DIGINET
CONTROL SYSTEMS

Installation Guide **MMSW/PB**

LEDsmart+™

Push Button Switch for LED lighting with built in multi-way control

- Suitable for one-way, two-way, three-way and multi-way switching
- MultiMate™ technology allows multi-way switching with no extra wires
- Fully programmable
- Quiet, soft press button - no harsh click
- White LED, illuminated bezel
- Optional soft start switch on
- Flush and rocker style button options
- Simple 3-step programming

Patent Pending

Registered Design

RoHS COMPLIANT

Powered by MultiMate TECHNOLOGY

Designed in Australia to meet Australian Standards and installation conditions

Product Item

This guide provides installation, setup and specification information for the LEDsmart+ Push Button Light Switch, item number **MMSW/PB**.

Product summary and capabilities

Designed in Australia to provide optimised switching of LED based lamps and drivers, this high quality, two-wire electronic switch mechanism can be connected in parallel to other LEDsmart+ devices to provide a simple solution to multi-way control.

As part of the LEDsmart+ range, this electronic switch enables all LEDsmart+ dimmers, switches and timers to be combined onto the same wall plate, providing the user with a consistent look and feel.

Programmable setup functions

Setup functions	Description
Maximum Brightness	The maximum brightness level provided by the switch can be set to suit customer requirements
LED indicators	The switch's white LED indicators can be set to glow on or turn off when the switch is off *Default: The white LED indicators are set to glow on when the switch is turned off*
Soft Start	Soft start switches the lighting on over a half second period. This can increase lamp life in some cases and can also produce a better switch on effect for the user. *Default: Soft start is disabled*
MultiMate™ ON/OFF	MultiMate™ functions can be switched ON or OFF *Default: MultiMate™ features are switched on*

There are a wide range of LED and CFL lamps available from different manufacturers. The following issues are occasionally seen when used in conjunction with 2-wire dimmer/timer/switch products.

- When switched off, the LED/CFL lights flicker, pulse on/off or do not switch off completely
- When switched off, the LEDsmart+ LED indicators flicker
- When switching on, the LED/CFL lights have difficulty switch on and the LED indicators flicker or pulse

It is recommended to install a Diginet 'Load by-pass' device (Diginet item number **MMBP**) across Load and Neutral terminals to provide improved performance of these lamps.

