



La Marche Manufacturing Company

www.lamarchemfg.com

LMP-SC

LmPower SC Controller



Operation Manual

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General Description

La Marche's Telecom Power System Controller (LMP-SC) is an intelligent module that monitors and manages La Marche DC power systems. LMP-SC provides the system with battery management and a rectifier hibernation/cycling function for increased efficiency.

Configuration settings and real-time parameters can be accessed locally through the LCD or remotely using the WEB UI (Web User Interface). LMP-SC is equipped with an RS485/RS232 and an Ethernet port.

This controller is equipped with an embedded I/O interface equipped with digital inputs, dry contact alarm outputs and temperature sensor ports.

Below are the menus and the parameters available for monitoring and adjustments:

1 Alarm & Status

The Alarm & Status menu allows the user to view rectifier information, battery information, as well as the active alarms in the LMP system and the history of alarms which have been triggered. Below are the submenus:

Rectifiers

The Rectifiers submenu allows the user to view the status of all installed rectifiers. This includes the ID number, output current, internal temperature, and the overall status, whether it is in alarm or not. The rectifier being reviewed will have its green LED repeatedly flashing. To view the next rectifier, press the DOWN button. Image below for reference.

```
ID: 5110032F
0.1Adc 30°C
Status:OK
```

Battery Information

The Battery Information submenu allows the user to view the battery status. This includes the battery voltage and the battery's current capacity in amp-hours. Image below for reference.

```
Battery info:
Vbat: 52.2V
CCapacity:100AH
```

Active Alarms

The Active Alarms menu allows the user to view the current alarms present on the system. It will display the alarm(s), as well as the date and time of when the alarm was triggered. If multiple alarms are triggered, the user can use the up and down buttons to scroll through the present alarms. Refer to Appendix A for a list of available alarms. Image below for reference.

```
Active Alarm
Under Volt:N
Over Volt:N ▼
```

History Alarms

The History Alarms submenu allows the user to view the log of all alarms which have been triggered in the system during its operation. It will display the alarm(s), as well as the date and time of when the alarm was triggered and cleared, if applicable. If multiple alarms are triggered, the user can use the DOWN button to scroll through the present alarms. The following images are provided for reference.

```
Records: 2 → AC LV: 1/2
120807 06:10:48
120807 06:11:26
```

2 Maintenance

The Maintenance menu allows the user to setup maintenance parameters. A password has been implemented in this menu in order to prevent unwanted changes. The default password is 00000 and can be changed. To change the password, refer to the Options/Password Section. Below are the submenus:

Boost Charge

The Boost Charge setting allows the user to enable the boost charge. Boost charge allows the batteries to be fully charged by increasing the output voltage to its set value. The LMP limits rectifier output current to avoid battery damage caused by over large charge current. To setup the boost charge parameters, refer to Appendix A.

Battery Test

The Battery Test setting allows the user to enable the battery test, lowering the system DC output voltage to the Discharge Voltage setting for the duration of the Discharge Time setting.

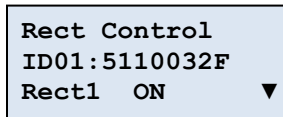
NOTE: The battery test cannot be performed when the system has boost charge enabled.

Eco Mode

The Eco Mode setting is not applicable to the LMP system.

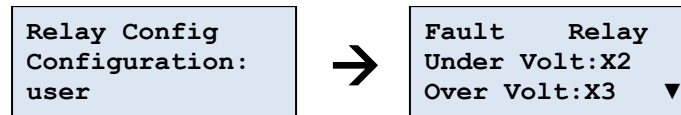
Rectifier Control

The Rectifier Control submenu allows the user to turn off and turn on any of the installed rectifier modules. To select a rectifier, use the button to scroll through. The selected rectifier module will have its green LED flash. Image below for reference.



Relay Configuration

The Relay Configuration submenu allows the user to assign each alarm to the available dry contact output ports: ALM1 through ALM4. Press the button. Refer to Appendix for default alarm assignments.



WARNING: The user is able to change the configuration from User to Factory, but Factory setting should NOT be selected as it is for internal use only.

3 Settings

The Settings menu allows the user to access all adjustable parameters to suit their application. The available submenus are Battery Settings, DC Settings, AC Settings, Fan Settings, System Settings, and Eco Settings. Below are the submenus and parameters in detail:

3.1 Battery Settings

3.1.1 Battery Basics

The Battery Basics submenu allows the user to set battery parameters. Below are the available parameters:

Capacity:	The capacity of the batteries in Ah.
Battery bps:	Not applicable.
Battery add:	Not applicable.
Factory:	Not applicable.

3.1.2 Charge Settings

The Charge Settings submenu allows the user to adjust charging parameters. Below are the available parameters:

Float Voltage:	The float charging voltage setpoint.
Boost Voltage:	The equalize charging voltage setpoint.
Boost to Float CC:	The boost charge to float charge coefficient.
Boost to Float Time:	The boost charge to float charge time.
Boost Duration:	The duration of the equalizing charge.
Float to Boost CC:	The boost charge to float charge coefficient.
Charge Coefficient:	The battery recharge current rate.
Test Time:	The duration of the battery test.
Boost Cycle:	The time interval which the boost charge mode will cycle.

