HELIOS
POWER SOLUTIONS

Power Supply SNMP Interface
User manual

for SR…**H*i*** & …***i*** versions

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INTRODUCTION & INITIAL SETUP

Helios Power Solutions (formerly Innovative Energies) *Ethernet* enabled DC power supplies and *No-Break DC* UPS can be accessed via a network connection to provide accurate information for the monitoring of critical power systems.

These models will have the suffix **–LAN+** in the model code.   This user manual refers to models with codes starting with **SR…Hi** and **SR…i**

1.1   Default IP Address & Login

Unless specified otherwise at the time of ordering we set a static IP address of 192.168.2.10.

If the unit is set to **DHCP enabled**, it will be allocated an IP address by the user's network dhcp server.

Using a web browser, eg. Internet Explorer, Firefox, Chrome, type the IP address into the url address box of the web browser, eg. 192.168.2.10.

The following screen will appear:

Series_I Login Screen

| System Location: | |
| Password: | | Login |

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Password: **iepassW1** (Note that the password is case sensitive)

Note: The 'System Location' field can be changed/personalised on the 'SNMP Configuration' web page (see page 14).

Click on 'Login' with the mouse (Note that in some browsers pushing the 'Enter' key to log-in may not work)

MONITORING & CONTROL

Monitoring & Control
SR100i12T

CONTROL

- Monitoring & Control
- Network Settings
- PSU Configuration
- SNMP Configuration
- Syslog Configuration
- Firmware Upgrade
- Contact Details

BCT Start	Scheduled BCT Disabled
BCT Stop	Enable Scheduled BCT
Reset Temperature Log	Disable Scheduled BCT

MONITORING

Power Supply Status:	Charge Cycle (Normal Operation)
Battery Status:	Battery Missing
Output Voltage:	13.8
Battery Current:	0.1
PSU Current:	0.0
Load Current:	-0.1
Temperature:	18
Temperature Log Low:	18
Temperature Log High:	19
Estimated Battery Time Remaining:	N/A

Refresh Configuration

THRESHOLDS *(Please note that only integer values are accepted)*

Temperature High Threshold (degC):	30
Temperature Low Threshold (degC):	0
Over Voltage Threshold(V):	15
Load Current Threshold(A):	8

Threshold Update

1.2   CONTROL – Understanding Control Terms:

Scheduled BCT: If enabled, the charger will automatically do a battery condition test (BCT) at the scheduled time after start up or a mains fail

BCT Start: Starts a BCT

BCT Stop: Stops a BCT

BCT Enable: Enables a scheduled BCT

BCT Disable: Disables a scheduled BCT

Reset Temperature Log: Resets the temperature log.

Customisable Thresholds

Threshold values can be set by the user according to their requirements. SNMP trap (alert) messages will be sent when one of the thresholds are exceeded. The units for the threshold fields are:

Temperature: degrees C
Voltage: volts
Current: amps

1.3   MONITORING - Understanding Monitored Variable Terms:

Output Voltage: Displays power supply voltage when mains power is on.
        Displays battery voltage when mains are off or during a battery condition test (BCT)

Battery Current: Displays a positive reading when being charged
        Displays a negative reading when being discharged

PSU Current: Displays the total of the Load and the Battery Current

Load Current: Displays load current calculated by subtracting the PSU current from the Battery Current

Temperature: Temperature reading is taken from the temperature sensor which should be placed near the batteries

Temperature Log Low: Displays the Lowest temperature recorded

Temperature Log High: Displays the Highest temperature recorded

Estimated Battery Time Remaining: This function is enabled only in firmware version RWC_a_1

Refresh Configuration: This function refreshes all of the variables above, capturing the most current information from your Power Supply or Battery Charger (Note that this does not include temperature logsMONITORING - Typical alerts & displays for Power Supply and Battery Status:

1.   Input power present, battery passed BCT and fully charged*[1]

Power Supply Status:	Charge Cycle (Normal Operation)
Battery Status:	Good (Possible Battery Missing)*[1]

2.   Input power present, battery charging and passed previous BCT

Power Supply Status:	Charge Cycle (Normal Operation)
Battery Status:	Good

3.   Input power present, BCT in progress

Power Supply Status:	Battery Condition Test
Battery Status:	Battery Condition Test

