

SmartRelay

Programmable RF Load switch



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Introduction

Thank you for buying a SmartRelay load switch. Please keep this operation manual handy, as it describes all the features and device programming.

Device Features

- ✦ Two way RF communication.
- ✦ Remote parameterization.
- ✦ DIN & Mini rail mountable.
- ✦ Thermal protection on terminals.
- ✦ Relay position indicated with multicolor led.
- ✦ IR programming interface (USB).
- ✦ Active led indication.
- ✦ Relay failure detection and indication.
- ✦ Settable shedding pattern for Weekdays & Weekends.
- ✦ On board Real time clock with battery backup.
- ✦ Input protection with self resettable fuse.
- ✦ Settable secondary potential free contact.
- ✦ Smart Control interface via RF from PC USB.
- ✦ Built in soft pickup after power failure.

Installation:

Requirements:

1. **Input Voltage:** 240VAC 50Hz , **Consumption** 1.8 W
2. **Switching capacity:** 20A maximum
3. Please note that the installation must be done by a qualified electrician.
4. **Circuit Breaker:** Feed from distribution board for this equipment must be protected with a 20A or smaller circuit breaker.
5. **Earth Leakage:** an Earth Leakage breaker must protect the SmartRelay device.
6. **Terminals:** The tightening torques for the SmartRelay terminal screws are 0.5 Nm and must be maintained annually by a qualified electrician.
7. **Conductor:** The maximum conductor size used is 4 mm², and it is recommended that ferrules be used.

8. **Protection Layer:** If the front panel is not clear, the plastic protective layer might still be on. This can be removed if required.

Connection:

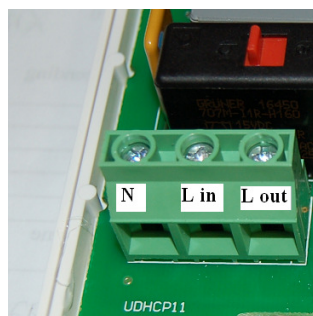
Connection terminals:

1x Neutral [**N**] : Neutral feed from distribution board and Neutral feed to load.

1x Live in [**L in**] : feed from distribution board.

1x Live out [**L out**] : feed to load.

Danger: please note that there are high voltages present on this equipment.



SmartRelay LED indications:

Blue LED:

- Flashing: device is active– **Correct.**
- Any other state:
 - First check that the circuit breaker is ON.
 - Contact the electricity supplier.


Red LED:

- OFF : Relay is OFF – **Correct.**

Green LED:

- ON : Relay is ON and there is an output voltage on the terminals - **Correct**

Red & Green LED:

-  Flashing fast: Relay is OFF and in soft pickup mode. Usually after power failure - **Correct**

 **Red & Green LED:**



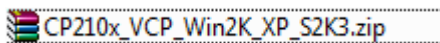
- Both solid **ON** : Relay failure, switch circuit breaker off and contact the electricity supplier.

 **Red LED:**

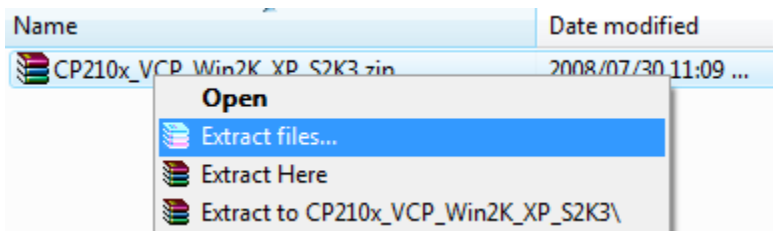
- Flashing: Over Temperature. Faulty installation, switch circuit breaker off and contact the electricity supplier.

USB driver installation for RF Router

1. Locate compressed USB driver file on installation CD.



2. Extract files to temporary HDD location.

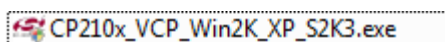


3. Plug in the USB cable into RF Router and into desired PC US port.



The USB RF Router's blue active LED will start flashing after 5 seconds.