3.1.3 Temperature Compensation

The Temperature Compensation submenu allows the user to set the nominal battery temperature, as well as the coefficient.

3.1.4 LVD Settings

The LVD Settings submenu allows the user to set the battery low voltage disconnect, as well as the low voltage disconnect parameters. Below are the available parameters:

BLVD Voltage:	The voltage threshold to engage the Battery Low Voltage Disconnect (BLVD).
(BLVD) Restore:	The voltage threshold to disengage the BLVD.
BLVD Enable:	Enables/disables the BLVD feature.
LLVD (Voltage):	The voltage threshold to engage the Load Low Voltage Disconnect (LLVD).
(LLVD) Restore:	The voltage threshold to disengage the LLVD.
LLVD Enable:	Enables/disables the LLVD feature.

3.2 DC Settings

The DC Settings submenu allows the user to set the DC parameters, relating to output, current, as well as temperature. Below are the available parameters:

Overvoltage:	Triggered when the DC voltage rises above the set threshold.
Undervoltage:	Triggered when the DC voltage falls below the set threshold.
Overvoltage Protection:	Triggered when the DC voltage rises above the set threshold, causing all rectifier modules to shut down as a protective measure.
Undervoltage Protection:	Triggered when the DC voltage falls below the set threshold, causing all rectifier modules to shut down as a protective measure.
System Limit:	The DC output current limit threshold. Once surpassed, the DC output voltage will gradually drop to maintain the DC output current at the set threshold.
Overcurrent Protection:	Triggered when the DC current rises above the set threshold, causing all rectifier modules to shut down as a protective measure.
System Overtemperature:	Triggered when the ambient temperature rises above the set threshold.
Overtemperature Protection:	Triggered when the ambient temperature rises above the set threshold, causing all rectifier modules to shut down as a protective measure.

3.3 AC Settings

The AC Settings submenu allows the user to set the AC alarm parameters, relating to the AC input. Below are the available parameters:

Overvoltage:	Triggered when the AC voltage rises above the set threshold.
Undervoltage:	Triggered when the AC voltage falls below the set threshold.
Overvoltage Protection:	Triggered when the AC voltage rises above the set threshold, causing all rectifier modules to shut down as a protective measure.
Overvoltage Restore:	Triggered when the AC voltage falls below the set threshold during Overvoltage Protection mode, causing all rectifier modules to power back up.
Undervoltage Protection:	Triggered when the AC voltage falls below the set threshold, causing all rectifier modules to shut down as a protective measure.
Undervoltage Restore:	Triggered when the AC voltage rises above the set threshold during Undervoltage Protection mode, causing all rectifier modules to power back up.
AC Lack:	Not applicable.

3.4 Fan Settings

The Fan Settings submenu allows the user to set the fan parameters; the fan starting and stopping temperature in Celsius.

3.5 System Settings

3.5.1 System Configuration

The System Configuration submenu allows the user to set various system parameters. Refer to Appendix B for default settings and value ranges for the parameters. Below are the available parameters:

Rectifier Type:	The output rating of rectifiers being used.
Overvolt. Prot. Restore*:	The method the system will disable the overvoltage protection mode, whether automatically or manually.
Undervolt. Prot. Restore*:	The method the system will disable the undervoltage protection mode, whether automatically or manually.
Output Overcurrent:	To select whether the system will trigger the alarm or activate the protection mode.
Shunt Coefficient:	For factory use only.
Rectifier Default:	Not applicable.
Battery Type:	Not applicable.
AC Type:	The AC input configuration; whether the system is wired for 1-phase or 3-phase input.
Inverter:	Not applicable.
Battery Temperature:	Not applicable.

**Manual restoration consists of removing and reinstalling the rectifier module(s) with the protection mode enabled.*

3.5.2 Clear Record

The Clear Record setting allows the user to delete the history alarms.

3.5.3 Default

The Default setting is for internal use only.

3.5.4 Change PW1

The Change PW1 setting allows the user to change the 1st level password. The first level password allows the user to view and adjust the parameters under the Maintenance and Settings menus.

3.5.5 Change PW2

The Change PW1 setting allows the user to change the 2nd level password. The second level password allows the user to view and adjust the parameters under the System Settings submenus.

3.5.6 Language

The Language submenu allows the user to change the language used on the system display. The available languages for the LMP are English and Chinese.

3.5.7 Device ID

The Device ID setting allows the user to set the device identification number.

3.5.8 Date

The Date setting allows the user to set the current date for the system, which is used for displaying on the main screen and for timestamps on alarm logs.

3.5.9 Hour

The Hour setting allows the user to program the real-time clock used by the software. This clock is used in the data logging to timestamp events.

3.5.10 Alarm

The Alarm setting allows the user to change the alarm buzzer activation. It may be set to on, off, or on with a time delay in buzzer activation.

3.5.11 Communication

The Communication submenu allows the user to setup the communication protocol and bps. The protocol setting is for factory use only and should not be changed.

