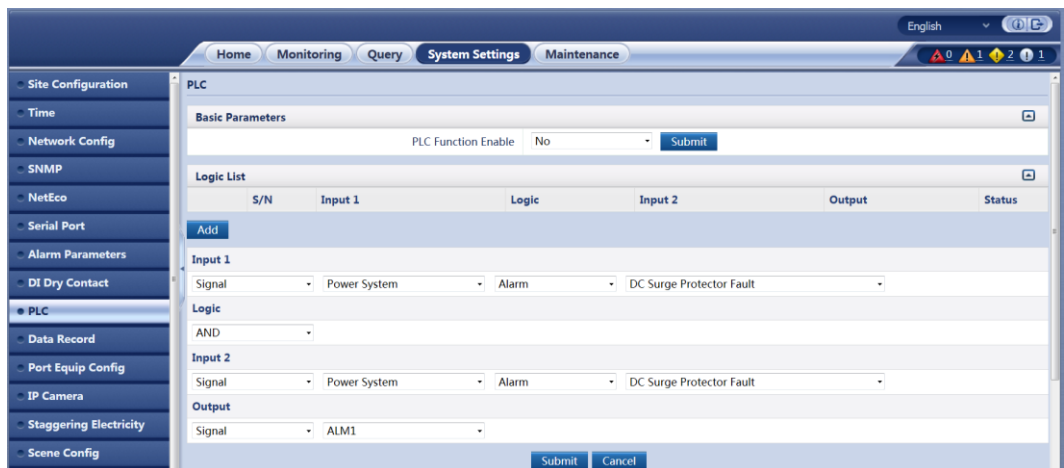


Figure 8-21 Logic list on the WebUI



Configuration Examples

The following describes how to compile a logic program whose inputs are **AC Failure** or **Rectifier Missing**, **Battery High Temperature**, and **Total Load Current > 30 A** and whose output is an alarm signal. Figure 8-19 shows the PLC logic conceptual diagram.

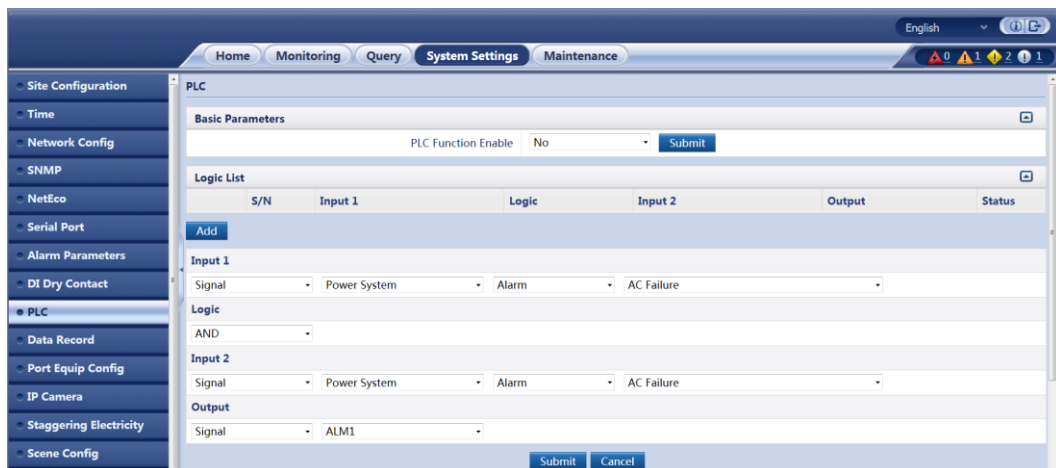
To compile the logic program, perform the following steps:

Step 1 Set **PLC Function Enable** to **Yes** and click **Submit**.

Step 2 Compile a logic program whose inputs are **AC Failure**, **Low Battery Capacity**, and **Total Load Current > 30 A** and whose output is an alarm signal.

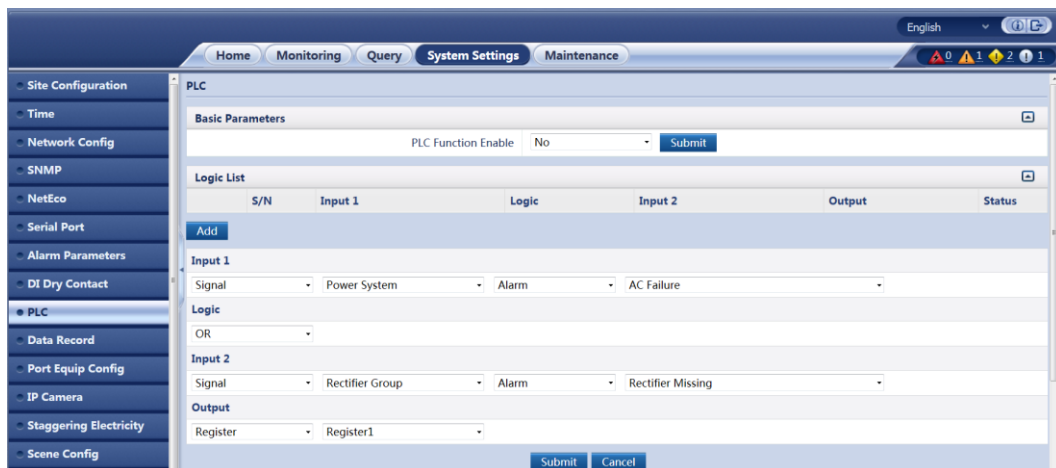
1. Add a logic program.