4. Run exe file.

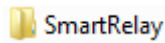


5. Follow installation instructions.
6. Record allocated port number, example Communication port 1.

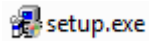
Communication Port:

SmartRelay control software

1. Locate SmartRelay directory on installation CD.



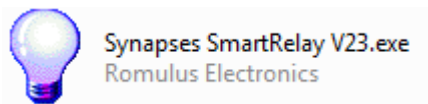
2. Run Setup.exe.



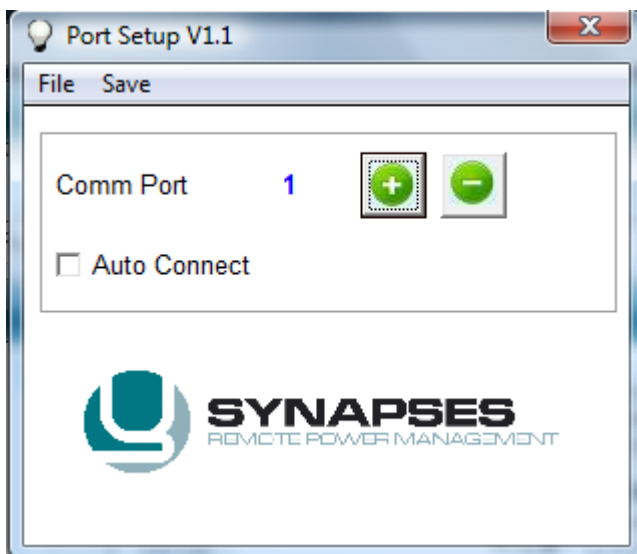
3. Follow the installation instructions.