3.5.12 SNMP

The SNMP submenu allows the user to setup the SNMP communication parameters, such as the IP address, subnet mask, gateway, and port number.

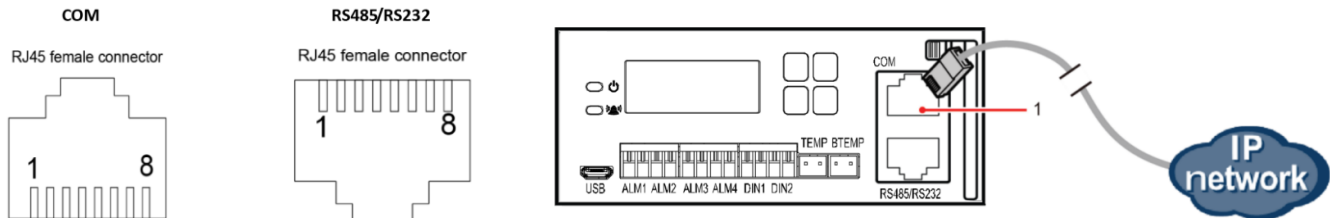
3.6 Eco Settings

The Eco Settings menu is not applicable to the LMP system.

4 Web Management

The Web User Interface allows for a secure password protected remote access to the DC system for monitoring and control purposes. The WebUI provides system's running parameters, active alarms and configurations. Various settings can be configured using the WebUI. The settings include: alarm parameters and configurations, rectifier management, battery management and communications settings.

The RS485/RS232 /SNMP telecom ports are used for remote central monitoring and control. Network ends are used as output terminal for telecom port. For third-party NMS management (over SNMP), connect the COM port on the LMP-SC by using a network cable, as shown below.



RS485/RS232 Port and COM Port Pinout / Communication Connections

Pin	Signal	Description
1	TX+	Sends data over the COM port.
2	TX-	
3	RX+	Receives data over the COM port.
6	RX-	
4, 5, 7, and 8	Not defined	None

COM Port Pin Definitions

Pin	Signal	Description
1	T232B	RS232 PORT1 can be connected to BMS
2	R232B	
3	GND232	
4	485AE	RS485 or RS232 PORT2
5	485BE	
6	T232E	
7	R232E	
8	485GND2	