4.   Input power present, failed BCT, battery charging

Power Supply Status:	Charge Cycle (Normal Operation)
Battery Status:	Battery Bad

5.   Input power present, battery charged, failed previous BCT

Power Supply Status:	Charge Cycle (Normal Operation)
Battery Status:	Possible Battery Missing (Battery Bad)

6.   Input power present, battery missing

Power Supply Status:	Charge Cycle (Normal Operation)
Battery Status:	Battery Missing

7.   No input power (in the 30 sec period before before power failure confirmed)

Power Supply Status:	Charge Cycle (Normal Operation)
Battery Status:	Possible Mains Fail

8.   No input power (in the 30 sec period before before power failure confirmed), Vout < Vpres

Power Supply Status:	Overload
Battery Status:	Possible Mains Fail

9.   No input power (for longer than 30sec), battery has passed previous BCT

Power Supply Status:	Mains Failure
Battery Status:	Mains Fail (Battery Good)

10.   No input power, battery voltage is below Vbatl level, battery passed previous BCT

Power Supply Status:	Mains Failure
Battery Status:	Battery Low

11.   No input power, battery has reached the low voltage disconnect level, battery passed previous BCT. *Note that this message is only displayed briefly as communications will also be lost shortly after this point is reached.*

Power Supply Status:	System Down
Battery Status:	Battery Low

12.   No input power, battery has failed previous BCT

Power Supply Status:	Mains Failure
Battery Status:	Mains Fail (Battery Bad)

13.   No input power, battery has failed previous BCT and below Vbatlow

Power Supply Status:	Mains Failure
Battery Status:	Battery Low (Battery Bad)

14.   No input power, battery has reached the low voltage disconnect level, battery failed previous BCT. *Note that this message is only displayed briefly as communications will also be lost shortly after this point is reached.*
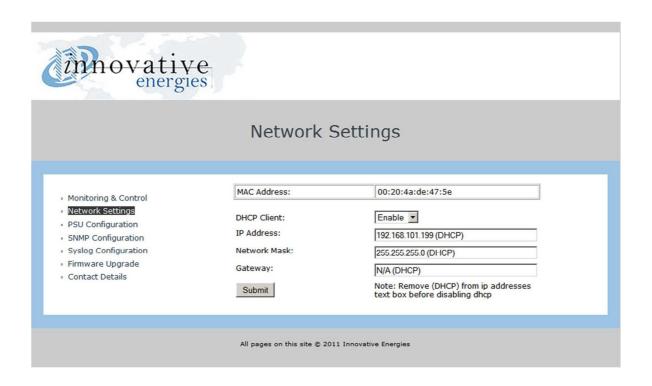
Power Supply Status:	System Down
Battery Status:	Battery Low (Battery Bad)

15.   No data being sent between web page and power supply

Power Supply Status:	Comm's Failure
Battery Status:	Comm's Failure

3. NETWORK SETTINGS

This page enables the user to set a static IP address, eg. 192.168.2.10 or enable DHCP function.

3.1 Disabling DHCP – allocating a static IP address

To disable DHCP follow the steps below:

(a)   Set DHCP Client to **'Disable'**

(b)   Type in the desired **IP address** eg.192.168.2.10 (this is the ex factory default unless otherwise specified at time of order)

(c)   Network Mask: 255.255.255.0 (remove 'DHCP' and preceding space)

(d)   Leave the **Gateway** field blank.

(e)   Click on the 'Submit' button

3.2 Enabling DHCP

To enable DHCP if your device has a static IP address:

(a)   Set DHCP Client to **'Enable'**

(a)   Leave all other fields blank
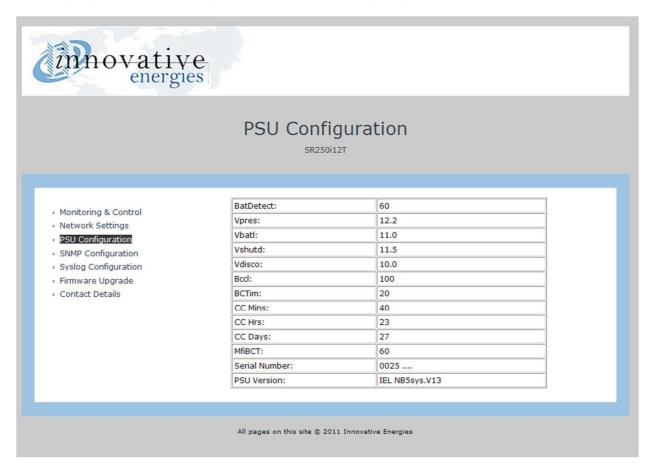
(b)   Click on the 'Submit' button