SmartRelay control software functions

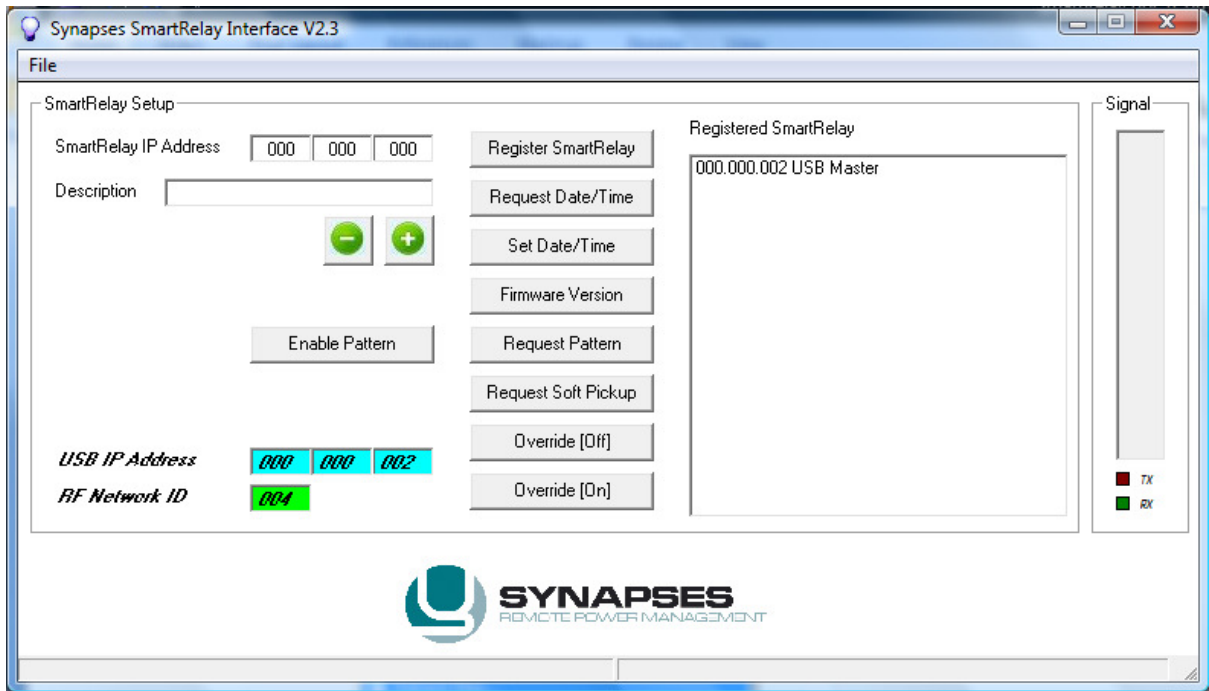
1. Icon



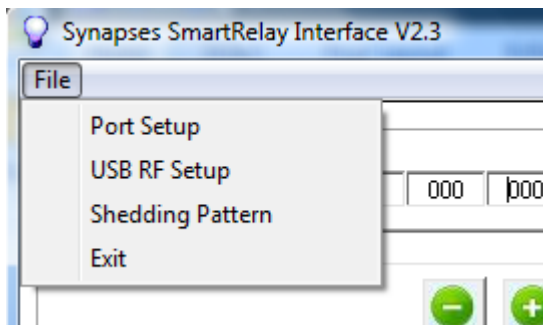
2. First time setup



- 2.1 Select the Communication port that was allocated at point 6 in **USB driver installation for RF Router**
- 2.2 Select **Auto Connect** if the same port is used every time. This will ensure that this form is not displayed every time the software is started.
3. After the port setup is done click on **Save, File ->Exit**. The main form will now be active.



4. Main form Menu:



4.1 Port Setup

Used to change the communication port. Refer to point 2 above.

