

# User Manual

# PowerBox V

*Ver. 2.0*



*Technical Solutions Australia Pty Ltd*

<http://www.tecsol.com.au>

Telephone: (03) 9737 9000

Fax: (03) 9737 9111

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# Introduction

The PowerBox provides a simple, safe and versatile way to control electrical appliances by means of special switches. Any appliance that can be turned on and off by switching the mains power point can be controlled with the PowerBox

The PowerBox has three modes of operation:

## **Instant Mode**

In instant mode the control switch must be held down for the appliance to be activated. Releasing the switch will turn the appliance off.

## **Latching Mode**

The first press of the control switch will turn the appliance on. The appliance will remain on until the control switch is pressed again. Alternatively the Power Box can be fitted with two control switches. Press one switch to activate the appliance, press the other switch to turn it off.

## **Timed Mode**

Pressing the control switch will turn on the appliance, which will stay on for an adjustable, preset time. The appliance will turn off automatically at the end of this time or when the optional off switch is pressed. Timing can be adjusted from 1 second to almost 10 hours.

Other features of the PowerBox include fitted safety cut-out, adjustable tremor delay, operating buttons for carers and the retention of all settings when the PowerBox is disconnected from the power. Provision has also been made for alternative control devices such as speech recognition, infra red and radio link remote controls to be connected to the PowerBox.

## Is My Appliance Suitable for the PowerBox?

The PowerBox operates by switching the 240V supply to the appliance to be controlled. Some modern equipment is not suitable for control by this method. To test that the appliance is suitable, turn the appliance power switch on if there is one, plug it directly into the wall socket and turn the power point switch on. If correct operation follows then the appliance will work with the PowerBox.

If the PowerBox is not suitable for that particular device then Technical Solutions may be able to offer other control options. Contact us to discuss your needs.

## Setup

Plug the PowerBox into the 240V power outlet, turn the power on at the wall and test the safety cut out switch as described in the section on the safety cut-out. Note – to maintain the full protection afforded by the safety cut-out do not use an extension cord. Plug directly into the wall socket.

When the power is turned on, the PowerBox will display a welcome message and version number. If this is the first time that the unit has been turned on it will enter the **Instant** mode with no tremor delay. If the unit has been used before, the previous settings will be restored. In any case, the procedure for changing the settings is the same.

## Changing Operating Mode

Briefly press the **Menu** button on the front panel to change mode.

With each press, the display will show:

INSTANT then LATCH then TIMER

## Setting the Time Delay

To set the time delay follow the above instructions to select **Timer** mode and then press and hold **Menu** for 2 seconds.

Set TIME 0:00:00

where *h:mm:ss* is the current delay time in *hours:minutes:seconds*.

An underline cursor should be visible under the hour position, indicating that this is the value to be adjusted. Pressing **Up** or **Down** will change this value. Once the desired number of hours are visible, pressing **Menu** will enter that value and move the cursor to the last place of the minutes. Again, **Up** and **Down** will change the value displayed. Pressing **Menu** will enter the minutes value and move onto the seconds, which can be set in a similar manner. Once the time settings have been made, pressing **Menu** again will return to:

TIMER

NOTE – if a time delay of **0:00:00** is entered then the operating mode will automatically change to **Instant**.

## Setting the Tremor Delay

The Tremor Delay operates only on the external user switch and sets the period of time that the switch must be held before activation. If the switch is released in this time the appliance will not operate.

The Tremor Delay can be very useful if the switch is likely to be inadvertently bumped - with a Tremor Delay of about 0.1 to 0.5 seconds, such bumps will not activate the PowerBox whereas a longer sustained switch press will activate the PowerBox.

## Setting the Tremor Delay

The tremor delay does not apply to the front panel buttons, nor to the external OFF switch.

To set the **Tremor Delay** follow the above instructions to select **Instant** mode and then press and hold **Menu** for 2 seconds.

Set TREMOR **x.xs**

where **x.x** is the current tremor delay in seconds and tenths of seconds. Use the **Up** and **Down** buttons to select the desired delay. Setting the delay to **0.0** will mean that there is no tremor delay.

Pressing the menu button will set the tremor delay and return to Instant mode.

## Control Switch Selection

The PowerBox uses standard 3.5mm mono jack plugs to connect the control switch. This means that any of the large range of push button and special function switches available can be used with the PowerBox. Technical Solutions has many types of switches in stock or can design custom switches to suit individual requirements. In some cases professional advice should be sought regarding appropriate switch selection.

## Operation

Operation of the PowerBox is simplicity itself.

With the power off, plug the appliance to be controlled into the PowerBox and plug the control switch into the socket labeled **Main Switch** on the side. If an external **Reset** switch is being used, plug this in as well. Apply power to the PowerBox. You are now ready to control your appliance.

The display will show the current operating mode, together with the state of the appliance, whether it is on or not. For example, if latching mode has been selected and the appliance is not on, the display will show

LATCH (ready)

In timer mode the display will show the time delay that has been set when it is in the ready state. For example,

Ti mer 1:23:45

indicates a time delay of 1 hour, 23 minutes and 45 seconds.

If you want to change the operating mode then follow the instructions in the Setup section.

