smart rack guard 11

DUAL CIRCUIT PROTECTION AND FILTERING FOR RACKS **MODEL RF11R**

FILTERING

SURGE PROTECTION

RACK MOUNTABLE

DUAL CIRCUIT

AV RACKS

COMPUTER SERVER

RF11R SMART RACK GUARD

REMOTE SOFTWARE USER MANUAL

THOR

www.thortechnologies.com.au

1. INTRODUCTION

Thank you for choosing the THOR Smart Rack Guard Remote (RF11R).

The Smart Rack Guard Remote (RF11R) has been designed with industry leading technology of integration of secure IP based monitoring functions with the ability to communicate via a web browser or Smartphone application. This remote access will allow users, particularly service technicians, immediate advice of any high voltage incident or damage affecting the premium-filtered protector. This manual will explain how to setup and use these features of the product to ensure integrity and security standards are maintained.

Purpose

Why is there a need to communicate with a filtered surge protector? Today many electrical appliances have the ability to be turned on or off remotely. In many instances service personnel can monitor systems and equipment to ensure they are performing correctly. Instant advice of a problem can save on downtime and reduce associated call outs. Early detection to faults and the ability to reset equipment remotely can relieve expensive call out costs.

The RF11R can alert via email should the product sustain any damage from a power surge or other high voltage incident. If either of the two separate inbuilt power circuits are affected, an email will be sent immediately to advise of such an event. At the same time an automated on board alarm sounds (within the unit), if damage has been sustained and the product needs replacing. Once the email has alerted a service technician of a problem they can log into the site through a web browser or mobile application, diagnose and make a decision on what needs to happen next. *The alarm can be turned off remotely by the service technician*. The ability to switch off the alarm may alleviate concern or potential annoyance once the fault has been detected and the need for an alarm expires.

If connected equipment is not functioning correctly service personnel are able to log in and reset this equipment. The ability to turn each circuit *on* or *off* becomes an invaluable time and cost saving function.

Conventions

The product programming software will run a web server that serves simple and uncluttered HTML and/or XML pages to indicate system status. Industry Standard Internet Protocols are used.

In addition the software has inbuilt email functionality.

2. OVERVIEW

The RF11R has two isolated circuits. One circuit contains 7 Australian pin outlets while the other circuit contains 4 IEC outlets giving a combined 11 outlet configuration. Each circuit has spike and surge protection as well as filtered technology to ensure safe and clean power is supplied to any connected devices.

Given the nature of rack applications often being in mission critical installations, the design of the RF11R provides an immediate alert that it has reduced or exhausted its protection capacity but still continues to allow power through. This allows service technicians to work on a replacement unit while not affecting the site operations.

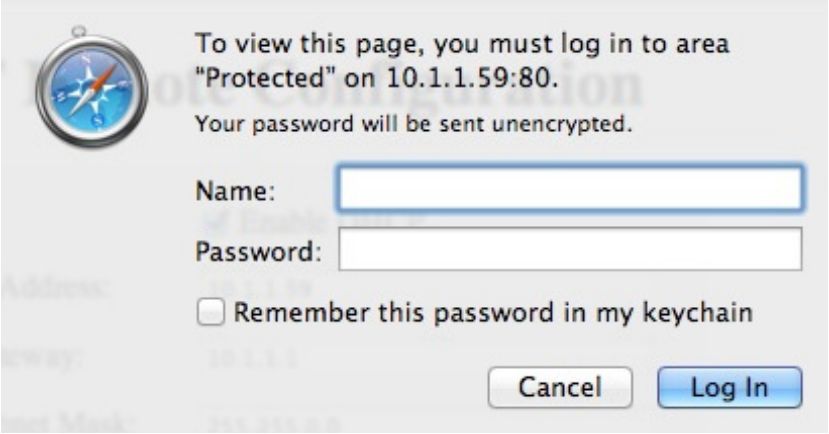
3. INSTRUCTION

Procedures

Please note these procedures have been produced assuming an experienced IT person is doing the configuration. It is assumed that the person configuring this device has knowledge of networking and protocols.