Figure 8-22 Adding a logic program on the WebUI

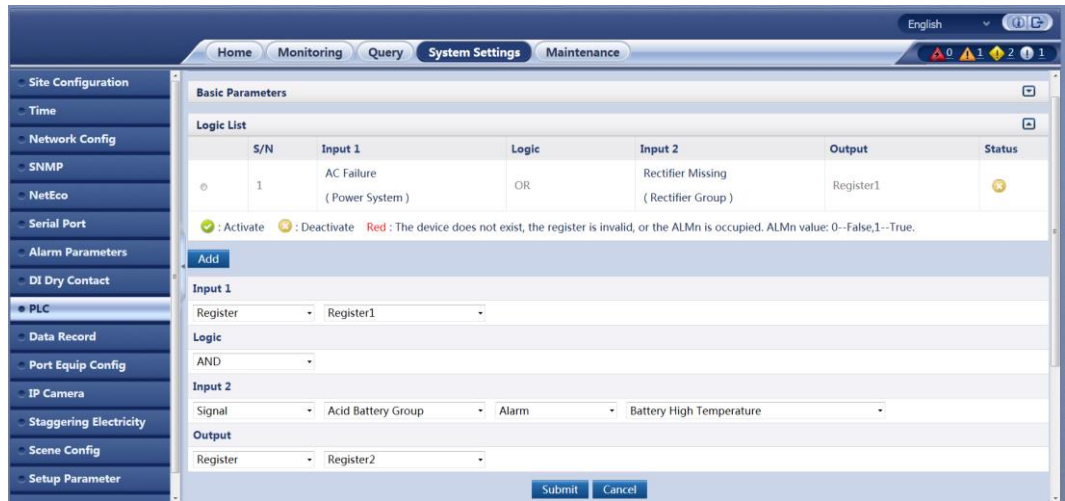


2. Compile the first logic program line whose inputs are **AC Failure** and **Rectifier Missing**, operator is **OR**, and output is **Register1**, and click **Submit**.

Figure 8-23 Compiling the first logic program line on the WebUI

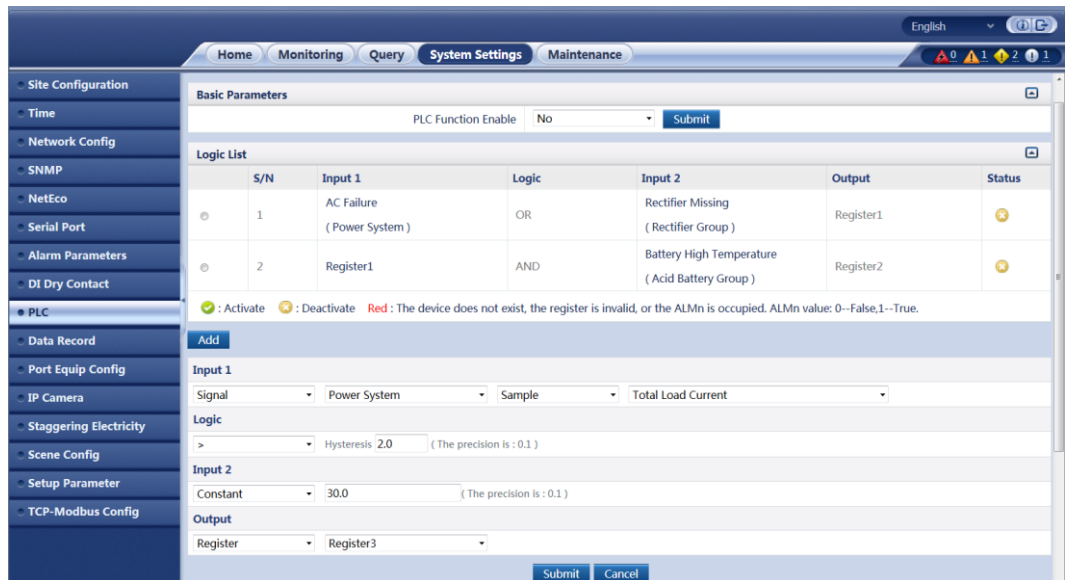


3. Compile the second logic program line whose inputs are **Register1** and **Battery High Temperature**, operator is **AND**, and output is **Register2**, and click **Submit**.