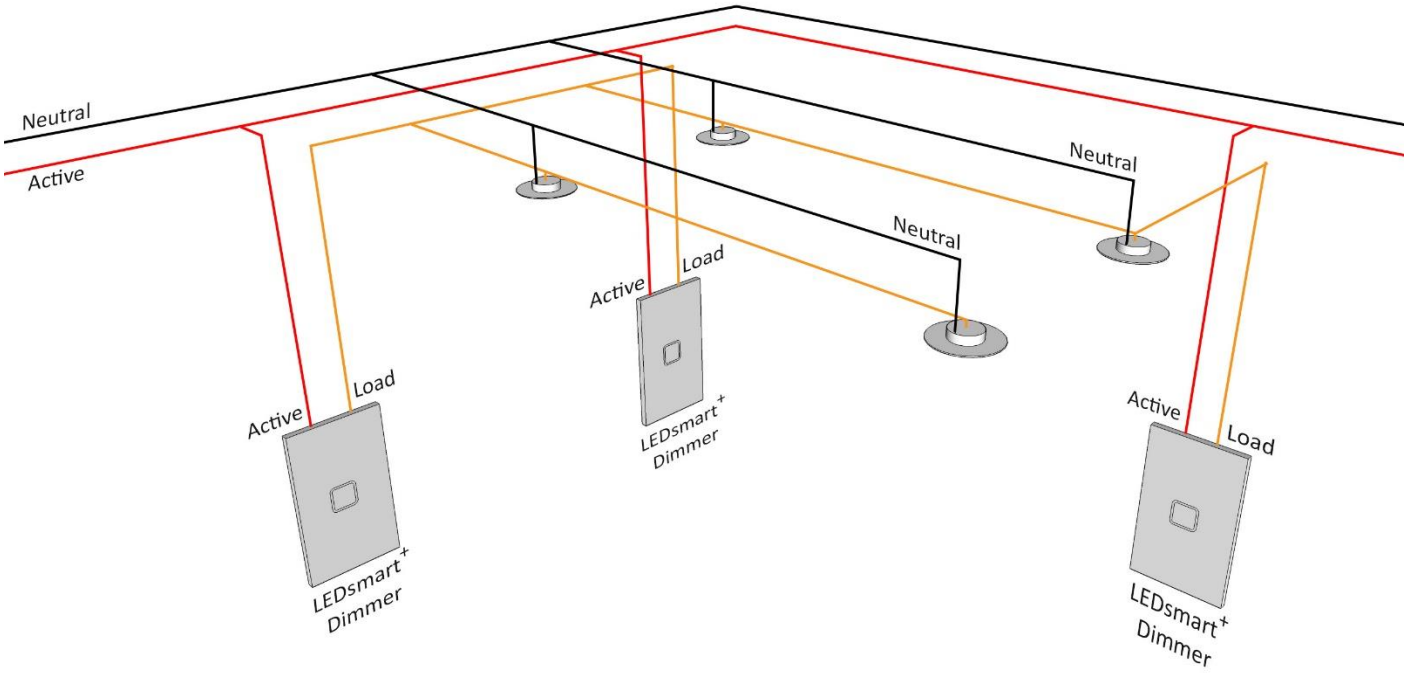
Multimate™ technology

MultiMate™ is a technology inside Diginet's range of high quality LEDsmart+ dimmers, timers and electronic light switches. It allows multi-way control of lighting without the need for an expensive control system. MultiMate™ technology is suitable for both new and retrofit installations.

MultiMate™ technology enables multiple LEDsmart+ two-wire devices to be wired in parallel when two-way, three-way or multi-way dimming and switching is required. When connected in parallel LEDsmart+ dimmers allow dimming (and switching) of connected lighting loads from multiple locations without any additional wiring. No strapper wires, dedicated remote switch wiring or 'control bus' is required.

MultiMate™ is a patented technology, developed in Australia by Gerard Lighting.

The wiring example below shows three LEDsmart+ dimmers connected in parallel to provide three-way dimming and switching of four downlights without any additional wiring.



Products with MultiMate™ technology included

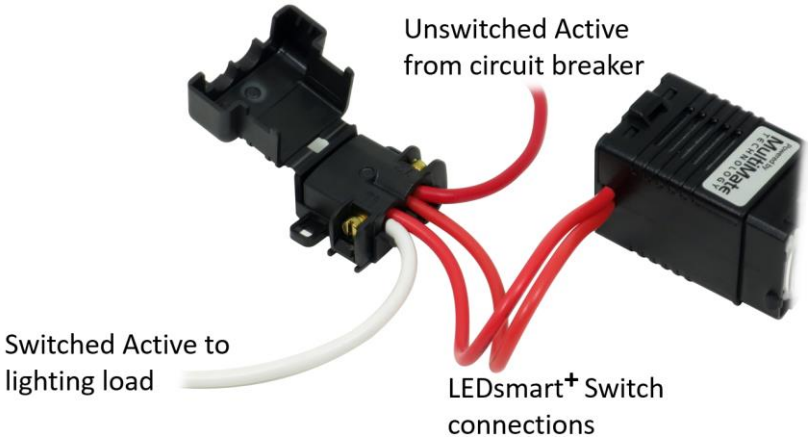
The following products all include MultiMate™ technology and can therefore be connected in parallel to allow multi-way control. Note that different types of MultiMate™ products can be connected in parallel. For example, switches and dimmers can be connected in parallel to control the same group of lights from different locations and/or provide additional functionality.