4.2 USB RF Setup

USB RF Setup V1.0

File

Set USB RF IP Address

IP Address


Request Firmware

IP Address

RF Network ID

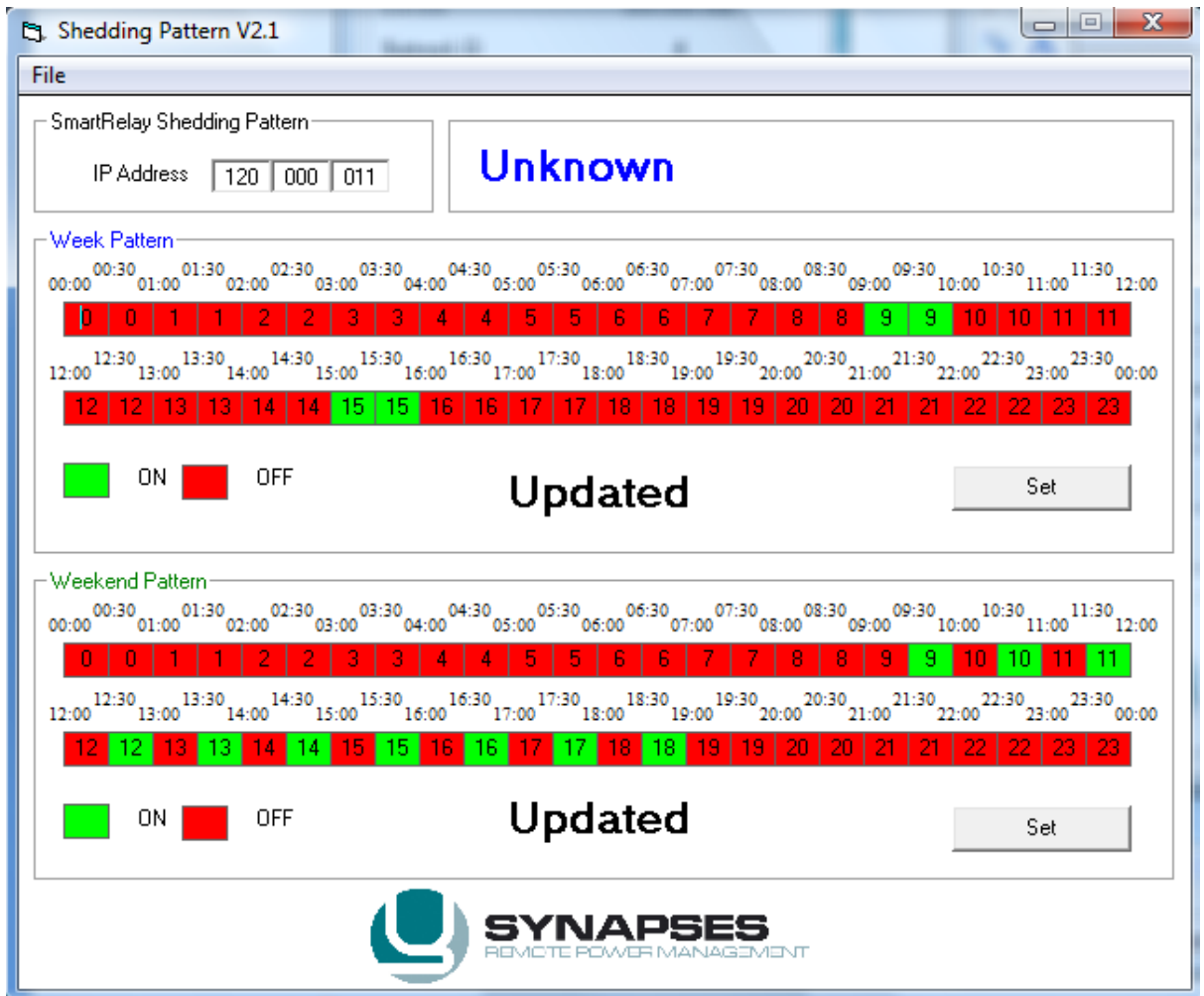
IP Address

Network ID : 1 - 255

 **SYNAPSES**
REMOTE POWER MANAGEMENT

4.3 Shedding Pattern

This action displays the Shedding pattern.



4.4 Exit

Exit the application.

5. Main form explanation

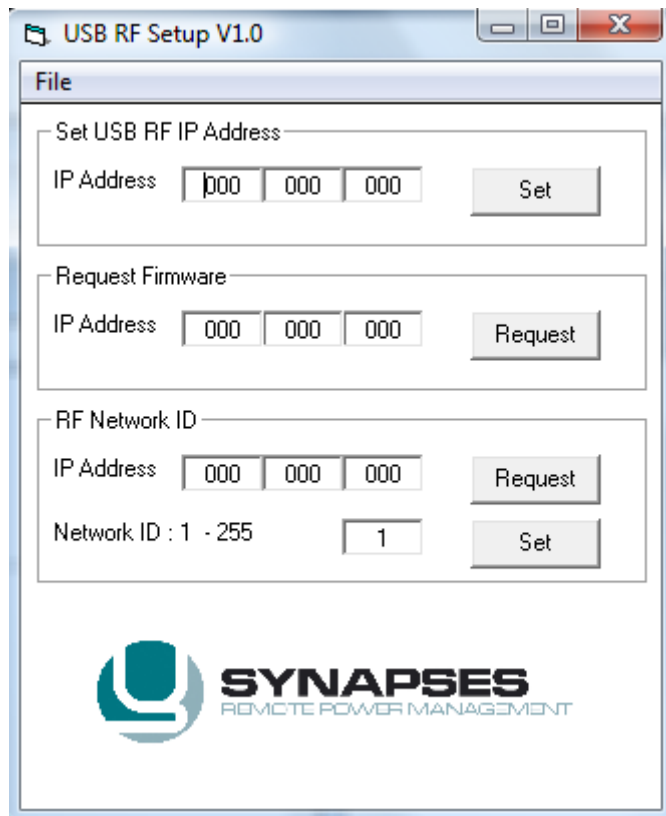
- 5.1 SmartRelay IP Address. This is the bar coded IP address displayed on the SmartRelays and UB RF Router. Type the device IP address in the three allocated blocks that must be configured.