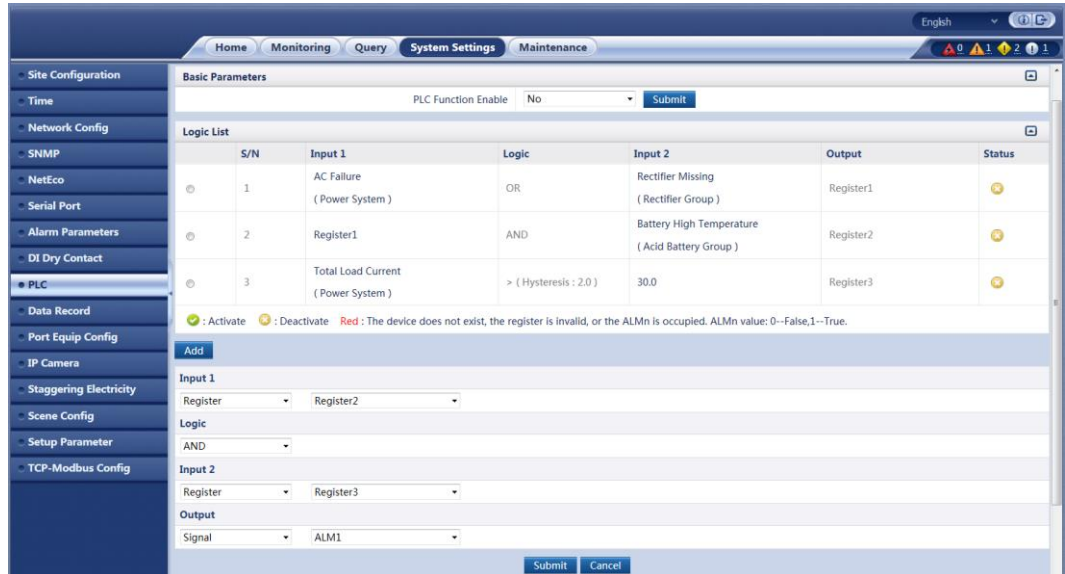
4. Compile the third logic program line whose inputs are **Total Load Current** and **30.0**, operator is **>**, hysteresis is **2.0**, and output is **Register3**, and click **Submit**.

Figure 8-25 Compiling the third logic program line on the WebUI



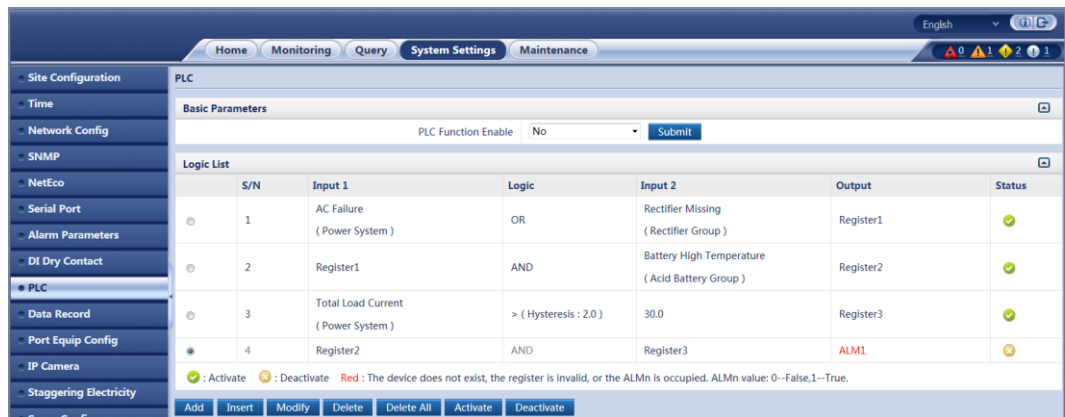
5. Compile the fourth logic program line whose inputs are **Register2** and **Register3**, operator is **AND**, and output is **ALM1**, and click **Submit**.

Figure 8-26 Compiling the fourth logic program line on the WebUI



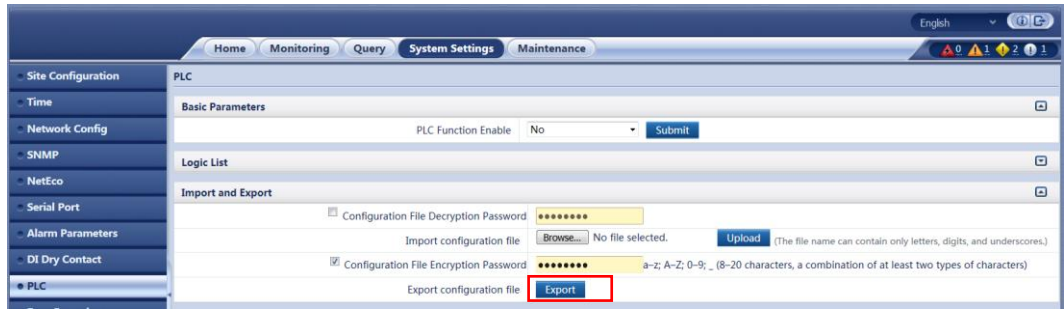
Step 3 Activate the program lines one by one that you submit on the logic list. After a program line is activated, a green icon is displayed in the **Status** column.