Product Range	Item Number	Type	Description
LEDsmart+	MMDM/RT	Dimmer	Rotary Dimmer with built in on / off switch and multi-way control
LEDsmart+	MMDM/PB	Dimmer	Push Button Dimmer with built in on / off switch and multi-way control
LEDsmart+	MMSW/PB	Switch	Push Button Switch for LED lighting with built in multi-way control
LEDsmart+	MMTM/PB	Timer	Push Button Minute Timer programmable between 1 minute and 30 minutes with built in multi-way control
LEDsmart+	MMTH/PB	Timer	Push Button Hour Timer programmable between ¼ hour and 7½ hours with built in multi-way control

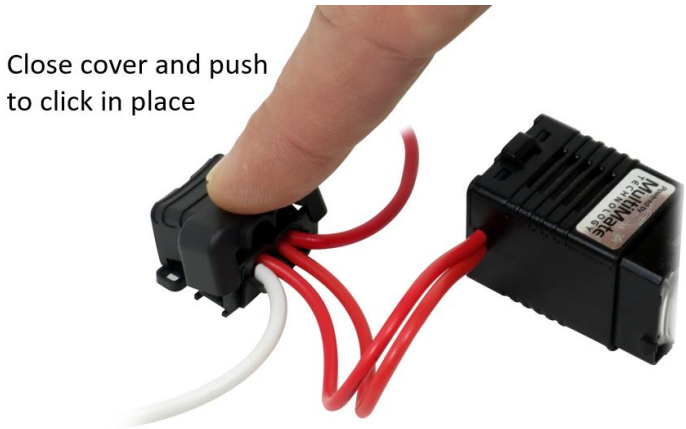
Switch installation

WARNING – This product must be installed by a suitably qualified installer
Electric shock may result in serious injury or death. Follow all warnings in this guide and on the product while working in accordance with the latest electrical safety practices for mains-powered electrical equipment.

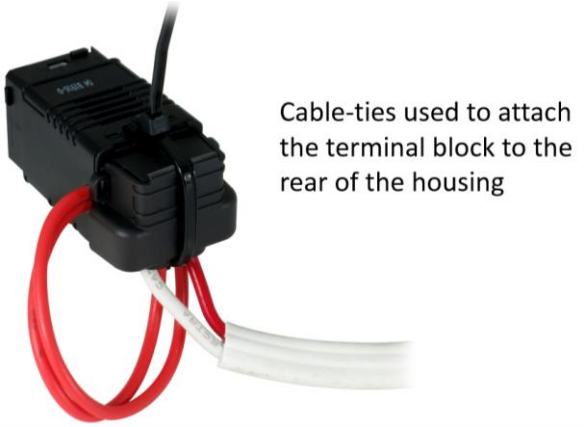
The terminal block included with the switch should be used to carry out the electrical connections, as shown below.



Once the connections have been made, the terminal cover is closed to ensure the screw terminals are not exposed.

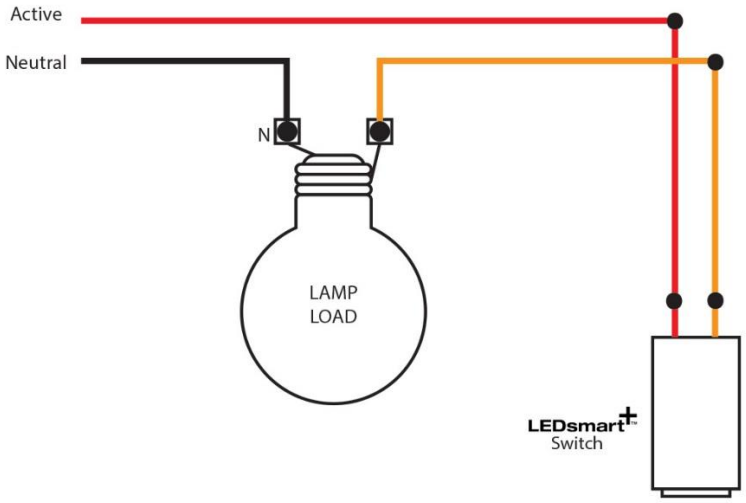


The terminal block can then be cable-tied to the rear of the switch utilising the two loop holes to the housing.