3.1 IP Based monitoring

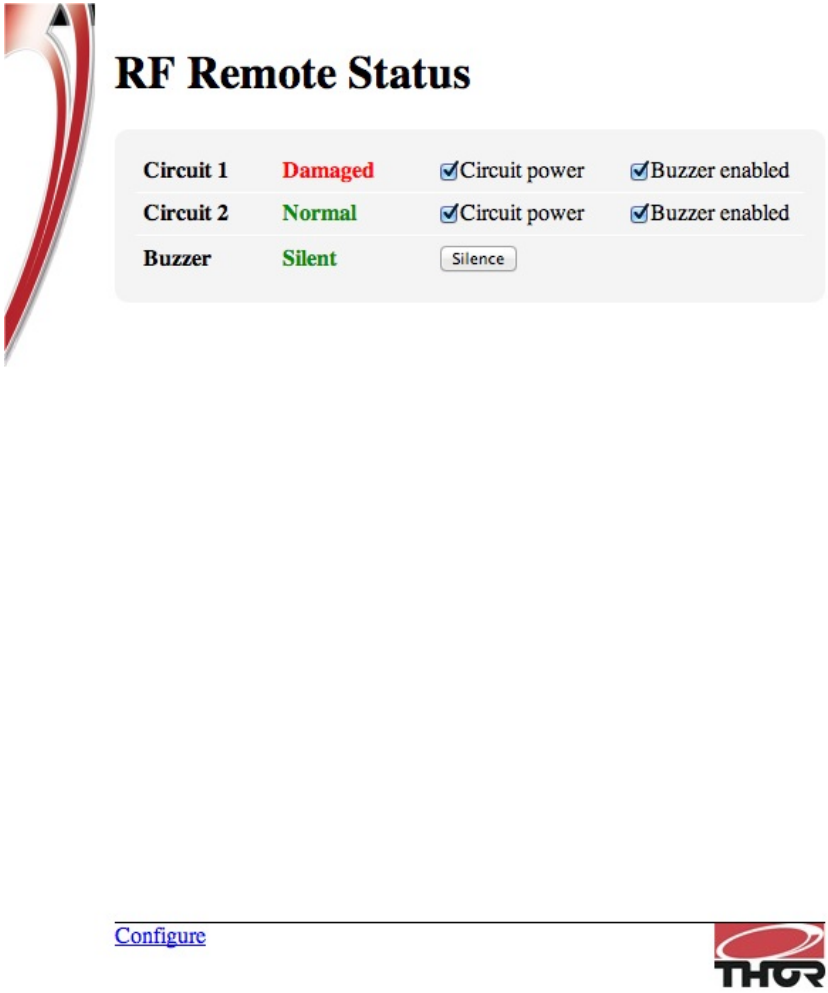
To log into the RF11R type 10.0.0.18 in the address field of a browser such as Internet Explorer, Firefox or Safari and the following screen should appear…



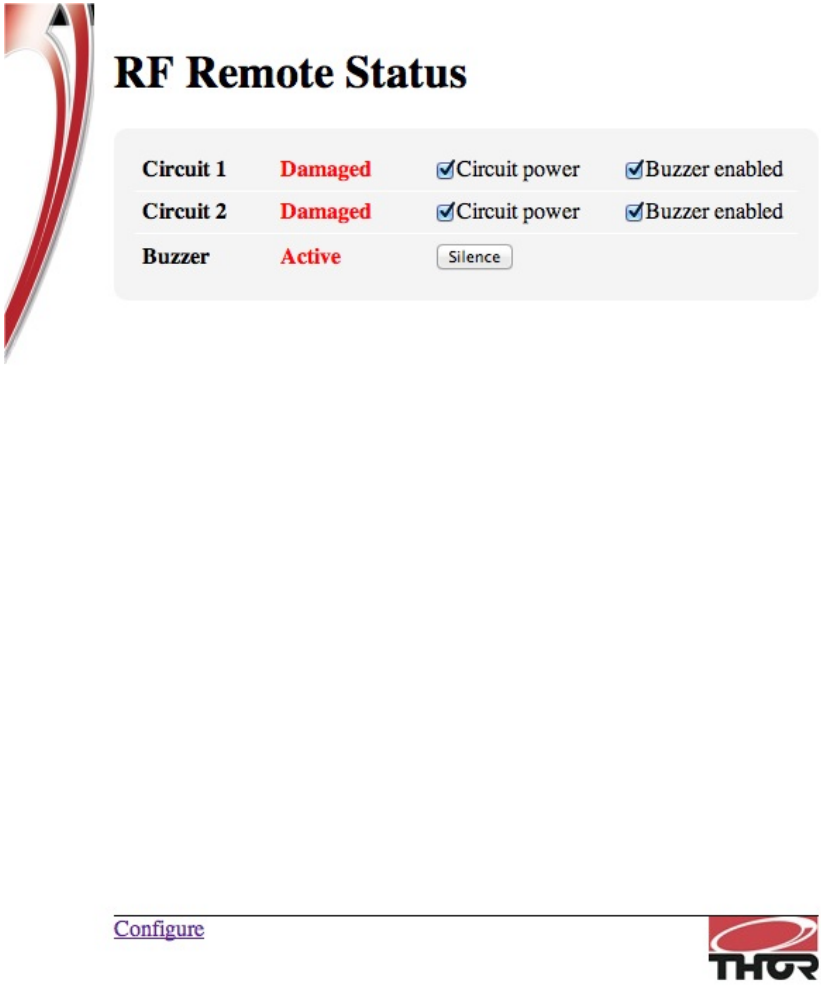
Enter text to field User name: **admin**