Figure 8-27 Logic program lines activated on the WebUI



Step 4 Click **Export** to export the configuration file that contains the logic program lines.

Figure 8-28 Exporting a configuration file on the WebUI



8.6 Performance Statistics

Context

The DCSC collects data about AC, batteries, and power consumption in real time. You can periodically query the operating status of the power system, such as the total number of AC power failures in the current month and the total number of battery string discharge times in the current week.

- AC statistics

Table 8-12 lists the AC statistics.

Table 8-12 AC statistics

Item	Unit	Period
AC Failure Duration	h	Day/Week/Month/Year
AC Failure Times	N/A	Day/Week/Month/Year
Maximum AC Failure Duration	h	Day/Week/Month/Year
Maximum AC Phase Voltage	V	Day/Week/Month/Year
Minimum AC Phase Voltage	V	Day/Week/Month/Year

- Battery statistics

Table 8-13 lists the battery statistics.

Table 8-13 Battery statistics

Item	Unit	Period
Discharge Capacity	V	Day/Week/Month/Year
Total Battery Current	A	5min

Item	Unit	Period
Remaining Capacity Percent	%	5min
High Temperature Runtime	h	Day/Week/Month/Year
Boost Charge Duration	h	Day/Week/Month/Year
Float Charge Duration	h	Day/Week/Month/Year
Discharge Duration	h	Day/Week/Month/Year
Hibernation Duration	h	Day/Week/Month/Year
Charge Times	N/A	Day/Week/Month/Year
Discharge Times	N/A	Day/Week/Month/Year
Maximum Charge Duration	h	Day/Week/Month/Year
Maximum Discharge Duration	h	Day/Week/Month/Year
Discharge Duration Less than 30 Min	h	Day/Week/Month/Year
Discharge Duration 30 to 60 Min	h	Day/Week/Month/Year
Discharge Duration 60 to 120 Min	h	Day/Week/Month/Year
Discharge Duration 120 to 240 Min	h	Day/Week/Month/Year
Discharge Duration 240 to 480 Min	h	Day/Week/Month/Year
Discharge Duration More than 480 Min	h	Day/Week/Month/Year
Discharge Times Less than 30 Min	N/A	Day/Week/Month/Year
Discharge Times of 30 to 60 Min	N/A	Day/Week/Month/Year
Discharge Times of 60 to 120 Min	N/A	Day/Week/Month/Year
Discharge Times of 120 to 240 Min	N/A	Day/Week/Month/Year
Discharge Times of 240 to 480 Min	N/A	Day/Week/Month/Year
Discharge Times More than 480 Min	N/A	Day/Week/Month/Year
Discharge Capacity Less than 30 Min	kWh	Day/Week/Month/Year
Discharge Capacity of 30 to 60 Min	kWh	Day/Week/Month/Year
Discharge Capacity of 60 to 120 Min	kWh	Day/Week/Month/Year

Item	Unit	Period
Discharge Capacity of 120 to 240 Min	kWh	Day/Week/Month/Year
Discharge Capacity of 240 to 480 Min	kWh	Day/Week/Month/Year
Discharge Capacity More than 480 Min	kWh	Day/Week/Month/Year

- Power consumption statistics

The DCSC collects power consumption data and the peak data of various key counters, as listed in Table 8-14 and Table 8-15.

Table 8-14 Traffic statistics

Item	Unit	Period
DC Load Power Consumption	kWh	H/Day/Week/Month/Year
Mains Power Consumption	kWh	H/Day/Week/Month/Year
Discharge Capacity	kWh	H/Day/Week/Month/Year

Table 8-15 Peak power consumption statistics

Item	Unit	Period
Maximum DC Load Power	kW	Day/Week/Month/Year
Minimum DC Load Power	kW	Day/Week/Month/Year

Querying Performance Statistics

This section describes how to query the total battery string discharge capacity in the current month. Perform the following steps:

Step 1 In the **Performance Data** page shown in Figure 8-29, set query conditions.

