



# Electric Switch

LW934

Installation manual



# EC DECLARATION OF CONFORMITY

Responsible Authority:

LightwaveRF PLC,  
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Faraday Wharf  
Holt Street  
Birmingham  
B7 4BB

Tel: +44 (0)121 250 3625  
Email: enquiries@lightwaverf.com

Model Number(s):

LW934

Description:

Electric Switch

Directives this equipment

Complies with:

2006/95/EC The Low Voltage Directive N/A  
2004/108/EEC The Electromagnetic Compatibility Directive  
1999/5/EC R&TTE Directive  
93/68/EEC CE Marking Directive

Standards Applied in order to verify compliance

Safety: BS EN 60730-1: 2011

Health:

R&TTE: EN 301 489-1 V1.9.2: (2011-09), EN 301 489-3 V1.4.1: (2002-08)  
EN 300 220-1 V2.1.1: 2006, EN 300 220-2 V2.1.2: 2007  
EMC: EN 301 489-1 V1.9.2: (2011-09), EN 301 489-3 V1.4.1: (2002-08),  
EN 55022: 2010, EN 61000-3-2: 2006 +A1: 2009 +A2: 2009 Class A,  
EN 61000-3-3: 2008, EN 61000-4-2: 2009,  
EN 61000-4-3: 2006 +A1: 2008 +A2: 2010, EN 61000-4-4: 2012,  
EN 61000-4-5: 2006, EN 61000-4-6: 2009, EN 61000-4-11: 2004

For and on behalf of LightwaveRF PLC

Name

J Shermer

Position

Managing Director



## How do I get started?

To install the Electric Switch, please follow these instructions. The device can be used to remotely switch mains electrical devices such as towel rails, electric radiators and immersion heaters rated at up to 3000W (13A). It has an in-built thermostat allowing you to set temperatures for electric heaters. Please note: it is **not** designed to be used as a fused spur.



## What do I need?

To install the Electric Switch, you must understand how to safely turn off the electricity supply and be comfortable with following some basic wiring instructions. You will also need suitable electrical screwdrivers.



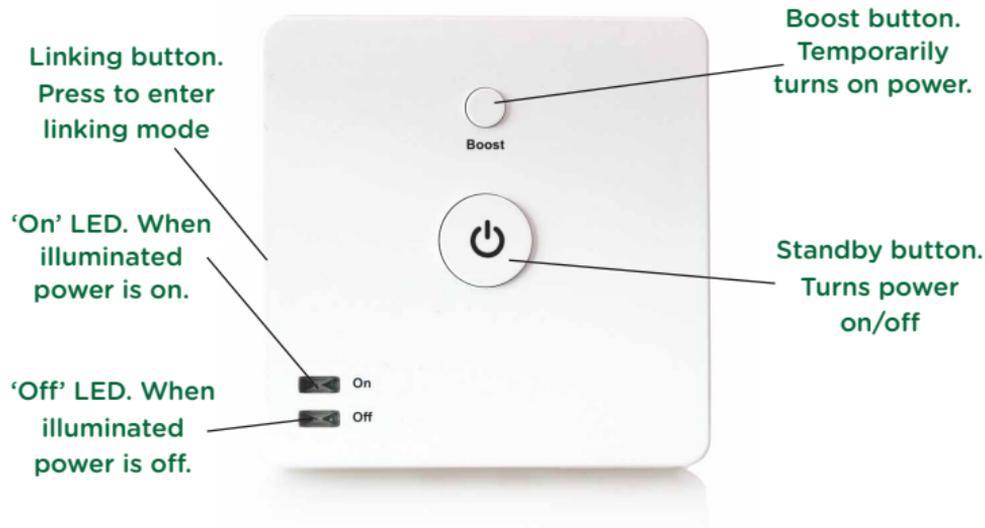
## Help video & further guidance

For additional guidance, and to watch a video that will help guide you through the installation process, please visit the support section on [www.lightwaverf.com](http://www.lightwaverf.com)



## Overview

### Front view



**IMPORTANT:** All LightwaveRF products can be legally DIY installed in your own home; however, if in doubt, always consult a qualified electrician or heating engineer. It is important to install this product in accordance with the following instructions. Failure to do so may void your warranty.