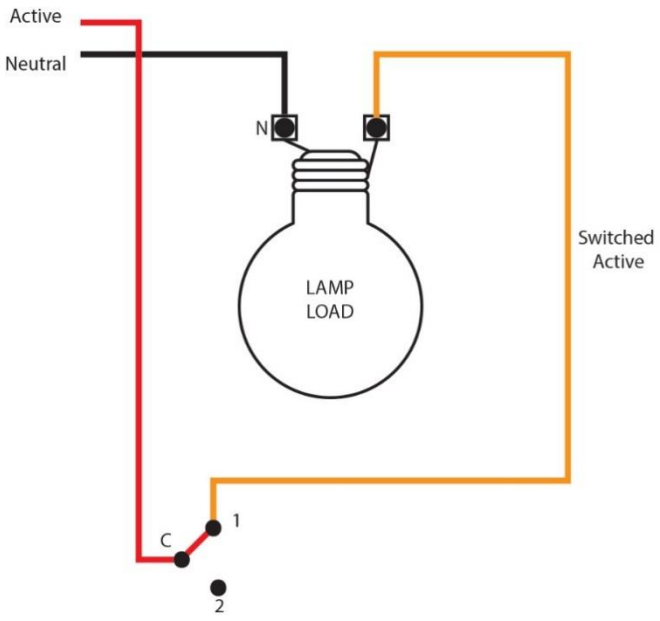
Wiring for one-way switching

New Installation – one-way switching

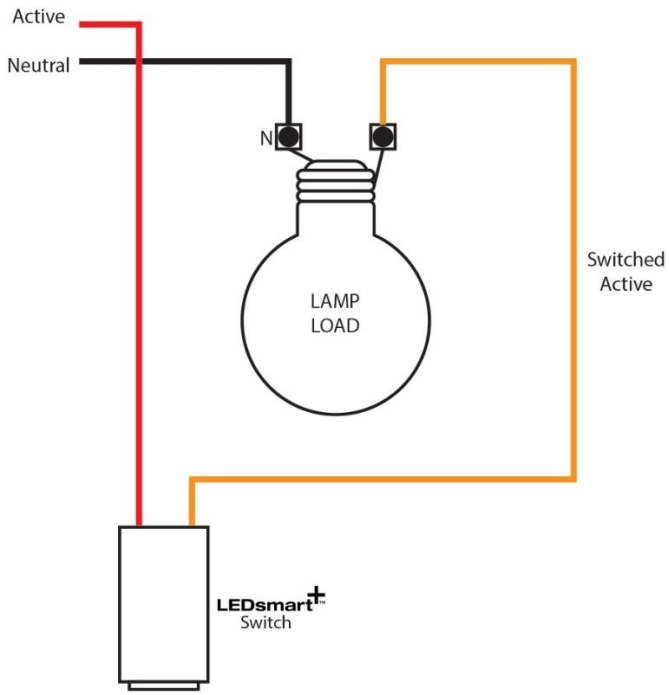


Replacing existing standard one-way switch with an LEDsmart+ switch

Existing one-way switching



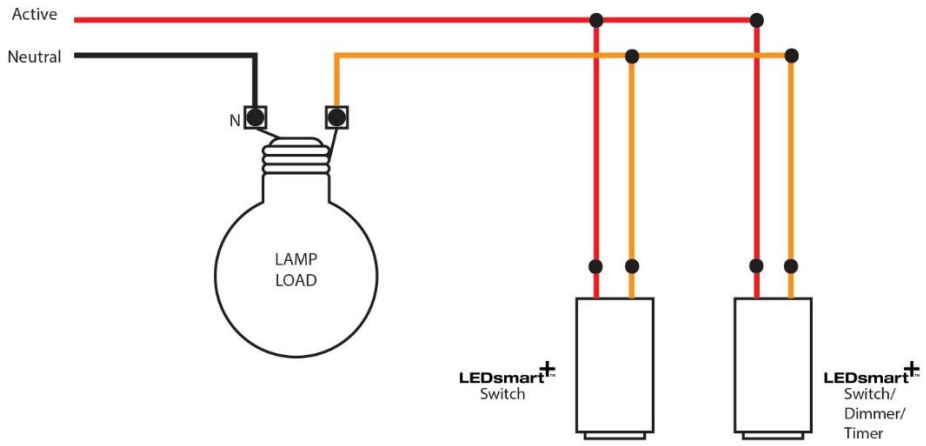
Replacement LEDsmart+ switch



Wiring for two-way control

To achieve two-way control using LEDsmart+ products, they are connected in parallel. Note any LEDsmart+ products can be connected in parallel. For example an LEDsmart+ push button switch and dimmer can be wired in parallel to provide two-way control.