3.3 Changing Static IP from one to another

To change the IP if your device has a static IP address:

(a)   Type in the desired **IP address** eg.192.168.100.53

(b)   Delete the gateway address (255.255.255.255) and leave it blank

(c)   Click on the 'Submit' button

4.   PSU CONFIGURATION

This page displays the parameters programmed into the firmware of the power supply. These parameters are programmed in the factory and are not able to be changed by the user.

The basic model number of the power supply unit is shown below the 'PSU Configuration' heading. In the screenshot above you can see that it is displayed as SR250i12T.

4.1   Understanding PSU Configuration Terms

BatDetect: Displays Time between battery detections (minutes)

Vpres: Displays Voltage Threshold for battery detection and BCT. Note that if the voltage drops to this level during a BCT the test is aborted and the **BAT LOW** alarm shows.

Vshutd: Displays Setting of internal voltage level of the power supply during battery detection and battery condition tests.

Vbatl: Displays **BAT LOW** alarm voltage levels during mains fail

Vdisco: Displays the Voltage at which the load is disconnected from the battery during mains fail

Bccl: Displays the Battery Charge Current Limit as percentage of the rated power supply current

BCTim: Displays the total length of BCT in minutes

CC Mins: Displays the set time intervals between the automatically scheduled BCTs in minutes.

CC Hrs: Displays the set time intervals between the automatically scheduled BCTs in hours

CC Days: Displays the set time intervals between the automatically scheduled BCTs in days

Note: The total time interval between BCTs is the accumulation of the above three settings

MFiBCT: Displays in minutes the time before the mains fail check, during the BCT (only applies to SR100 models)

Serial Number: Displays the Serial Number of the power supply

PSU Version: Displays the power supply version number

5. SNMP CONFIGURATION

All fields are customisable and may be specified by the user to suit their specific applications.

SNMP traps (alerts) can be monitored using a SNMP manager of the user's choice.

The user may select which traps are set by changing the 'alarm trap mask code' which is accessed by using a MIB Browser such as 'iReasoning MIB Browser'.

The default code for the 'alarm trap mask' is set at 1048187. A new code may be calculated by using the excel spreadsheet available at https://www.heliosps.co.nz/snmp-firmware/ , by clicking on 'ALARM MASK CALCULATOR'. Simply insert '1' into the required yellow column to enable a trap or insert '0' into the required yellow column to disable a trap.

MIB files are available at https://www.heliosps.co.nz/snmp-firmware/ as well.
Alarm traps may be resent if a fault continues to persist. The 'resent time' can be set by modifying the SNMP variable 'TrapPeriodicResentTimeinMinutes'. The 'resent time' range for resending traps is between 30minutes and 10079 minutes (7 days). If the user sets the range outside of these parameters, it will default to 1440 (24hours) which is also the factory default for a new device.

5.1   Understanding SNMP Configuration Terms:

SNMP Trap: Can be enabled or disabled.

Read/Write Community: Identifies groups and their set permission rights. The default setting for this
is 'iepublic'

System Contact: This is user specified and able to display names, phone numbers or email
addresses

System Name: This area is user specified

System Description: This area is user specified

System Location: This   area   is   user

specified

Trap Destination IP: Identifies where the alert message is to be sent. The user specifies the IP
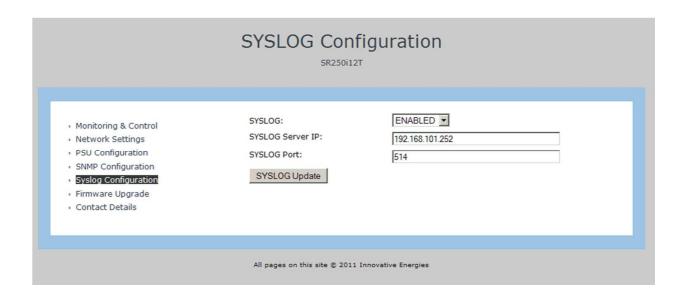Address of the PC they want the SNMP traps (alerts) sent to

SNMP Trap Port: Displays the port number of the SNMP trap (default is 162)

SNMP Agent Port: Displays the port number of the SNMP agent (default is 161)

6.   SYSLOG CONFIGURATION

The Syslog is used for recording SNMP syslog messages.