## Rear view with backplate removed



Close-up of  
wiring terminals

**IMPORTANT:** If conducting an insulation resistance test, all LightwaveRF products **must** be disconnected from the mains, or damage will occur.

## Installation preparation

### Key installation tools and materials



Cross-head screwdriver



Flat-head screwdriver



Wire-cutters



Wire-strippers



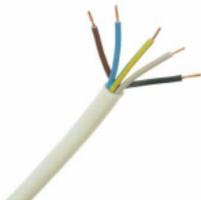
Torch



Sharp Knife



Electrical tape



5 core cable

**IMPORTANT:** If you are unsure about how to use any of these tools and materials, or any stage of the installation process, always consult a qualified electrician or heating engineer.

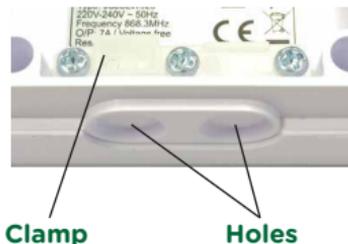
## Safety precautions

- Prior to installing the Electric Switch, read through the wiring instructions provided thoroughly.
- Before proceeding with the installation, check and ensure that no mains power is being received. If a separate wiring centre needs to be accessed, make sure that no power is being received. If in doubt always consult a qualified electrician.
- Never take unnecessary risks if unsure, as damage can be caused by an incorrect installation.
- Do not strip the outer sheathing of flexible cables more than necessary to prevent short circuits.
- Ensure that all cords pass through the cable clamps in the rear of the control box and are securely fixed. Ensure that the power supply is connected such that the current carrying conductors become taut before the earth conductor should the supply cord slip from the cable clamp.
- Only use indoors
- Not to be used as a fused spur

## Remove the backplate and cable clamp

To gain access to the wiring terminals on the Electric Switch, you must first remove the backplate. This can be done by loosening the two screws sited at the base of the unit using a suitable screwdriver. Once the screws are loosened enough so that they protrude from their screw holes, gently lift the backplate away from the main unit and slide it down. Once the hooks are free from their mountings, the backplate should slide free.

Once the backplate has been removed, the cable clamp needs to be unscrewed ready to accommodate the wires. There are also two capped holes situated at the base of the unit. One of these (or two depending on the number of cables used) needs to have its cap removed using a suitable blade so that the wires can pass through.



## Controlling an immersion heater or towel rail or other electrical devices

The Electric Switch can be used to remotely turn on/off any connected electrical devices up to 3000W. It can be set to operate thermostatically or as an on/off relay only (see device setup section for details).

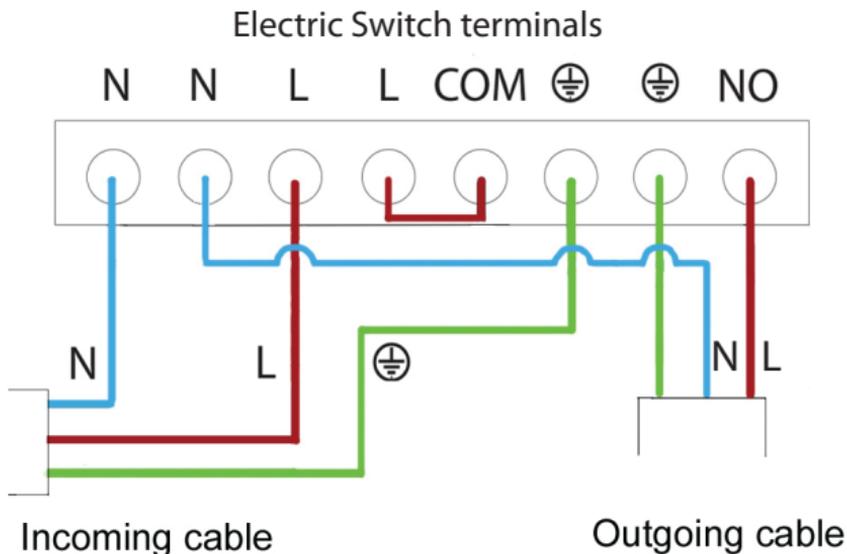
Any connected loads **must** be resistive loads such as immersion heaters, towel rails, electric heaters, lighting circuits or electric gates. **The switch is not suitable for switching inductive loads, such as contactors, unless used with an appropriate surge protector to prevent damage caused by electrical surges.**