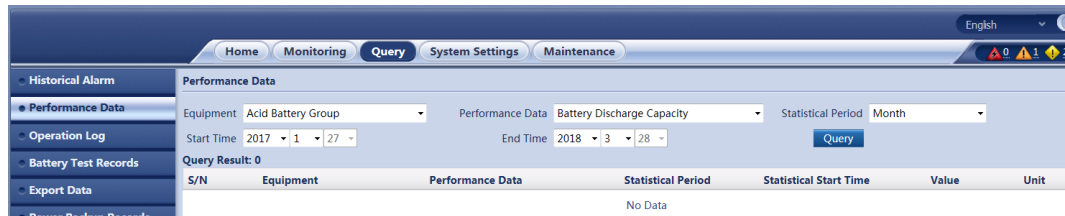
1. Set **Equipment** to **Battery Group**.
2. Set **Performance Data** to **Discharge Capacity**.
3. Set **Statistical Period** to **Month**.
4. Set the query period.

Figure 8-29 Performance data page on the WebUI



Step 2 Click **Query**. Qualified data records are displayed, as shown in Figure 8-30.

Figure 8-30 Performance statistics query results on the WebUI

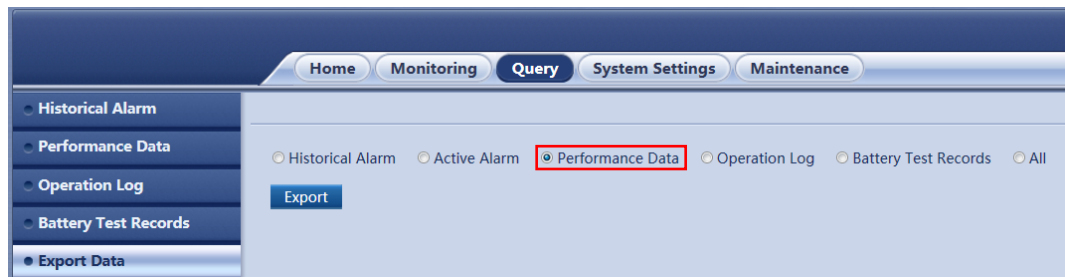


Exporting Performance Statistics

To export performance statistics, perform the following steps:

Step 1 In the **Export Data** page shown in Figure 8-31, select **Performance Data** and click **Export**.

Figure 8-31 Export performance data on the WebUI



Step 2 In the display dialog box, click **Save** to download the performance data package to your local computer.

A LCD Menu Hierarchy



NOTE

The menu hierarchy and parameter display depend on the system type, parameter settings, and device connections. LCD Menu Hierarchy may be different due to different software versions or updates.

Table A-1 Active alarm menu hierarchy

Second-Level Menu	Third-Level Menu	Fourth-Level Menu
Active Alarm	-	-

Table A-2 Running information menu hierarchy

Second-Level Menu	Third-Level Menu	Fourth-Level Menu
Power System	Basic Information	Bus Bar Voltage
		Total Load Current
		AC Voltage
		AC Current
		AC Frequency
		Power System Efficiency
		Site Efficiency
		System Load Ratio
		SPUE
		Power Supply Mode
UIM	DO Control Status	ALM1 Control Status
		ALM2 Control Status
		ALM3 Control Status
		ALM4 Control Status
		ALM5 Control Status
		ALM6 Control Status
		ALM7 Control Status
		ALM8 Control Status
Controller	NetEco Link State	-

Second-Level Menu	Third-Level Menu	Fourth-Level Menu
Rectifier	Rectifier Group	Total DC Output Current
		Total DC Output Power
		Total AC Input Power
	Rectifier n	Slot No.
		DC Output Voltage
		DC Output Current
		DC Output Power
		AC Voltage
		Rated Efficiency
		Real-Time Efficiency
		Rectifier Temp.
		Cur. Limiting Status
		Run Status
		Hardware Version
		Software Version
Bar Code		
Mains	Mains Status	-
	AC Voltage	
	AC Current	
	Total Active Power	
	AC Frequency	
	Mains Electricity	
	Total Runtime	
Acid Battery	Acid Battery Group	Battery Status
		Total Batt. Current
		Total Rated Capacity
		Remain Cap.
		Remain Cap. Percent
		Cur. Limiting Status
		Test Status
		Total Discharge Cap.

Acid Battery (Cont.)	Acid Battery Group (Cont.)	Total Recycle Times
		Battery Type
	Battery String n	Rated Capacity
		Middle Voltage
	Battery Test Records	-
	Backup Power Info	-
GPS	Longitude	-
	Latitude	-
	Altitude	-
Historical Alarm	-	-
Performance	Mains Power Cons.	-
	DC Load Power Cons.	
	Acid Battery Discharge Capacity	
	Battery Group1 Discharge	
	Battery Group2 Discharge	
	BackBatt3 Discharge Capacity	
	Total AC Input Electricity	
	Solar Power Supply	
	Li-ion Battery Discharge Capacity	
Bar Code Info	Power System	-
	Rectifier n	
	Acid Battery Group	
Mobile Data Info	Connection Status	-
	Signal Strength	
	IP Address	
	SIM Card Status	
	SIM Card IMSI	
	SIM Card Number	
	SIM On-Day Traffic	
Other Device Info	-	-