Enter text to field Password: THORRF11

Press "OK" button (once User name and Password fields are populated) and this screen should appear below…

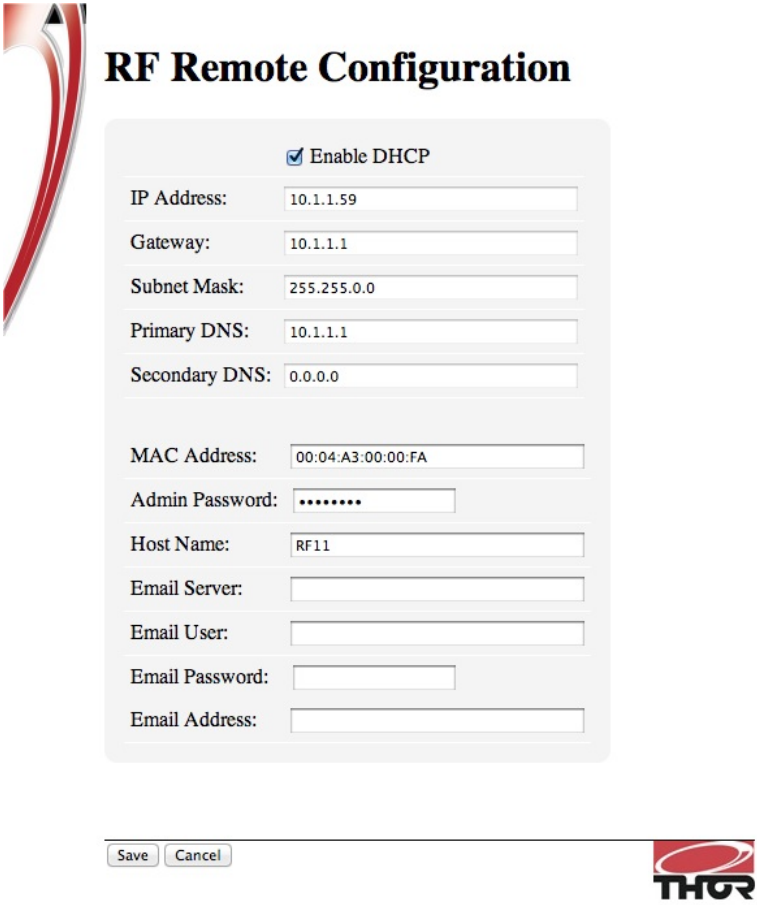


You are now looking inside the browser of the RF11R. When both circuits are operational and protecting without being exposed to spikes or surges the status will be "Normal" and the text in green. As soon as the device is damaged or exposed to a high voltage incident then the status changes and the text colour also changes.



3.2 Network & Security settings

Please select "Configure" button on the bottom of the page to access the network settings. This will allow you to change the default IP address, User name and password and email configuration. Changing these settings is strongly recommended to maintain security protocols.



Enable DHCP

When enabled, the device uses Dynamic Host Configuration Protocol to determine network settings. When DHCP is enabled you may **not** edit the network settings.

If you open the configuration screen when DHCP is already enabled, the disabled fields will show the settings currently issued to the unit from your DHCP server.

IP Address

The IP address of the unit.

Gateway

The IP address of the default gateway, ie the address to which any traffic not destined within the local network will be sent for further routing.

Subnet Mask

The bitmask which determines what portion of the IP address describes the network, and what part identifies a node within the network.

Primary DNS

Address of the main DNS server. This is required to translate URLs to IP addresses (eg mail.yourcompany.com to 10.1.1.13).

Secondary DNS

Address of the backup DNS server, used if communication to the primary server fails.

MAC Address

This is the low-level hardware address of the device, which must be unique on your network and any network containing a machine trying to access the device. The factory supplied MAC Address is guaranteed unique worldwide, it is recommended that you do not change it unless you have a very specific reason for doing so.

Admin Password

Required to access the web interface for the device. Username is fixed as "admin", the password defaults to "THORRF11" on factory reset.

Host Name

The name of the device on the network. It will be included in alert messages to help you identify which device is having a problem.

Email Server

The IP address or name (eg mail.yourcompany.com) of the SMTP server used to relay outgoing messages.