Link the mains cables to the Electric Switch as shown in the diagram. Be aware, the first diagram assumes the switching of mains power NOT a volts free system. The switch can also be used to switch volts free (useful for curtains and door operators amongst others) as shown in the second diagram. In such installations, mains live should NOT be connected to the COM terminal; the volts free connections should connect to COM and NO only. Note that the switch will still require mains power to the L and N terminals for it to operate volts free.

## Typical wiring plan for electrical heaters and other devices

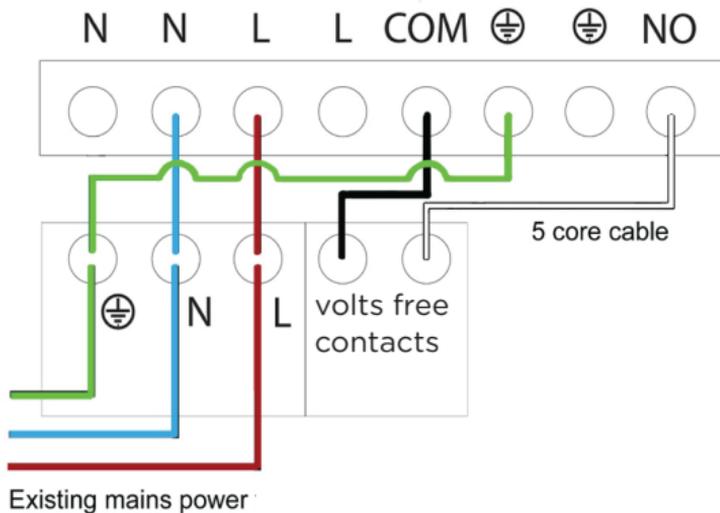
Link the mains cables to the Electric Switch as shown in the diagram. Be aware, the diagram assumes the switching of mains power NOT a volts free system.

**Turn off the mains power first!**



## Typical low voltage wiring plan

Link the mains cables to the Electric Switch as shown in the diagram. Be aware, the diagram assumes the switching of a volts free system.



## Completing the Install

### Install the cable clamp

Once the cable(s) have been connected, the cable clamp needs to be reattached in order to secure them and to ensure that they cannot become dislodged from the terminal connections. The cable(s) should run through holes situated at the base of the unit.



Clamp

Holes

### Mounting the Electric Switch

It is recommended to mount the Electric Switch to the wall next to the radiator or device that it is controlling in a suitable place. The backplate includes two screw holes which allow the plate to be mounted to a wall using suitable screws. Once mounted, the main unit can be slotted back into place and the screws tightened.



Hook

Mounting  
hole

Screws

## Basic operation

The Electric Switch will allow a connected electric heater, towel rail or other electrical device (maximum 3000W resistive load) to be turned on/off remotely. It has an in-built thermostat which means that current temperatures are constantly monitored and reported. The Electric Switch can operate a connected device directly, or be scheduled to switch on/off the device once a set temperature is reached.

The Electric Switch can be controlled manually or by linking it to the LightwaveRF Link and App to enable remote control from a smartphone, tablet or PC. The following section will show you how to use the basic features and how to link the Electric Switch to the App.