New Installation – two-way LEDsmart+ control

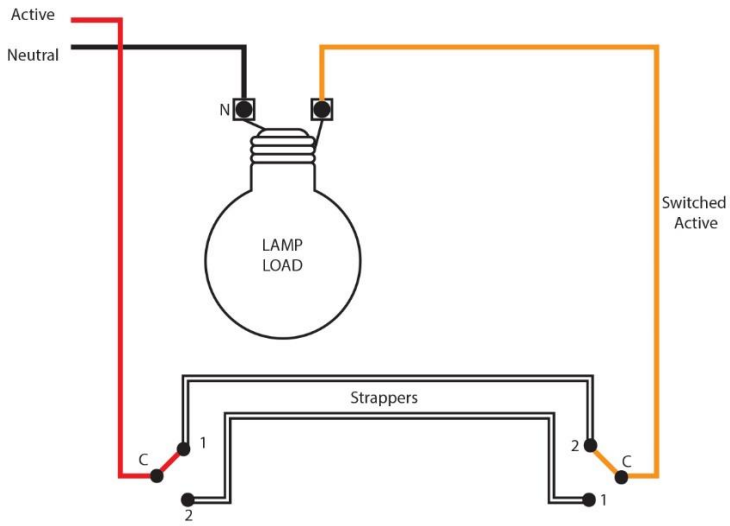


Two-way control using an LEDsmart+ switch and an additional LEDsmart+ switch, dimmer or timer. Note these devices are simply wired in parallel.

Replacing existing two-way switching with two-way LEDsmart+ control

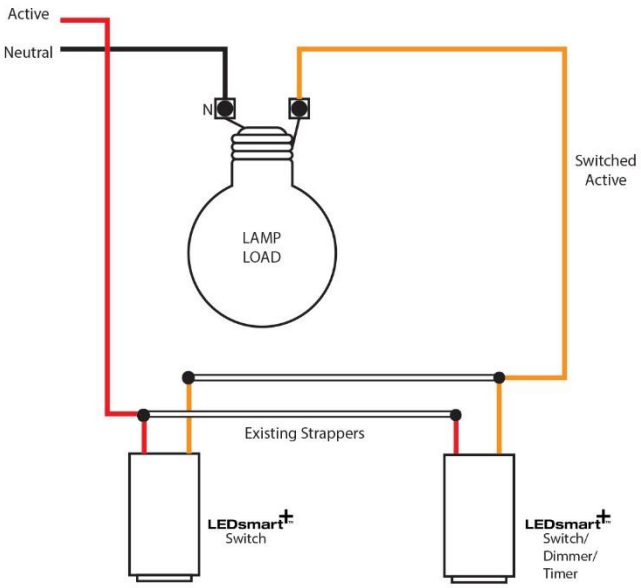
When replacing existing two-way switching with two-way control using LEDsmart+, the existing two-way 'strapper' wires can be re-used. No new wiring is required. See the wiring diagrams below.

Existing two-way switching



Traditional two-way switching using standard rocker switch mechanisms and strappers between the switches.