Table A-3 Setting wizard menu hierarchy

Second-Level Menu	Third-Level Menu	Default Value	Value Range
Site Summary	Battery Vendor	Other	Shoto, NorthStar, Narada, LEOCH, Exide, EnerSys, Eltek, Dengta, Coslight, AGISSON, Other
	Battery Model	12V VRLA	12V VRLA, Flood, 2V VRLA
	DG Number	0	0-2
Acid Battery Parameters	Battery1 Connected	Yes	Yes, No
	Battery2 Connected	Yes	Yes, No
	Single-String Capacity	150 Ah	5-10000
	Battery Cable Length	1 m	0-100
	Battery Cable CS Area	35 mm ²	1-1000
Date and Time	Time Zone	UTC -06:00 CST	Time zones of all the major cities in the world. For details, see the WebUI.
	Date and Time	-	-
	DST Enable	No	Yes, No
	NTP Enable	No	Yes, No
NetEco Parameters	NetEco Primary IP	192.168.0.10	-
	Site ID	-	-
Network Parameters	IP Address	192.168.0.10	-
	Subnet Mask	255.255.255.0	-
	Default Gateway	192.168.0.1	-
	IPv4 DSCP	46	0-63
	VLAN Enable	No	Yes, No
	VLAN ID	0	0-4094
	VLAN Priority	5	0-7
Dial Parameters	Carrier Operator	Automatic	Automatic, Others

Table A-4 Parameters settings menu hierarchy

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Default Value	Value Range
Power System	Basic Parameters	LLVD Enable	None	Present, None
		Buzzer Enable	No	Yes, No
	LLVD Parameters	LLVD Enable	Present	Present, None
		LLVD Open Voltage	45.0 V	35.0-56.0
		LLVD Close Voltage	51.5 V	37.0-58.0
		LLVD Delay Time	60 s	5-90
	Alm Threshold Para.	DC OV Thres.	58.0 V	53.0-60.0
		DC UV Thres.	45.0 V	35.0-57.0
		DC Ultra UV Thres.	44.0 V	35.0-57.0
		Amb. HT Thres.	55 degC	25-80
		Amb. LT Thres.	-20 degC	-20-20
Rectifier	Rect. Hibernation En	-	No	Yes, No
	Hibernation Mode*	-	Intelligent Mode	High Mode, High Efficiency Mode, Time Mode
	Min Workin Rects. *	-	2	1-100
	Circulation Period*	-	7 Day	1-365
	Best Efficiency Pt. *	-	80%	50-100
	Min. Rdnt. Coef. *	-	0.20	0.05-1.00
	Phase Balance*	-	Disable	Relative Balance, Absolute Balance, Disable
	Hiber. Without Batt. *	-	No	Yes, No
	Hiber. Stop Duration*	-	72.0 h	0.5-168.0
	Sequential St. Int.	-	0 s	0-20
	WALK-IN Enable	-	No	Yes, No
Battery	Basic Parameters	Battery1 Connected	Yes	Yes, No
Battery	Basic Parameters	Battery2 Connected	Yes	Yes, No
*NOTE: This parameter is valid when Hibernation enable is set to Yes .				

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Default Value	Value Range
		Rated Capacity	100 Ah	5-10000
		FC Voltage	54.0 V	42.0-58.3
		EC Voltage	55.0 V	42.0-58.3
		Charge Limit Enable	Yes	Yes, No
		Charge Limit Coef.	0.15 C10	0.05-0.25
		BLVD Enable	Yes	Yes, No
		Batt Hibernation Ena	No	Yes, No
		TC Coefficient	80 mV/degC	0-500
		Nominal Temperature	25 degC	5-45
		TC Upper Thres.	45 degC	40-45
		TC Lower Thres.	5 degC	5-10
	BLVD Parameters	BLVD Enable	Yes	Yes, No
		BLVD Open Voltage	43.2 V	35.0-56.0
		BLVD Close Voltage	51.5 V	37.0-58.0
		BLVD Delay Time	60s	5-90
	Temp. Parameters	Batt HT Thres.	50 degC	25-80
		Batt LT Thres.	-10 degC	-20-20
	Charge Parameters	Auto. EC Enable	No	Yes, No
		FC-EC Cur. Coef.	0.05 C10	0.01-0.25
		FC-EC Cur. Duration	30 Min	2-1440
		FC-EC Cap. Percent	80%	50-100
		Sche. EC Enable	No	Yes, No