RS485/RS232 Port Pin Definitions

4.1 Default Settings

IP Address: 192.168.1.190

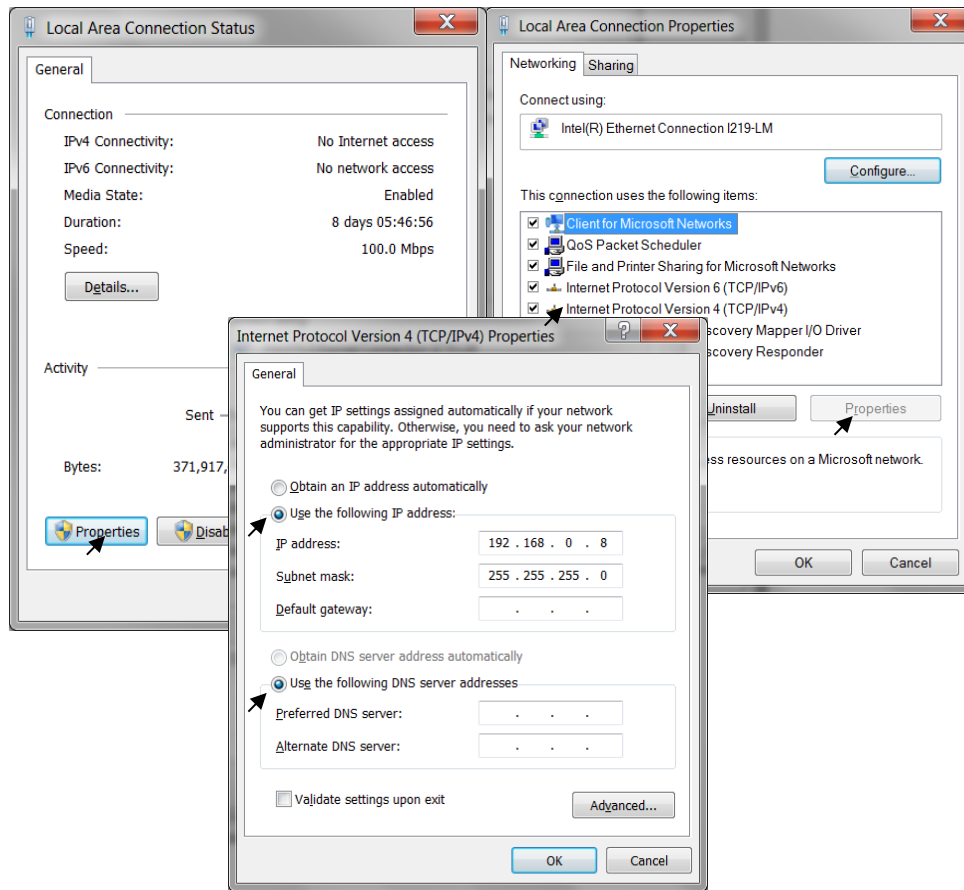
Gateway: 192.168.1.1

Subnet Mask: 255.255.255.0

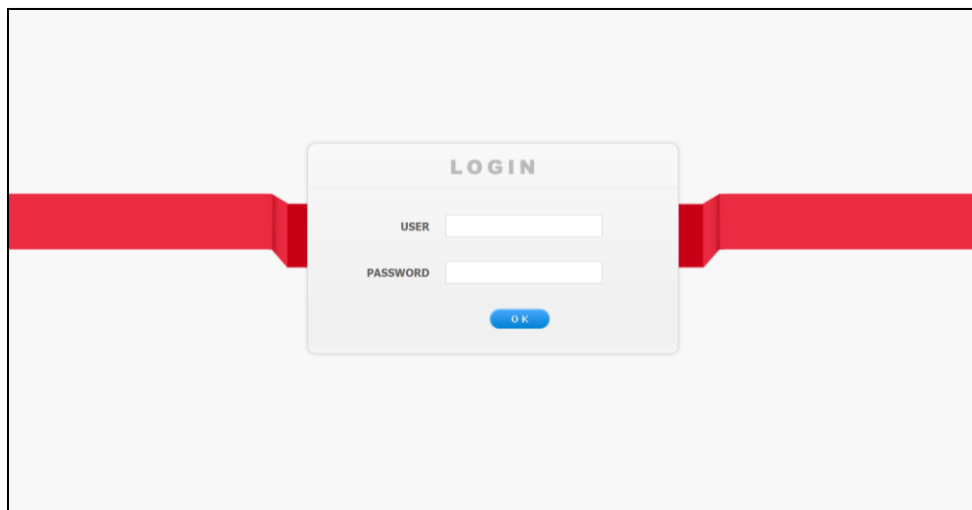
4.2 Establishing a Local Network Connection

Connect an Ethernet Cable between the PC and the COM port on the LMP controller. Open the Control Panel through the Windows start menu. In Control Panel, double click Network Connections. In Network Connections, click Local Area Connection to view the status.

From Local Area Connection Status window, select Properties in the bottom left corner. From the Properties menu, select Internet Protocol Version 4 (TCP/IPv4) and click Properties. From this new window, change the IP address to (192.168.0.8 for this example) and Subnet mask (255.255.255.0). Click OK on the two Properties menus.



Open the internet browser and enter the default IP Address of the LMP system in the address bar (192.168.1.190). The LMP login page will be loaded as seen below. By default, the username is admin and the password is 1234.



NOTE: For changes to take effect, click on the Save button and wait for a "Success – Save Data" message on the top of the screen.

Once logged in, the LMP monitoring webpage's main screen will appear as shown on the following figure. Below is shown the various parameters and monitors available through the LMP monitoring webpage, as well as a brief description.

4.3 Web Management Menu Structure

4.3.1 Status Tab

System

The System tab allows the user to view various monitoring parameters, such as AC status, DC status, battery status, and other additional status.

SnmpTran	
<div>Status</div> <div>• System</div> <div>• Rectifiers</div> <div>Config</div> <div>Options</div> <div>Utility</div> <div>Log out</div>	System Status
	AC Status
	In Voltage: 116 V
	State: Normal
	Output Status
	DC Volt: 56.5 V
	DC State: Normal
	Load Curren: 2.2 A
	Curr State: Normal
	De Branch: ---
	Battery Status
	Current: 6.0 A
	Charge State: Equal Charge
	Temperature: 27.1 °C
	Temper State: Normal
	Protect State: Normal
	Other Status
	Env Temper: 27.5 °C
	Temper State: Normal
	Sys State: Normal
	Module: Normal
	Spd: Normal
	Module Comm: Normal
	Fan: Normal
	Soaking: Normal
	Smoke: Normal
	Door Control: Normal

Rectifiers

The Rectifiers tab allows the user to view information regarding the rectifier modules installed in the LMP system. Below is the available information:

SnmpTran	
<div>Status</div> <div>• System</div> <div>• Rectifiers</div> <div>Config</div> <div>Options</div> <div>Utility</div> <div>Log out</div>	Rectifiers Status
	Summary
	Quantity: 2
	Module: Normal
	Module Comm: Normal
	Modules Data
	Module# Voltage(V) Current(A) Temper(°C) On Module Comm
	1 56.5 3.6 32 On Normal Normal
	2 56.5 4.0 34 On Normal Normal

4.3.2 Configuration Tab

System

AC System Configuration

The AC System Configuration tab allows the user to adjust the AC input settings and system settings. Below are the available parameters:

The screenshot shows a web interface for 'SnmpTran' with a sidebar menu and a main configuration area. The sidebar menu includes 'Status', 'Config', '• System', '• Batteries', 'Options', 'Utility', and 'Log out'. The main area has tabs for 'SysCfg-AC', 'SysCfg-Out', 'SysCfg-Env', and 'SysCfg-Time'. The 'SysCfg-AC' tab is active, showing two sections: 'System Config' and 'AC Config'. The 'System Config' section contains three parameters: 'System Curr Limit' (200 A (5-3000)), 'Sys Over Temper' (85 °C (21-99)), and 'Env Over Temper' (70 °C (20-98)). The 'AC Config' section contains seven parameters: 'Volt Up Limit' (299 V (230-330)), 'Volt Down Limit' (90 V (90-220)), 'Over Prot Volt' (330 V (265-352)), 'Over Rst Volt' (290 V (264-351)), 'Under Prot Volt' (66 V (66-197)), and 'Under Rst Volt' (90 V (67-198)). A 'Save' button is located at the bottom right of the 'AC Config' section.