SmartRelay IP Address

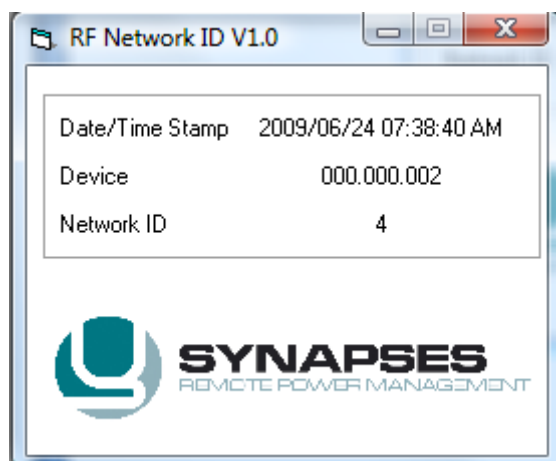
5.2 USB RF Router IP and RF Network ID

USB IP Address
RF Network ID

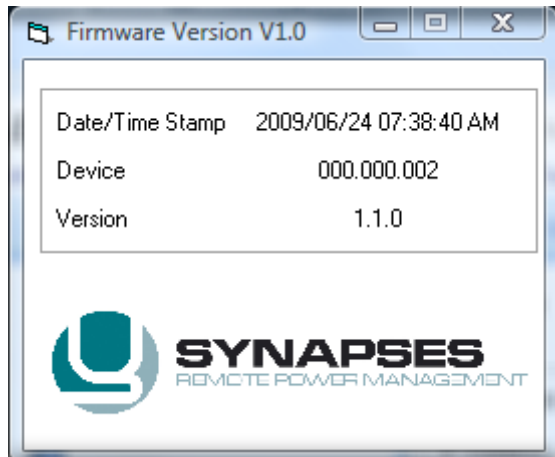
The USB IP Address can only be set in the factory, the client cannot change the IP address.



The RF Network ID is also set in the factory but the client can change it if RF interference is experienced. This is however not recommended and is for the advanced user. Please remember that the SmartRelays must be reregistered if the Network ID was changed. The acknowledgement from the device will look as follow for a Set/Request.



The Firmware version request can also be done from the main form. The acknowledgement from the USB RF will be as follow.



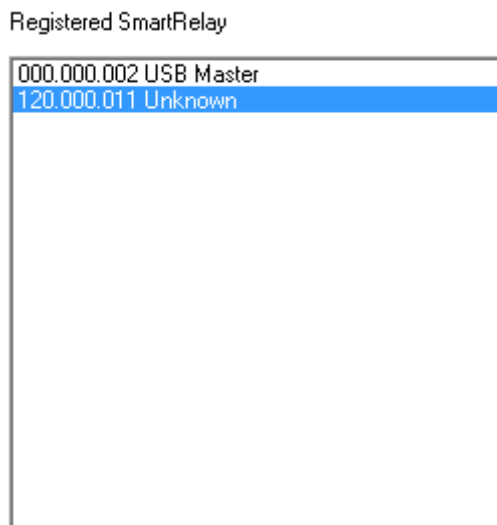
5.3 SmartRelay Device Description



To update the description associated with a specific SmartRelay: Select the particular SmartRelay IP in the Registered SmartRelay List box, the current description will be displayed in the Description box, change it and update save with the + button.

To remove the SmartRelay from the system: Select the particular SmartRelay IP in the Registered SmartRelay List box, the current description will be displayed in the Description box, click on the – button to remove it.

5.4 Registered Devices



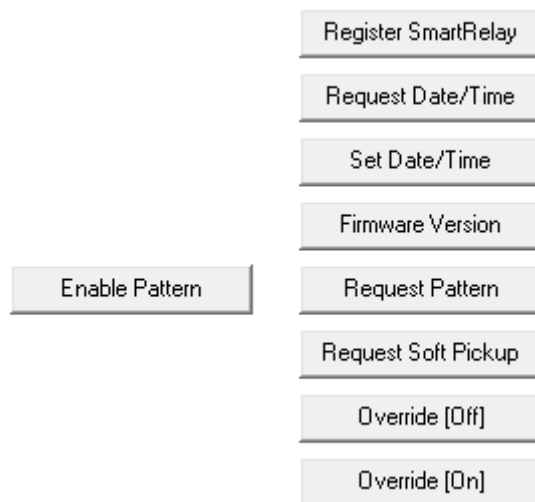
When a SmartRelay is selected in the selection box, a firmware request command will be send automatically to the device. The acknowledgement will look like this:

5.5 USB RF Router Signal Strength



This indicates the signal strength of the USB RF Router. The signal strength is default in the middle of the bar graph and the software will update it every 60 seconds if it is running.