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Default Value	Value Range
		Sche. EC Interval	30 Day	1-365
		EC-FC Cur. Coef.	0.01 C10	0.01-0.25
		EC-FC Cur. Duration	30 Min	2-540
		Sche. EC Duration	9 h	1-24
		EC Max Duration	16 h	5-48
		Mains Recovery EC En	No	Yes, No
		Fast Charge Coef.	0.40 C10	0.25-0.50
	Standard Test Para.	Test Bat. Dur. AC Fa	No	Yes, No
		Time Test Mode	Disable	Disable, Scheduled Test, Planned Test
		Pre-EC Enable	No	Yes, No
		Constant Cur. Test	No	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 Temp.	5 degC	-5-15		
Alarm Parameters	DI Dry Contact Para.	DIN1 Alm. Cond.	Close	Close, Open (12V)
		DIN2 Alm. Cond.	Close	Close, Open (12V)
		DIN3 Alm. Cond.	Close	Close, Open (12V)
		DIN4 Alm. Cond.	Close	Close, Open (12V)
		DIN5 Alm. Cond.	Close	Close, Open (12V)

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Default Value	Value Range
Alarm Parameters (Cont.)	DI Dry Contact Para. (Cont.)	DIN6 Alm. Cond.	Close	Close, Open (12V)
	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
		ALM6 Alarm Action	Close	Close, Open
		ALM7 Alarm Action	Close	Close, Open
		ALM8 Alarm Action	Close	Close, Open
	Alarm Parameters	Power System	-	-
		Rectifier	-	-
		Rectifier Group	-	-
		Battery Group	-	-
		Battery String	-	-
	Alarm Level DO Para.	Cri. Alm. Asso. DO	No	ALM1–ALM8
		Major Alm. Asso.DO	No	ALM1–ALM8
		Minor Alm. Asso.DO	No	ALM1–ALM8
		Warn. Alm. Asso.DO	No	ALM1–ALM8
	Clear ALM Asso.	Clear ALM1 Asso.	Yes	Yes
		Clear ALM2 Asso.	Yes	Yes
		Clear ALM3 Asso.	Yes	Yes

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Default Value	Value Range
Alarm Parameters (Cont.)	Clear ALM Asso. (Cont.)	Clear ALM4 Asso.	Yes	Yes
		Clear ALM5 Asso.	Yes	Yes
		Clear ALM6 Asso.	Yes	Yes
		Clear ALM7 Asso.	Yes	Yes
		Clear ALM8 Asso.	Yes	Yes
		Clear ALM9 Asso.	Yes	Yes
Network Parameters	IP Address	-	192.168.0.10	-
	Subnet Mask	-	255.255.255.0	-
	Default Gateway	-	192.168.0.1	-
Local Parameters	Site ID	Site ID	-	-
	Date and Time	<ul style="list-style-type: none"> • Date and Time • Time Zone • Ntp Enable 	-	-
	LCD Contrast	Contrast	5	0-10
	Change Password	-	-	-

Table A-5 Running control menu hierarchy

Second-Level Menu	Third-Level Menu	Fourth-Level Menu	Default Value	Value Range
Power System	System Control Mode	-	Automatic	Automatic, Manual
	Reboot Controller	-	Yes	Yes, No
Rectifier	Rectifier Group	OV Lock Reset	Yes	-
	Rectifier n	Turn on/off NOTE This parameter is valid when System Control is set to Manual Mode .	On	On, Off
Battery	Battery Test Control	-	Stop	Stop, Start
Clear Alarm	Historical Alarm	Delete His. Alarms	Yes	Yes
	Active Alarm	-	-	-
Clear Batt. Test Log	Clear Test Log	-	Yes	Yes
Output Relay Test	Test Enable	-	No	No, Yes

B Alarm Description

Table B-1 Power system alarm settings

Alarm		Alarm Properties		
LCD	WebUI	Alarm Enabled	Alarm Severity	Relay
AC Failure	AC Failure	Enable	Major	No
DC OV	DC Overvoltage	Enable	Minor	No
DC Ultra UV	DC Ultra Overvoltage	Disable	Critical	No
DC UV	DC Undervoltage	Enable	Major	No
Load Fuse/ Breaker Fa	Load Fuse/Breaker Failure	Enable	Major	No
DCSC Fault	DCSC	Enable	Major	No
Insuff. Alm Space	Insufficient Alarm Space	Disable	Warning	No
High Amb. Temp.	High Ambient Temperature	Enable	Minor	No
Low Amb. Temp.	Low Ambient Temperature	Enable	Warning	No
Amb. TS Missing	Ambient Temperature Sensor Missing	Enable	Warning	No
Amb. TS Fault	Ambient Temperature Sensor Fault	Enable	Major	No
DIN1 Alarm	DIN1 Alarm	Enable	Minor	No
DIN2 Alarm	DIN2 Alarm	Enable	Minor	No
DIN3 Alarm	DIN3 Alarm	Enable	Minor	No

Alarm		Alarm Properties		
LCD	WebUI	Alarm Enabled	Alarm Severity	Relay
DIN4 Alarm	DIN4 Alarm	Enable	Minor	No
DIN5 Alarm	DIN5 Alarm	Enable	Minor	No
DIN6 Alarm	DIN6 Alarm	Enable	Minor	No
Abn Sys. Volt. Check	Abnormal System Voltage Check	Disable	Major	No
Abn Sys. Cur. Check	Abnormal System Current Check	Disable	Major	No