Replacement two-way LEDsmart+ control



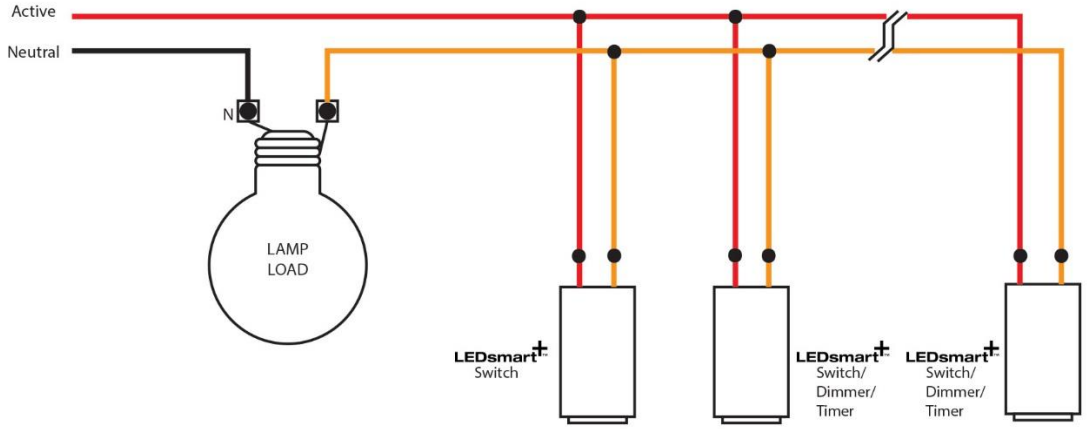
Rocker switches replaced with LEDsmart+ devices using the existing strapper wires. No new wiring required.

Wiring for multi-way control

To achieve multi-way control using LEDsmart+ products, the required LEDsmart+ products are connected in parallel.

The diagram below shows the required wiring for three-way control using LEDsmart+ devices. If more than three-way control is required, further LEDsmart+ devices are simply wired in parallel.

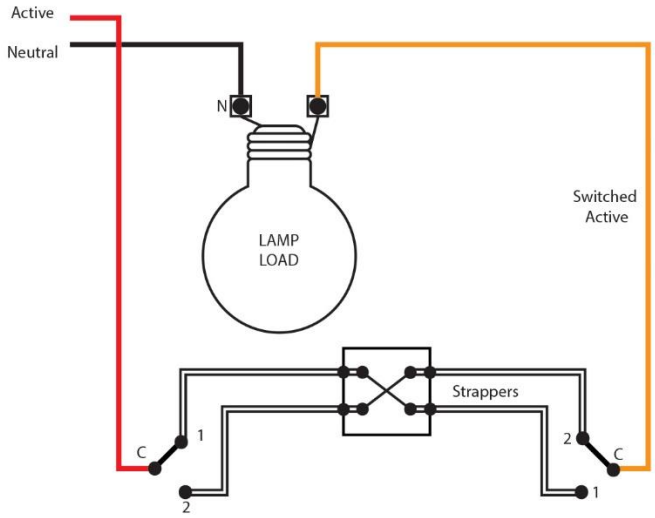
New Installation – LEDsmart+ multi-way control



Three-way control using LEDsmart+ devices. Note that each two-wire LEDsmart+ device is simply wired in parallel.

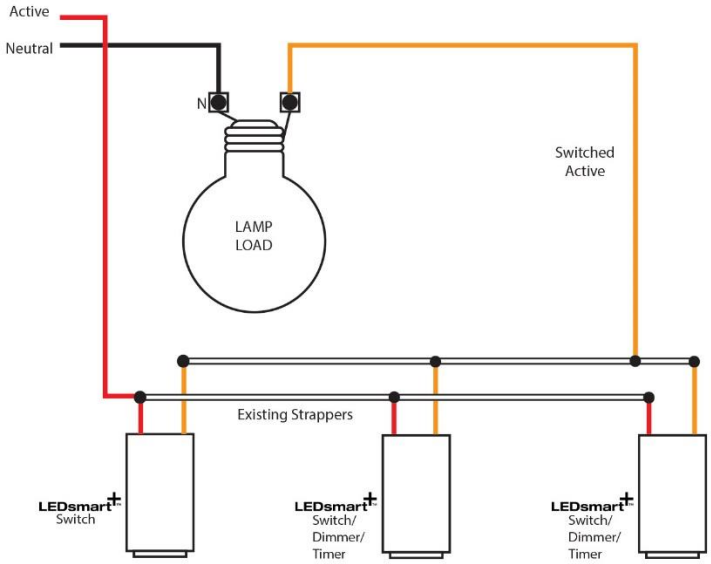
Replacing existing multi-way switching with LEDsmart+ multi-way control

Existing three-way switching



Traditional three-way switching using two rocker switches and one intermediate switch, with strappers between the switches.