### Understanding the Indicator LEDs

**Steady Green 'On':** The connected device is powered

**Steady Red 'Off':** The connected device is unpowered

**Alternate On/Off (longer on LED):** Linking mode

**Alternating Off/On (Longer off LED):** Unlinking mode



On



Off

## The Standby button

Standby button



If not connected to the App, pressing the Standby button on the Electric Switch toggles the connected heater or electrical device on/off.

When connected to the App, if the connected device is on, pressing the Standby button overrides the current schedule and turns **off** the device until the next scheduled 'on period'. If the heating is off, pressing the Standby button will turn the device on until the next 'off period'.

### The Boost button

Pressing the Boost button on the Electric Switch raises the target temperature several degrees above the current temperature for the duration of one hour. If the target temperature is already several degrees higher than the actual temperature, then pressing boost will simply match this temperature.

### Using the Heating Handset

A LightwaveRF Heating Handset can be linked to an Electric Switch directly, or via a linked Home Thermostat (see thermostat instructions).

Once linked, the Standby button on the Handset will toggle between Running and Standby modes in the same way as the Standby button on the Switch. The Boost button operates the Switch Boost button.

The plus and minus arrows on the handset will raise or lower the target temperature a few degrees above or below the current temperature.



# Linking to the LightwaveRF Apps

To use the LightwaveRF App or Web App to control the Electric Switch, you will first need to install the 'Lightwave Link'. This allows any LightwaveRF devices to be linked to and controlled by a smartphone, tablet or PC. The switch can be linked to the App using the following method:

- 1.** Download the App and follow the in-App setup instructions to setup the Lightwave Link and App. Access the 'Heating Page' and follow the instructions regarding how to add a device.
- 2.** When prompted, press and release the 'Link' button on the Electric Switch ('link' will flash on the screen).
- 3.** Send the linking command from the App (the in-App instructions will explain how to do this). 'Link Ok' will flash on the screen to indicate a successful link.



## Using the switch with the LightwaveRF App

**NOTE:** For full instructions on how to use the Electric Switch with the LightwaveRF App or Web App follow the in-App help or visit [www.lightwaverf.com](http://www.lightwaverf.com).

The Heating Page allows you to view every LightwaveRF Heating Device that you have set up on the App. Displayed for each device is its current temperature, set target temperature and the next change to be enacted by the heating schedule.

If you select a device, you can view more options. From this screen you can change the current target temperature using the main dial. You can also view the heating schedule for each day by selecting the individual week days. To edit the heating schedule for this device, select the 'edit schedule button'.



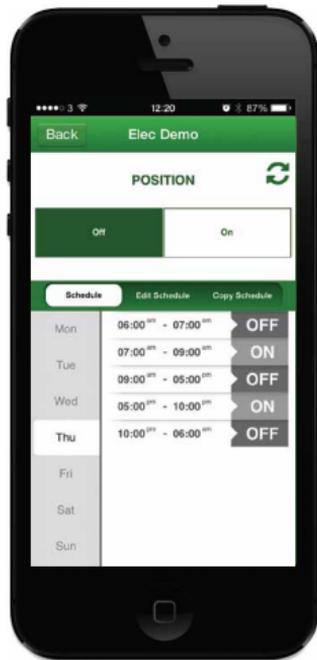
### Thermostatic or on/off control

Once you have linked the Electric Switch to the App, you can choose how you want it to behave.

The Electric Switch has the capability to utilise its in-built thermostat to monitor and set the temperature. This is its default mode of operation.

If you want the Electric Switch to turn on/off at a scheduled time only rather than at a scheduled temperature, you can switch from temperature monitoring mode to on/off.

To switch between modes, select the relevant Electric Switch from the heating page on the App, and click on the arrows at the top right corner of the screen. The current temperature reading should switch to an on/off control which can also be scheduled.



# Add other heating devices

Lightwave<sup>RF</sup>

## Home Thermostat

(monitors house temp.)