5.6 Commands



5.6.1 Register SmartRelay

If the SmartRelay is not in the registered list as illustrated in point 5.4 above then this command must be used to register the SmartRelay on the system. Please note that the IP address of the SmartRelay that must be registered must be entered in the P Address blocks as in points 5.1.

If the registration is successful then the following will be displayed.

5.6.2 Request Date/Time

Because the SmartRipple is a load shedding device with a time pattern it is necessary to set the date/time if the device is used for the first time. This time is stored on the device and the Real Time Clock will keep the Date/time updated. Please note that the SmartRelay has a super cap backup in that will keep the RTC up to date for up to four days without power.

5.6.3 Set Date/Time

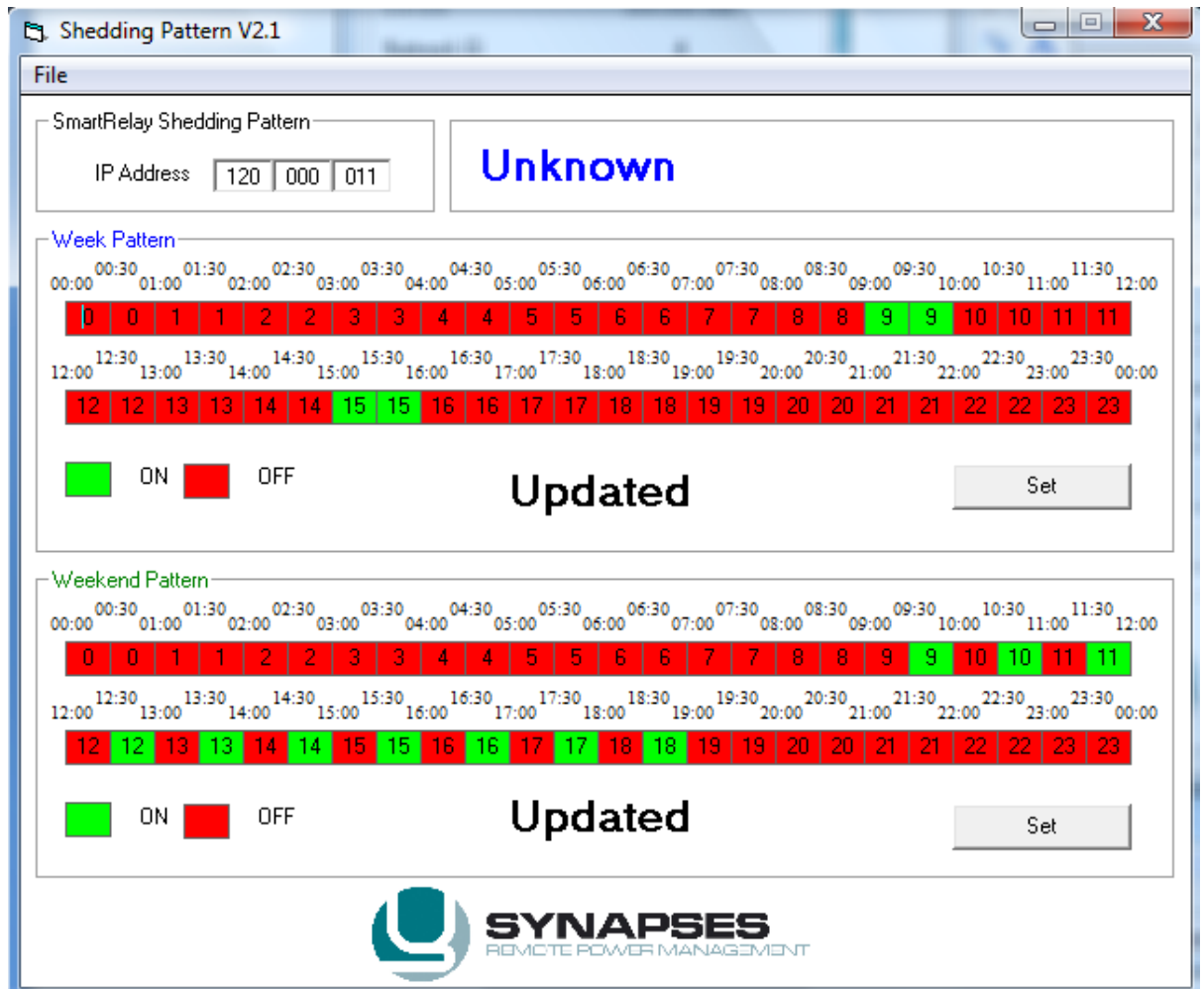
This command is used to set the date and time of the SmartRelay.