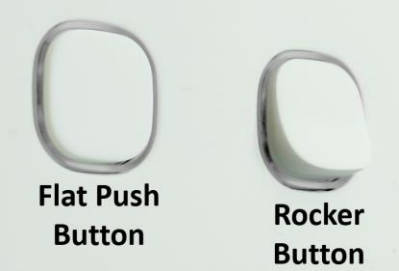
Replacement three-way LEDsmart+ control



Rocker switches and intermediate switch replaced with LEDsmart+ devices. The existing strappers are used to connect the devices in parallel. No new wiring is required.

Rocker and flat push buttons

Two different styles of push buttons are included in the switch packaging, rocker and flat push button styles. These are interchangeable, depending on customer preferences.



Coloured Bezels

The switch's LED indicators are white and the pre-fitted bezel provides a white glow around the switch button. Interchangeable blue, green and orange bezels rings are also included with the switch. These can be used to change the colour of the LED indicators to match customer colour preferences and/or to more easily identify different LEDsmart+ devices on the same grid plate.

Installing LEDsmart+ devices into Clipsal Saturn™ or Clipsal Saturn Zen™ wall plates

Adaptor kits are available separately to enable LEDsmart+ devices to be installed into Clipsal Saturn™ or Clipsal Saturn Zen™ wall plates. Order codes are as follows.

DGACCESSPK2	Adaptor kit for LEDsmart+ Push Button devices
DGACCESSPK3	Adaptor kit for LEDsmart+ Rotary dimmers

Switch Setup

The LEDsmart+ push button switch has a number of useful functions which can easily be set up by entering setup mode and following three easy steps.

It is recommended that the MAXIMUM BRIGHTNESS is always setup. The other settings are optional, depending on the application. To set the maximum brightness now, go to the next page.

Switch Setup Functions

Function	See Part
Entering **Setup** Mode	See page 9
Setting **Maximum Brightness**	See **online guide**
Setting **Soft Start Mode**	See **online guide**
Setting **Off State LED Feature**	See **online guide**
Setting **MultiMate™ Mode**	See **online guide**
Factory Defaults **Reset**	See **online guide**

Online Guide

Full details on setting all the available LEDsmart+ functions can be found at the Diginet website here www.diginet.net.au/diginet-ledsmart-plus-switch-installation-information

or simply scan the QR code below with your smart device to go to this page

A: Entering Setup Mode

If the switch has been powered up for **LESS THAN 30 MINUTES** see **A1** below.

If the switch has been powered up for **MORE THAN 30 MINUTES** see **A2** below.

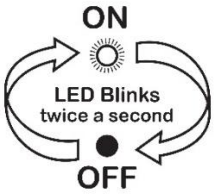
Once in Setup Mode, options are selected by a series of 'clicks' of the push button. Each 'click' should be approximately 1 second after the previous click.

A1: Switch has been powered up via mains 240Vac for LESS THAN 30 MINUTES

Step 1 Press and hold the button for 10 seconds
Note: Connected lights will dim up or down, this is normal

Step 2 The white LED Indicators will blink ON/OFF twice per second. This indicates that the switch is now in Setup Mode

Note: If more than one LEDsmart+ switch is connected in parallel (see pages 5-7), all these switches will now enter setup mode. The blink ON/OFF will also be seen on all other LEDsmart+ switches connected in parallel



In the unlikely event that other LEDsmart+ devices connected in parallel do not enter setup, exit and try again.