Parameter	Value	Range
System Curr Limit	200 A	(5-3000)
Sys Over Temper	85 °C	(21-99)
Env Over Temper	70 °C	(20-98)
Volt Up Limit	299 V	(230-330)
Volt Down Limit	90 V	(90-220)
Over Prot Volt	330 V	(265-352)
Over Rst Volt	290 V	(264-351)
Under Prot Volt	66 V	(66-197)
Under Rst Volt	90 V	(67-198)

System Current Limit: The DC output current limit threshold. Once surpassed, the DC output voltage will gradually drop to maintain the DC output current at the set threshold.

System Over Temperature: Triggered when the ambient temperature rises above the set threshold.

Environment Over Temp.: The ambient over temperature alarm threshold.

AC Voltage Up Limit: The AC overvoltage alarm threshold.

AC Voltage Down Limit: The AC undervoltage alarm threshold.

AC Over Protection Voltage: The AC overvoltage alarm threshold which causes all rectifier modules to shut down as a protective measure.

AC Over Reset Voltage: The AC overvoltage protection reset threshold which causes all rectifier modules to power back up.

AC Under Protection Voltage: The AC undervoltage alarm threshold which causes all rectifier modules to shut down as a protective measure.

AC Under Reset Voltage: The AC undervoltage protection reset threshold which causes all rectifier modules to power back up.

DC System Configuration

The DC System Configuration tab allows the user to adjust the parameters pertaining to the DC output. Below are the available parameters:

The screenshot shows a web-based configuration interface for a DC system. The top navigation bar includes tabs for 'SnmpTran', 'SysCfg-AC', 'SysCfg-Out', 'SysCfg-Env', and 'SysCfg-Time'. The left sidebar lists navigation options: 'Status', 'Config', 'System', 'Batteries', 'Options', 'Utility', and 'Log out'. The main configuration area, titled 'Output Config', contains several adjustable parameters: 'DC Volt Up Limit' (57.4), 'DC Volt Down Limit' (43.0), 'Over Current' (230 A (10-2000)), 'Over Prot Volt' (59.0), '1st PD Volt' (46.0), '1st PD Restore Volt' (51.5), 'Over Volt Restore' (with 'Auto' selected), 'Under Volt Restore' (with 'Auto' selected), and 'Over Current' (with 'Protect' selected). A 'Save' button is located at the bottom right of the configuration area.

- | | |
|----------------------------------|--|
| DC Volt Up Limit: | Triggered when the DC voltage rises above the set threshold. |
| DC Volt Down Limit: | Triggered when the DC voltage falls below the set threshold. |
| DC Over Current: | Triggered when the DC current rises above the set threshold, causing all rectifier modules to shut down as a protective measure. |
| Over Protection Voltage: | Triggered when the DC voltage rises above the set threshold, causing all rectifier modules to shut down as a protective measure. |
| 1st PD Voltage: | The LVD disconnect voltage threshold. |
| 1st PD Restore Voltage: | The LVD reconnect voltage threshold. |
| DC Overvoltage Restore*: | The method the system will disable the DC overvoltage protection mode, whether automatically or manually. |
| DC Undervoltage Restore*: | The method the system will disable the DC undervoltage protection mode, whether automatically or manually. |
| DC Overcurrent: | To select whether the system will trigger the alarm or activate the protection mode. |

** Manual restoration consists of removing and reinstalling the rectifier module(s) with the protection mode enabled.*

Environmental System Configuration

The Environmental System Configuration tab allows the user to adjust the environment configuration parameters, relating to the internal fans. Below are the available parameters:

The screenshot shows the 'SnmpTran' web interface. The left sidebar contains links for Status, Config, System, Batteries, Options, Utility, and Log out. The top navigation bar has tabs for SysCfg-AC, SysCfg-Out, SysCfg-Env, and SysCfg-Time. The 'SysCfg-Env' tab is selected, displaying the 'Environment Config' section. It includes two input fields: 'Fan Start Temper:' with a value of 50 °C (0-99) and 'Fan Stop Temper:' with a value of 45 °C (0-99). A 'Save' button is located at the bottom right of the configuration area.

Fan Start Temperature: The temperature threshold to start the internal fans.

Fan Stop Temperature: The temperature threshold to stop the internal fans.