Email User & Email Password

The user id and password the device will use to log onto the SMTP server. Note that only clear text logins are supported (no SSL etc).

Email Address

The email address to which alerts will be sent.

Save

Click save to store any changes into the device's permanent Flash memory.

You will be asked to verify your **current** username and password.

You will then be re-directed to the status page again.

If you have changed the Admin Password, the status page will then ask you for the **new** username and password.

Cancel

Aborts changes and returns to the status screen.

Security: Although every effort is made to maximize Internet security within the unit, the capabilities of such a small device are limited, thus it is recommended that the unit be operated with an external firewall and other such security measures. The other advantage of this is that the firewall will be more up to date and better integrated with the site security policy

3.3 Main page

The main page shows some buttons and the current status –

- Circuit 1 (this is for the 7 Australian pin outlets)
  - Green = all OK
  - Red = Damaged to protection and needs replacement
  - Power = Checked, activates power on the circuit
  - Buzzer = Checked, the buzzer will sound if the circuit is damaged. Either way, if the email settings are configured then an alert will be sent via email.
- Circuit 2 (this is for the 4 x IEC or "kettle plug" type connectors)
  - Green = all OK
  - Red = Damaged to protection and needs replacement
  - Power = Checked, activates power on the circuit
  - Buzzer = Checked, the buzzer will sound if the circuit is damaged. Either way, if the email settings are configured then an alert will be sent via email.
- Alarm/Buzzer
  - Green = all OK
  - Red = Alarm sounding
  - Silence = click on this button to silence the buzzer.

3.4 Default Reset

If the device needs to be reset to factory default please carry out the following instructions;

(1) Turn off unit

(2) Hold down buzzer reset button

(3) Turn on unit

(4) Wait for buzzer to sound

(5) Release button unit is fully reset (including IP) to factory defaults.

(6) All finished resetting

4. APPLICATION NOTE (HOW TO TURN ON/OFF STAND-BY POWER)

Use of HTTP interface to remotely control the RF11 unit.

The RF11 exposes an HTML interface via the /cpan.cgi url which allows the user to power up/down the output and enable the buzzer for faults on each circuit. It also allows the user to silence the buzzer if it is active.

The full syntax is as follows:

http://<address>/cpan.cgi?param=<p>&value=<v>

<address>

The address of the unit, either as an IP address (eg 10.1.1.7) or as a DNS name if this has been configured (eg rf11.yourcompany.com)

<p>	**<v>**	
p1		Circuit one power.
	0	Power off.
	1	Power on.
b1		Circuit one fault buzzer
	0	Faults do not sound buzzer
	1	Faults sound buzzer
p2		Circuit two power.
	0	Power off.
	1	Power on.

b2		Circuit two fault buzzer
	0	Faults do not sound buzzer
	1	Faults sound buzzer
bz	*	Silence buzzer (the "value=" part of the command must still be specified but the actual value is ignored and can be blank)

Some examples

To turn circuit 1 off:

"http://10.1.1.7/cpan.cgi?param=p1&value=0"

To disable the buzzer for circuit two:

"http://10.1.1.7/cpan.cgi?param=b2&value=1"

To silence the buzzer if it is active:

"http://10.1.1.7/cpan.cgi?param=bz&value="

Note that the login details are still required to perform these commands, as you will discover if you enter them straight into the address bar of your browser.

The authentication method used is BASIC, the username is fixed as "admin" and you choose the password – which defaults on factory reset to THORRF11.

Given that the device has an HTML interface which displays status and provides a user interface for this cpan.cgi command interface, the URL is not especially useful on its own. When, however, it is combined with the *cURL* utility (available for Linux, Mac and Windows) it means that any of these functions on the unit may be operated from the command line on any application.

NOTE: These methods all rely on the address being valid permanently. It is recommended that you configure your RF11 with a static IP address if you are going to rely on the address remaining valid, as your DHCP server may change the address periodically.

The syntax required for using *cURL* in this manner is as follows:

curl --user admin:<pass> "http://<address>/cpan.cgi?param=<p>&value=<v>"

<address>, <p> and <v> are the same as above.

<pass> is your currently configured admin password for the unit.

Make sure you wrap the url in double quotes.

cURL is a built-in command on Linux, BSD and the Mac. There are several implementations available for Windows and a simple search will reveal them.

Once this is configured, you can use other applications or utilities to drive (for example) the outputs of the RF11 units based on a schedule or other network management alarms and so on.

A classic example – some devices may only be required during the day. By using the task scheduler (Windows), *cron* (linux/BSD) or *launchd* (Mac) you can power up your rack in the morning and shut it down in the evening to conserve power.