## Boiler Switch

(turns boiler on/off)



## Lightwave App

(control from anywhere)



## Heating Remote

(sets house temp.)



## Lightwave Link

(runs the show)



## Home or Away button

(turn house on/off)



## TRV

(controls radiator)



## Magnetic Trigger

(open window turns off TRV)



## Electric Switch

(controls electric radiators)

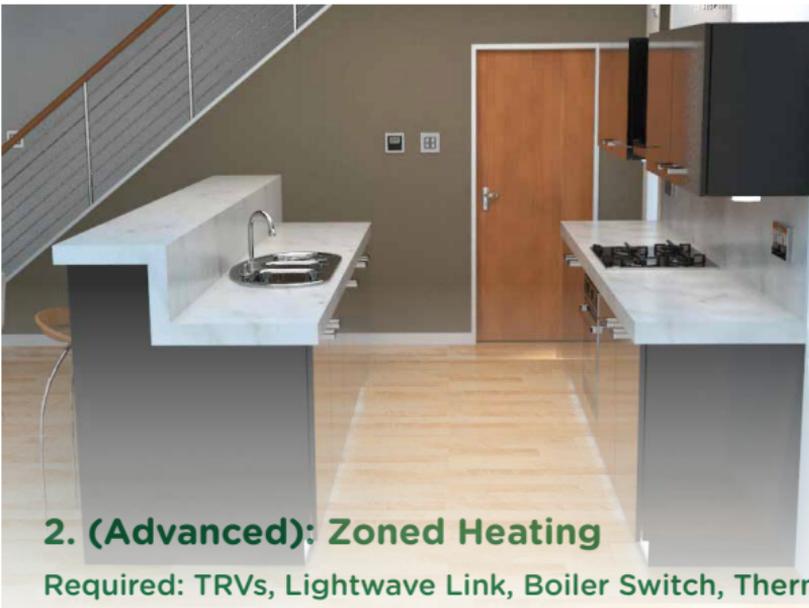
Room by room radiator control



## 1. (Easy): Remote control of a single radiator

**Required: Electric Switch, Heating Remote**

It is really comfortable and convenient to be able to have direct control over the room temperature without having to get up and alter the thermostat or manually turn on an electric radiator. This can be achieved quickly and easily using the LightwaveRF Electric Switch and Heating Remote. Installed in seconds, they can turn off the radiator in the room and allow you to be comfortable without having to affect the rest of the house heating.



Required: TRVs, Lightwave Link, Boiler Switch, Thermostat etc.

With the LightwaveRF App and the **Lightwave Link** you can create an expandable zoned system that can take care of your entire home. Temperatures can be set for each room or 'heating zone', and heating can be planned week by week and room by room. If you have electric radiators, you can still achieve this by connecting them to Electric Switches. You can also link wet radiators, using TRVs, AND electric radiators and schedule them together for a totally integrated heating system!



**Q. Does the Electric Switch have a 'standby' power consumption**

**A.** The Switch has a standby power consumption of approx. 0.5W. This is because the in-built radio receiver requires power in order to receive commands. This rate is low & well within government energy guidelines.

**Q. Can the Electric Switch work with a Home Thermostat?**

**A.** Yes. An Electric Switch can link to a Home Thermostat where the thermostat is acting as a room (not house) controller. The Home thermostat NOT the Electric Switch should be linked to the App in this instance.

**Q. Is it legal for me to install a LightwaveRF Electric Switch myself?**

**A.** Yes, LightwaveRF products are fully legal to install in your own home.

**Q. Is it possible to overload the Switch?**

**A.** 13A (resistive load) maximum. loading applies and should not be exceeded.

**Q. Can I use the switch as an on/off relay ?**

**A.** Yes. The switch can be used to turn electrical devices up to 3000W on/off with or without thermostatic control.

## Specification

**RF frequency:** 868 MHz

**Input:** 230V

**Rating:** 13 Amps

**Warranty:** 2 year standard warranty

Indoor use only



Lightwaverf<sup>RF</sup>

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