Activating the control switch will now turn the appliance on, after the tremor delay if one has been set. If a tremor delay has been set then the display will indicate this when the switch is activated by showing the message

Tremor Delay ...

while the delay is in progress. If the switch is released while this message is displayed there will be no action.

### **Instant Mode**

In Instant mode, the appliance will turn on with the first press and stay on until the first release of the control switch. Note that the reset switch has no effect in instant mode. Also, the tremor delay does not apply to the *release* of the switch in instant mode.

### **Latching Mode**

In Latching mode, the appliance will turn on with the first press of the switch. A second switch press is then required to turn the appliance off. The tremor delay will apply to *both* switch presses. Alternatively, the appliance can be turned off using an external or the front panel reset switch.. The tremor delay does not apply to these switches.

## Timer Mode

When using Timer mode, the appliance will turn on with the first press of the control switch and stay on until the time delay has elapsed. The display will indicate the time remaining while the appliance is on. The external or front panel reset switch can be used to end timing early and turn the appliance off if this is desired. The timer will be automatically reset once it is turned off.

## The Safety Cut-Out

The PowerBox is fitted with a CLIPSAL LIFESAVER plug on the power supply lead. This provides a high degree of protection in case a fault develops in either the PowerBox or the device it is controlling. If the fault allows electric current to flow through the user's body (an electric shock) the LIFESAVER will disconnect the power in 40 milliseconds (4/100<sup>th</sup> of a second). That is shorter than a heartbeat and fast enough to save a life.

## Testing

The LifeSaver plug incorporates a test facility and should be tested before initial use:

With nothing plugged into the PowerBox, plug the LifeSaver into the wall and turn the power on. If the LifeSaver Reset button is in the off position (out) press Reset. The Reset button should stay in the on position. If not, return the equipment to Technical Solutions for repair.

Press the Test button: Reset should move to the off position. If Reset stays on then return the equipment to Technical Solutions for repair.

**DO NOT USE.**

Return the Reset Button to the on position. The LifeSaver is now ready for use.

The LiferSaver plug should be tested at least annually to ensure continued protection.

## **Important Notes**

The LifeSaver plug is not intended to be a substitute for basic electrical safety precautions. It will protect against faults to earth through the body but not against active to neutral faults.

Never plug the LifeSaver into the socket on the end of an extension cord. Always plug directly into a fixed power point.

## **Trouble Shooting**

The PowerBox is a robust device which will give years of reliable service. However, problems may arise from time to time. The following guide may help in these cases.

### **Problem:**

There is no display and the appliance will not work with the power box.

### **Possible Cause:**

- 1) The PowerBox is not plugged in to the wall socket or the power switch is not on
- 2) There is no power available at the wall socket – use a lamp to check this
- 3) The safety cut-out has tripped

### **Action:**

If there is no power at the wall socket an electrician should be called. If the safety cut-out has tripped then there may be a dangerous fault with either the PowerBox or the appliance plugged in to it. In no case should either device be used until checked by a qualified person.

## **Problem:**

The PowerBox seems to work but the appliance does not.

### **Possible Cause:**

- 1) The power switch on the appliance, if present, is off
- 2) The device being controlled by the PowerBox is not working

Check the appliance by plugging it directly into the wall socket

- 3) If the above tests show the appliance is working then there is a fault with the PowerBox.

### **Action:**

In the case of an appliance fault refer to the supplier or other qualified person. A faulty PowerBox should be returned to Technical Solutions for repair.

## **Problem:**

The PowerBox seems to work but the display does not make sense.

### **Action:**

Turn the power off at the wall switch, wait 10 seconds then turn the power back on. If proper function is restored then the PowerBox is ready for use. If the problem persists or recurs then contact Technical Solutions.

## **Problem:**

Pressing the control switch does nothing.

### **Action:**

- 1) Check the switch is securely plugged into the PowerBox
- 2) Check operation of the control switch. Do this by plugging the switch into a known working device.
- 3) If the control switch is thought to be OK, press the ON button on the PowerBox front panel. If the appliance turns on then there is a fault in the PowerBox. Contact Technical Solutions.

## Care and Cautions

The PowerBox draws little power when it is in the ready state, and may be left connected to the mains continuously.

Be careful when placing appliances with moving parts or that generate heat (eg mixers, fans, light bulbs, heaters etc) near the user. Be certain that operation of the appliance is safe.

Keep the floor clear of cords to avoid trips and falls and to prevent the PowerBox or appliance being pulled to the floor - keep the PowerBox, appliance and operating switch out of reach of children.

The 3.5mm inputs are intended only for switches. Plugging battery chargers or eliminators into this socket may damage the internal electronics of the PowerBox.

Never exceed the 2400W 10Amp maximum power rating of the PowerBox.

If cleaning is required disconnect the PowerBox from the power and the appliance from the PowerBox. Wipe the outside with a damp cloth. Never use solvents.

Never carry the PowerBox by the power cord.

The PowerBox and LifeSaver plug are designed for use in dry conditions. Do not use in areas where the product may be exposed to rain or moisture. Never immerse.

There are no user serviceable parts inside. Return to Technical Solutions for repair.

If the supply cord is damaged it must be replaced by Technical Solutions, an authorised service agent or similarly qualified person in order to avoid a hazard.

Technical Solutions Australia Pty Ltd  
Ferndale Rd  
Silvan VIC 3795

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