Time System Configuration

The Time System Configuration tab allows the user to adjust the time and date. Below are the available parameters:

The screenshot shows the 'SnmpTran' web interface with the 'SysCfg-Time' tab selected. The 'Time Config' section contains several input fields: 'Year:' (2020, range 2000-2099), 'Month:' (1, range 1-12), 'Date:' (1, range 1-31), 'hour:' (1, range 0-23), 'minute:' (1, range 0-59), and 'second:' (1, range 0-59). A 'Save' button is positioned at the bottom right.

Rectifiers

Rectifier Basic

The Rectifier Basic tab allows the user to adjust the parameters pertaining to the rectifier modules. Below are the available parameters:

The screenshot shows the 'SnmpTran' web interface with the 'Rectifier Basic' tab selected. The 'Rectifier Basic Config' section includes the following parameters: 'Module Base Num:' (1, range 1-60), 'Rotate Period:' (7 Days, range 5-30), 'Sleep Current:' (20 A, range 1-100), 'Start Current:' (40 A, range 1-100), 'Check Period:' (30 Days, range 20-90), and 'Module Rotate:' (radio buttons for On and Off, with Off selected). A 'Save' button is located at the bottom right.

Rectifier Modules

The Rectifier Modules tab allows the user to adjust the parameters pertaining to the rectifier modules. Below are the available parameters:

The screenshot shows the 'SnmpTran' interface with the 'Rectifier Modules' tab selected. The left sidebar contains links for Status, Config, System, Rectifiers, Batteries, Options, Utility, and Log out. The main content area is titled 'Rectifier Modules Config' and contains two rows of configuration for 'Module1' and 'Module2'. Each row has a radio button for 'On' (which is selected) and a radio button for 'Off'. A 'Save' button is located at the bottom right of the configuration area.

Module	On	Off
Module1	<input checked="" type="radio"/>	<input type="radio"/>
Module2	<input checked="" type="radio"/>	<input type="radio"/>

Save

Module: Manually turns on/off the corresponding rectifier module.

Batteries

The Battery Basic tab allows the user to view and adjust the parameters pertaining to the batteries. Below are the available parameters:

The screenshot shows the 'SnmpTran' interface with the 'Battery Basic' tab selected. The left sidebar contains links for Status, Config, System, Batteries, Options, Utility, and Log out. The main content area is titled 'Battery Config' and contains a list of parameters for battery configuration. Each parameter has a text input field and a range in parentheses. The 'Equal Charge' parameter has radio buttons for 'On' (selected) and 'Off'. The 'Battery Test' parameter has radio buttons for 'On' and 'Off' (selected). A 'Save' button is located at the bottom right of the configuration area.

Parameter	Value	Range
Protect Volt:	42.0	
Restore Volt:	51.5	
Charge Curr Limit:	0.20	C10 (0.01-0.25)
Battery Capacity:	100	AH (10-400)
Equal Charge Volt:	56.4	
Float Charge Volt:	51.5	
Charge Trans Curr:	0.015	C10 (0.001-0.100)
Equal Charge Prot:	1440	min (60-2880)
Equal Charge Period:	8760	Hour (50-8760)
To Equal Chrg Cap:	80.0	% (10.0-99.0)
To Equal Chrg Curr:	0.15	C10 (0.01-0.25)
Equal Charge Time:	1	min (1-1440)
Battery Test Time:	120	min (1-960)
Battery Over Temper:	60	°C (20-89)
Temper Comps Base:	25	°C (10-30)
Temper Comps Coef:	0	mV/°C (0-500)
Discharge Volt:	46.5	
Discharge Time:	2	min (1-5)
Delay Time:	1	Hour (0-99)
Equal Charge:	<input checked="" type="radio"/> On <input type="radio"/> Off	
Battery Test:	<input type="radio"/> On <input checked="" type="radio"/> Off	

Save

Protection Voltage:	The voltage threshold to engage the Battery Low Voltage Disconnect (BLVD).
Restore Voltage:	The voltage threshold to disengage the BLVD.
Charge Current Limit:	The battery charging current limit.
Battery Capacity:	The amp-hour capacity of the battery.
Equalize Charge Voltage:	The equalize charging voltage setpoint.
Float Charge Voltage:	The float charging voltage setpoint.
Charge Trans Current:	The equalize to float charge coefficient.
Equalize Charge Protection:	The maximum allowed time for equalize charge before returning to float charge.
Equalize Charge Period:	The amount of days the timed equalize charge will cycle automatically.
To Equalize Charge Capacity:	The system will enter equalize charge if the battery capacity for the system is lower than the threshold.
To Equalize Charge Current:	The system will enter equalize charge if the charge current for the system is lower than the threshold.
Equalize Charge Time:	The duration of each equalize charge.
Battery Over Temperature:	The temperature the battery temperature sensor triggers the corresponding alarm.
Temp. Comp. Base:	The nominal ambient temperature.
Temp. Comp. Coefficient:	The amount of voltage change per 1°C change in temperature.
Discharge Voltage:	The output voltage of all rectifier modules when the battery test is initiated.
Discharge Time:	The duration of the battery test.
Delay Time:	Not applicable.
Equalize Charge:	Manually starts/stops the equalize charge.
Battery Test:	Manually starts/stops the battery test.