6.1 Understanding Syslog Configuration Terms:

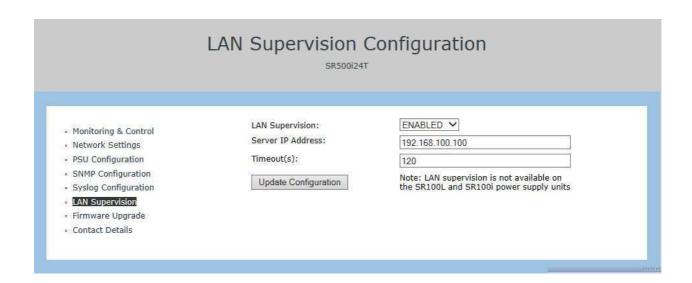**Syslog:** The syslog can be enabled or disabled

Syslog Server IP: This displays the user specified IP address that is used for monitoring the Syslog data

Syslog Port: This displays the port number of the PC setup to monitor the Syslog (default is 514)

SYSLOG Update: This function refreshes all of the user specified data above
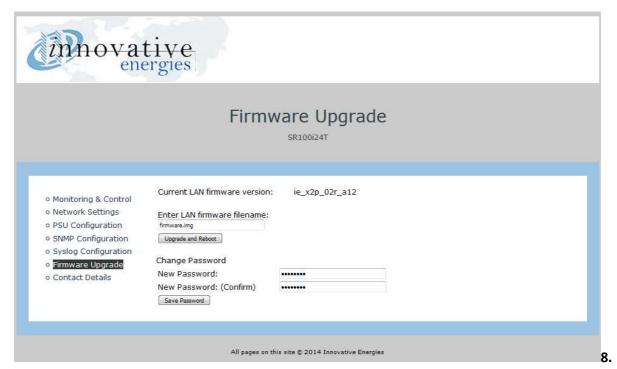
7.   LAN SUPERVISION

The **SR250/500/750 – i – LAN+** (not SR100…) chargers have a transistor collector output, labelled terminal '1', which is controlled via the SNMP software and, for example, may be used to turn a LAN connected device off and on.   The output is switched on ('low' state) for approx. 5 sec if the selected LAN device (eg. the monitoring PC) fails to respond to 'ping' echo requests for a time longer than the configured timeout (default setting is 2 minutes). Further relay toggles will take place every twice the timeout (4 minutes) until the device responds.   Once the device under supervision   responds a SNMP trap will be sent by the **SR250-i** to indicate that the device has been successfully rebooted.

7.1 Understanding LAN supervision Configuration Terms

LAN Supervision: May be enabled or disabled

Server IP Address: This is the computer or device which is monitoring the PSU

Timeout: Time between toggles if device fails to respond to ping echo requests

8.   FIRMWARE UPGRADE & PASSWORD CHANGE

This page is used to update the software to the latest version. This is done by using a standard FTP programme such as the Filezilla Client available at: www.filezilla-project.org.

For detailed instructions on how to do this using Filezilla go to:

https://www.heliosps.co.nz/wp-content/uploads/sites/3/2018/05/Filezilla-Instructions-for-upgrading-

firmware-SR..-chargers.pdf

Default settings are: **User Name:** root   **Password:** iepassW1

The upgrade file is always named **'firmware.img'** and needs to be transferred to the **/mnt/flash** folder in the web server built into the power supply.

Notes:

1.   After completing the firmware upgrade the power supply will automatically reboot and you will need to log-in again.

2.   PSUs built before 16 October 2012 were fitted with a single boot web server and cannot be updated to the current firmware version unless the web server is changed to a dual boot type. The dual boot web server device has a code no. XPP xxxxxxx- **02R** on the top of the device.

8.1   Change Password

The default password is **iepassW1** and may be updated by the user. Please note that there is no facility to reset a lost or forgotten password (as this would defeat the purpose of a password) and the unit will have to be returned to the factory for reprogramming.

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