Table B-2 Rectifier alarm settings

Alarm		Alarm Properties		
LCD	WebUI	Alarm Enabled	Alarm Severity	Relay
Rectifier Fault	Rectifier Fault	Enable	Major	No
Rect. Comm. Failure	Rectifier Communication Failure	Enable	Minor	No

Table B-3 Rectifier group alarm settings

Alarm		Alarm Properties		
LCD	WebUI	Alarm Enabled	Alarm Severity	Relay
Rectifier Missing	Rectifier Missing	Enable	Major	No
Multi-Rect. Fault	Multi-Rectifier Fault	Enable	Major	No
Low Rect. Capacity	Low Rectifier Capacity	Enable	Critical	No

Table B-4 Battery group alarm settings

Alarm		Alarm Properties		
LCD	WebUI	Alarm Enabled	Alarm Severity	Relay
Batt. High Temp.	Battery High Temperature	Enable	Minor	No
Batt. Low Temp.	Battery Low Temperature	Enable	Warning	No

Alarm		Alarm Properties		
LCD	WebUI	Alarm Enabled	Alarm Severity	Relay
Batt. TS Fault	Battery Temperature Sensor Fault	Enable	Major	No
BLVD Open	BLVD Open	Enable	Major	No
Batt. Reversely Con.	Battery Reversely Connection	Enable	Major	No
Batt. Chg. Overcur.	Battery Charge Overcurrent	Enable	Major	No
Batt. Ec Prot.	Battery Charge Overcurrent	Enable	Major	No

Table B-5 Battery string alarm settings

Alarm		Alarm Properties		
LCD	WebUI	Alarm Enabled	Alarm Severity	Relay
Batt. Fuse/ Breaker Fa	Battery Fuse/ Breaker Failure	Enable	Critical	No

C Manufacturer's Warranty

All La Marche Manufacturing Co. equipment has been thoroughly tested and found to be in proper operating condition upon shipment from the factory and is warranted to be free from any defect in workmanship and material that may develop within one year from date of purchase. In addition to the standard one (2) year warranty, La Marche warrants its magnetics and power diodes on a parts replacement basis only for four (4) more years under normal use.

Any part or parts of the equipment (except fuses, DC connectors and other wear-related items) that prove defective within a one (2) year period shall be replaced without charge providing such defect, in our opinion, is due to faulty material or workmanship and not caused by tampering, abuse, misapplication or improper installation. Magnetics and power diodes are warranted for five (5) years after date of purchase. During the last four (4) years of this five (5) year warranty period, the warranty covers parts replacement only, and no labor or other services are provided by La Marche, nor is La Marche obligated to reimburse the owner or any other person for work performed.

Should a piece of equipment require major component replacement or repair during the first year of the warranty period, these can be handled in one of two ways:

1. The equipment can be returned to the La Marche factory to have the inspections, parts replacements and testing performed by factory personnel. Should it be necessary to return a piece of equipment or parts to the factory, the customer or sales representative must obtain authorization from the factory. If upon inspection at the factory, the defect was due to faulty material or workmanship, all repairs will be made at no cost to the customer during the first year. Transportation charges or duties shall be borne by purchaser.
2. If the purchaser elects not to return the equipment to the factory and wishes a factory service representative to make adjustments and/or repairs at the equipment location, La Marche's field service labor rates will apply. A purchase order to cover the labor and transportation cost is required prior to the deployment of the service representative.

In accepting delivery of the equipment, the purchaser assumes full responsibility for proper installation, installation adjustments and service arrangements. Should minor adjustments be required, the local La Marche sales representative should be contacted to provide this service only.

All sales are final. Only standard La Marche chargers will be considered for return. A 25% restocking fee is charged when return is factory authorized. Special units are not returnable.

In no event shall La Marche Manufacturing Co. have any liability for consequential damages, or loss, damage or expense directly or indirectly arising from the use of the products, or any inability to use them either separately or in combination with other equipment or materials, or from any other cause. In addition, any alterations of equipment made by anyone other than La Marche Manufacturing Co. renders this warranty null and void.

La Marche Manufacturing Co. reserves the right to make revisions in current production of equipment, and assumes no obligation to incorporate these revisions in earlier models.

The failure of La Marche Manufacturing Co. to object to provisions contained in customers' purchase orders or other communications shall not be deemed a waiver of the terms or conditions hereof, nor acceptance of such provisions.

The above warranty is exclusive, supersedes and is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness. No person, agent or dealer is authorized to give any warranties on behalf of the Manufacturer, nor to assume for the Manufacturer any other liability in connection with any of its products unless made in writing and signed by an official of the manufacturer.

D Document Control and Revision History

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