4.3.3 Options

IP

The IP tab allows the user to view and adjust the parameters pertaining to the IP settings. Below are the available parameters:

The screenshot shows the 'IP Options' configuration page within the 'SnmpTran' web interface. The left sidebar contains navigation links: Status, Config, Options (selected), IP, COM, SNMP, PASSWORD, Utility, and Log out. The main content area is titled 'IP Options (Must restart system to take effect.)' and contains three input fields: 'IP Address' with the value '192.168.1.190', 'Subnet Mask' with the value '255.255.255.0', and 'Gateway Address' with the value '192.168.1.1'. A 'Save' button is located below these fields.

COM

The IP tab allows the user to view and adjust the parameters pertaining to the communication settings. Below are the available parameters:

The screenshot shows the 'SnmpTran' configuration page with the 'COM Options' tab selected. The left sidebar contains links for Status, Config, Options, IP, COM, SNMP, PASSWORD, Utility, and Log out. The main content area is titled 'COM Options' and contains the following fields: Baud Rate (set to 115200), Stop Bit (set to 1), and Parity (set to None). A 'Save' button is located at the bottom right of the form.

SNMP

The SNMP tab allows the user to view and adjust the parameters pertaining to the SNMP settings. Below are the available parameters:

The screenshot shows the 'SnmpTran' configuration page with the 'SNMP Options' tab selected. The left sidebar is identical to the previous screenshot. The main content area is titled 'SNMP Options' and contains two sections: 'Snmp Option (Must restart system to take effect.)' with Read Community and Write Community fields (both set to 'public'), and 'Trap Option (Must restart system to take effect.)' with Enable Snmp Traps (unchecked), Destination IP (0.0.0.0), Destination Port (0), Trap Community (public), and Trap Type (V1). A 'Save' button is located at the bottom right of the form.

Password

The Password tab allows the user to change the username and password of the web management login:

The screenshot shows the 'SnmpTran' configuration page with the 'Password' tab selected. The left sidebar is identical to the previous screenshots. The main content area is titled 'Change username and password' and contains the following fields: Origin User, Origin Password, New User, New Password, and Repeat New Password. A 'Save' button is located at the bottom right of the form.

4.3.4 Utility

Update

The Update tab is for factory use only.

The screenshot shows the 'SnmpTran' web interface with the 'Update Firmware' tab selected. The left sidebar contains links for Status, Config, Options, Utility, Update, Reset, and Log out. The main content area displays the 'Update firmware' section with the current version 'S17.1.0.9.20200701'. Below this, there is a 'Select File:' label, a 'Choose File' button, and a text field showing 'No file chosen'. An 'Update' button is located at the bottom right of the section.

Reset

The Reset tab is for factory use only.

The screenshot shows the 'SnmpTran' web interface with the 'Reset' tab selected. The left sidebar contains links for Status, Config, Options, Utility, Update, Reset, and Log out. The main content area displays the 'Reboot System' section with a 'Reboot System:' label and a 'Reboot' button.

Reboot: Reboots the webpage.

Appendix A: Alarm Descriptions & Relay Assignments

Alarm Name	Alarm Description	Default Relay Assignment
Undervolt	DC Undervoltage	ALM2
Overvolt	DC Overvoltage	ALM3
Overtemp	Overtemperature	ALM3
Discharge	Battery Discharge	ALM2
Batt OT	Battery Overtemperature	ALM3
BLVD	Battery Low Voltage Disconnect	ALM2
CommFault	Rectifier Communication Fault	ALM3
RectFault	Rectifier Fault	ALM2
OTP	Overtemperature Protection	ALM2
AC LV	AC Low Voltage	ALM2
AC OV	AC Over Voltage	ALM2
AC Stop	AC Failure	ALM1
OCP	Overcurrent Protection	
OVP	DC Overvoltage Protection	
UVP	DC Undervoltage Protection	ALM2
AC OVP	AC Overvoltage Protection	
AC UVP	AC Undervoltage Protection	
OC Alarm	Overcurrent	ALM3
Bat fuse	Battery Breaker Open	ALM2
DC branch	Load Breaker Open	ALM2
SPD	Surge Protection Device	
Door	Door Status Sensor	
Smoke	Smoke Sensor	
Fan	Fan Sensor	
Inverter	Not Applicable	
LVD	Low Voltage Disconnect	ALM2
Water	Water Sensor	
PhaseErr	Not Applicable	
Din1	Digital Input 1	
Din2	Digital Input 2	