NOTE: Obviously, you will need to ensure that the appropriate shut-down of any equipment powered off the controlled circuit has been performed or that the equipment is tolerant of repetitive, unexpected power outages before using this procedure.

Linux Example

From a terminal type:

export EDITOR=<editor>

<editor> could be vi, nano, whatever your favourite text editor is.

Then

sudo crontab -e

You'll need to enter your password, and be an admin on the machine.

Add the following lines:

0 9 * * 1-5 curl --user admin:THORRF11 "http://10.1.1.58/cpan.cgi?param=p1&value=0"

0 17 * * 1-5 curl --user admin:THORRF11 "http://10.1.1.58/cpan.cgi?param=p1&value=1"

Save and exit.

Now, at 0 minutes past 9am, every day of the month and every month, on days of week 1-5 (Monday to Friday), the output of circuit 1 will be switched on.

Similarly, at 5pm on these days it will be powered down.

Windows Example

Start by finding a version of curl that works on your system. A good place to start is http://curl.haxx.se/download.html. Download and copy the curl.exe into your c:\windows\system32 directory. You may need to do this by running an explorer or cmd shell as administrator. Click Start, search for "cmd", right click on cmd.exe when it appears and run as administrator, then copy from there. You can do the same with explorer.exe instead of cmd.exe

Ensure that the curl command line call works, by clicking Start, searching for "cmd" and running cmd.exe. Enter the curl command and make sure the RF11 switches on or off correctly.

Now set up the schedule. Start->Control Panel, System and Security, Administrative Tools, Task Scheduler.

Create a basic task named "RF11 Startup", with a weekly trigger, starting at 9:00:00am and recurring every 1 week, with Monday through Friday checked. The task should start a program curl.exe, with the --user and url arguments to power up the circuit added.

Create a second task named "RF11 Shutdown" which is the same, except it should start at 5:00:00pm and arguments set to power down the circuit.

You're done!

Mac Example

OS-X still supports the crontab utility as used by the linux example, although it has been deprecated in favour of launchd.

The configuration of launchd to call the curl utility is outside this scope: please refer to the Apple knowledgebase on the subject (searching for "launchd.plist" may also yield some good results).

5. REFERENCE

Error messages and causes

Appendix A - Glossary

Title	Title

Appendix B – Index

Title	Title

6 YEAR PRODUCT WARRANTY

Congratulations on purchasing Australia's finest power protection.

Unless otherwise stipulated in a separate and specifically superseding Product Guarantee, all THOR power protection products are guaranteed for a period of six (6) years from date of original purchase against damage or failure due to faulty components or workmanship. In addition in the event any THOR product is damaged or destroyed by a power related event while connected to the AC grid (including lightning), THOR may at its sole discretion repair or replace the damaged unit with a similar model for up to six (6) years from date of purchase.

Should you feel your THOR power board is malfunctioning, unplug the unit from the wall and contact our info-line 1300 766 140 during business hours (after hours please leave your details on the THOR info-line and we will return your call the following working day). Please have available at the time you speak with our service department the unit so you may identify the model number and the date of manufacture which is impressed on the back of the unit as well as a description of the difficulty you are experiencing and your retail invoice or bill of sale.

This warranty shall not cover normal and expected wear and tear, damage, malfunction or failure resulting from accident, misuse or misapplication, improper or unauthorised repair, neglect, modification or use of unauthorised replacement parts or accessories, operation of the unit beyond its technical and environmental specifications, infestation by insects or vermin or interfacing supplied by the customer or improper voltage. The warranty shall be void if the rating label or date code has been removed or altered.

This THOR product is sold by the Dealer or Agent as principal. The Dealer or Agent has no authority from THOR Technologies Pty Ltd

to express any additional warranty or guarantee on the Company's behalf except as herein contained. This warranty only applies to the purchase and use of the product in Australia and New Zealand.

To the extent permitted by the relevant legislation in Australia and New Zealand, THOR Technologies Pty Ltd will not accept or have any other responsibility or liability whatsoever for negligence or liability for incidental, consequential, indirect or special damages, including without limitation, loss of actual or anticipated revenue or loss of data or for data being rendered inaccurate.

REVISION HISTORY

Version	Date	Revision Description
1.0	01/09/2011	Manual Creation
1.1	25/4/2012	Update to match v1.0 of the firmware
1.11	22/05/2012	Update note application

THOR TECHNOLOGIES PTY LTD
Tel: 1300 766 140
E: warranty@thortechnologies.com.au
Mail: Po Box 95, Karrinup,
Western Australia,
Australia 6921

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