5.6.4 Firmware Version

5.6.5 Request Pattern

This is a timer function with 48 interval blocks that is 30 minutes long giving 24 hours.

Two patterns are available namely **Weekdays** and **Weekends**.



This form is the acknowledgement from the SmartRelay and it must first be requested to make changes.

The IP address is displayed in the left top corner and the description in the top right corner. The 2 different patterns can be set in the Week and Weekend pattern.

State indication:

 ON  OFF

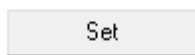
State change: To change the state click on the appropriate time slot. Please note that each block represents 30 minutes.

Acknowledgement confirmation:

Updated

When a pattern is set/request the **updated** indication in each pattern frame is removed. When the data is received from the device it is shown. This is to indicate the current shedding pattern data.

When the pattern has changed click the **Set** button to update the device with the new pattern.

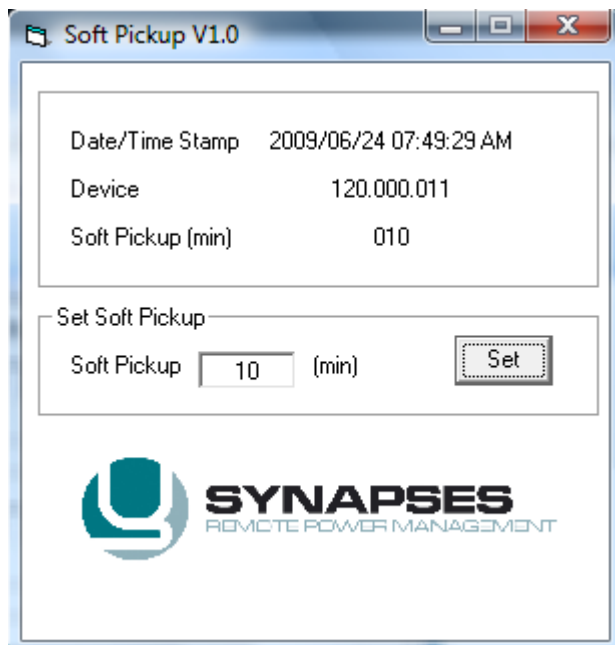


5.6.6 Enable Pattern

5.6.7 Request Soft Pickup

After a power failure the device relay will stay off for 10 minutes [default]. After the 10 minutes the device will continue with standard operation. This is to ensure that the household total come back load after power failure does not exceed the main circuit breaker current installed in the distribution board.

The soft pickup time must first be requested to be able to set it.



Red & Green LED on SmartRelay:



- Flashing fast: Relay is OFF and in soft pickup mode. Usually after power failure - **Correct**

5.6.8 Override [Off]

The shedding pattern is disabled and the relay is set to the OFF state.

5.6.9 Override [On]

The shedding pattern is disabled and the relay is set to the ON state.

Customer support

Please email any queries to [*info@romulus.co.za*](mailto:info@romulus.co.za)