Appendix B: Factory Parameter Ranges, Defaults, and Accessibility

Menu				
Maintenance				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Boost Charge	Off	On Off	✓	✓
Battery Test	Off	On Off	✓	✓
Eco Mode	On	On Off	✓	✓
Rectifier Control	On	On Off	✓	✓
Battery Settings				
Battery Basics				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Capacity	100	xxx AH	✓	✓
Battery bps	Not Applicable			
Battery Add				
Factory				
Charge Settings				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Float Voltage	54 VDC	38-69.9VDC	✓	✓
Boost Voltage	55 VDC	38-69.9VDC	✓	✓
Boost to Float CC	0.015	0.001-0.1 C10	✓	✓
Boost to Float Time	1	1-1440 Minutes	✓	✓
Boost Duration	420	60-2880 Minutes	✓	✓
Float to Boost CC	0.15	0.01-0.25 C10	✓	✓
Charge Coefficient	0.20	0.01-0.25 C10	✓	✓
Test Time	120 Minutes	1-960 Minutes	✓	✓
Boost Cycle	8760 Hours	50-8760 Hours	✓	✓
Float to Boost Capacity	80%	10-99%	✓	✓
Battery Overtemperature	60°C	20-89°C	✓	✓
Temperature Compensation				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Basics	25°C	10-30°C	✓	✓
Coefficient	0mV	0-500mV	✓	✓
LVD Settings				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
BLVD Voltage	42 VDC	40-49.9VDC	✓	✓
BLVD Restore	50 VDC	49-57.9VDC	✓	✓
BLVD Enable	Yes	Yes No	✓	
LLVD Voltage	42 VDC	40-46VDC	✓	✓
LLVD Restore	50 VDC	41-55VDC	✓	✓
LLVD Enable	No	Yes No	✓	

DC Settings				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Overvoltage	57.4 VDC	54-63 VDC	✓	✓
Undervoltage	43.0 VDC	39-54.5 VDC	✓	✓
Overvoltage Protection	59.0 VDC	54.5-64 VDC	✓	✓
Undervoltage Protection	40 VDC	xx.x VDC	✓	
System Limit	200A	5-3000 Amps	✓	✓
Overcurrent Protection	230A	10-2000 Amps	✓	✓
System Overtemperature	70°C	20-98°C	✓	✓
Overtemperature Protection	85°C	21-99°C	✓	✓
AC Settings				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Overvoltage	299 VAC	230-330 VAC	✓	✓
Undervoltage	90 VAC	90-220 VAC	✓	✓
Overvoltage Protection	330 VAC	265-352 VAC	✓	✓
Overvoltage Restore	290 VAC	264-351 VAC	✓	✓
Undervoltage Protection	66 VAC	66-197 VAC	✓	✓
Undervoltage Restore	90 VAC	67-198 VAC	✓	✓
AC Lack	Not Applicable			
Fan Settings				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Basics	25°C	10-30°C	✓	✓
Coefficient	0mV	0-500mV	✓	✓
System Settings				
System Configuration				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Rectifier Type	Not Applicable			
Overvoltage Protection Restore	Auto	Auto Manual	✓	✓
Undervoltage Protection Restore	Auto	Auto Manual	✓	✓
Output Overcurrent	Protect	Protect Alarm	✓	✓
Shunt Coefficient	Not Applicable			
Rectifier Default				
Battery Type				
AC Type				
Inverter				
Battery Temperature				
Clear Record	Select to clear history of alarms		✓	
Default	Not Applicable			
Change Password 1	00000	xxxxx	✓	
Change Password 2	10000	xxxxx	✓	
Language	English	English Chinese	✓	
Device ID	1	0-299	✓	

Date	Current Day	xx/xx/xxxx	✓	✓
Hour	Current CDT Time	xx:xx:xx	✓	✓
Alarm	On	On 3mins 10mins 1hr 4hrs Off	✓	
Comms				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
Protocol	Not Applicable			
bps	115200	1200-115200	✓	✓
Stop Bit	1	1		✓
Parity	None	None Odd Even		✓
SNMP				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
IP Address	192.168.1.190	xxx.xxx.xxx.xxx	✓	✓
Subnet Mask	255.255.255.0	xxx.xxx.xxx.xxx	✓	✓
Gateway	192.168.1.1	xxx.xxx.xxx.xxx	✓	✓
Port	20000	xxxxx	✓	
Read Community	Public	Custom		✓
Write Community	Public	Custom		✓
Enable SNMP Traps	Off	On Off		✓
Destination IP	0.0.0.0	xxx.xxx.xxx.xxx		✓
Destination Port	0	X		✓
Trap Community	Public	Custom		✓
Trap Type	V1	V1 V2C		✓
Eco Settings				
Parameter	Default	Value Range	Controller Screen Accessible	Web Accessible
ECO	Disable	Enable/Disable	✓	
Eco Mode	Auto	Auto/Manual/Test	✓	
Rectifier Cycle	Off	On/Off	✓	✓
Battery Test	Off	On/Off	✓	✓
Basics	Not Applicable			
Cycles	7 Days	xx Days	✓	✓
Sleep Current	20 Amps	xx Amps	✓	✓
Start Current	40 Amps	xx Amps	✓	✓
Test Cycle	30 Days	xx Days	✓	✓
Discharge Voltage	46.5 VDC	xx.x Volts	✓	✓
Discharge Time	2 Minutes	1-5 Minutes	✓	✓
Time Delay	24 Hours	xx Hours	✓	✓
HER First	Not Applicable			

Appendix C: Document Control and Revision History

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