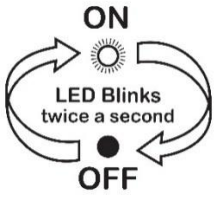
Step 3 The switch is ready for the settings to be adjusted as required. Go to the relevant setup function instructions

A2: Switch has been powered up via mains 240Vac for MORE THAN 30 MINUTES

Step 1 Press and hold the button for 30 seconds
Note: This resets the Setup Entry time back to 10 seconds (for the next 30 minutes)
Note: Connected lights will dim up or down, this is normal

Step 2 The white LED Indicators will blink ON/OFF twice per second. This indicates that the switch is now in Setup Mode

Note: If more than one LEDsmart+ switch is connected in parallel (see pages 5-7), all these switches will now enter setup mode. The blink ON/OFF will also be seen on all other LEDsmart+ switches connected in parallel



In the unlikely event that other LEDsmart+ devices connected in parallel do not enter setup, exit and try again.

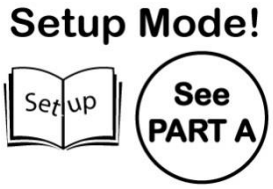
Step 3 The switch is ready for the settings to be adjusted as required. Go to the relevant setup function instructions

B: Setting Maximum Brightness

The maximum brightness level provided by the switch can be set to suit customer requirements.

Note that when lamps are near to full brightness, it is difficult to see changes in dimming level. Therefore, when setting up maximum brightness, it is recommended that the lamp is slowly dimmed up to a point where no further changes in brightness can be seen, and the maximum level set at this point.

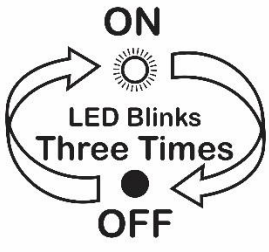
Step 1 Enter into the switch Setup Mode - See PART A



Step 2 Click the push button 3 times

Step 3 LED will blink 3 times

Note: To cancel/exit do nothing for 30 seconds



Step 4 Press and hold the switch button to adjust to required maximum brightness level, releasing the button when the required level is reached

Note: The direction of adjustment will alternate with each press

Note: To cancel/exit do nothing for 30 seconds

Step 5 Click once to save & exit

Note: If there are multiple LEDsmart+ switches connected in parallel, the maximum brightness levels **only needs to be set in one device.** The setting is automatically saved to all other switches connected in parallel

In the unlikely event that other LEDsmart+ devices connected in parallel do not enter setup, exit and try again.

Specifications

Nominal Line Voltage Amplitude Range	220-240Vac
Line Voltage Frequency	50Hz Nominal (47 – 53Hz)
Load Brightness Control Range	0% to 100% (typical for LED loads)**
Rated Load	Refer Compatible Loads table (below)
Minimum Load	1W
Maximum cable distance from any LEDsmart+ device to the parallel junction point	50m (for example, two LEDsmart+ devices can be separated by up to 100m provided that the maximum distance from the furthest device to the parallel junction point is no more than 50m).

** Some LED lights do not turn off completely when used with 2-wire devices such as LEDsmart+. This is due to the small amount of current flowing through the device to the load when switched off. The result with some LED light sources can be a small amount of light output when the LEDsmart+ device is switched off. If this occurs, it is recommended that a Diginet 'Load by-pass' device (Item **MMBP**) is wired into the lights / LEDsmart+ device installation.

Compatible Load Types

Load Symbol	Load Types	Max. Load	Notes
	Dimmable LED Lamps	400W	Maximum permitted number of drivers is 400W divided by the driver nameplate power rating. Due to variety of LED lamp designs, the maximum number of LED lamps is also dependent on the power-factor result when connected to the switch
	Electronic Transformers	400W	
	Standard iron-core transformers	250W	Due to variety of transformer designs, max LV lighting load is also dependent on transformer efficiency
	Toroidal iron-core transformers	300W	
	Incandescent	350W	
	Dimmable CFLs	400W	Due to the variety of CFL designs, the maximum number is make/model dependent

Incompatible Load Types

The switch is designed to **switch lighting loads only**. It is not suitable for switching ceiling sweep fans, exhaust fans or other non-lighting devices which require an air-break type switch.

Multi-Gang De-Rating

Number of times per plate	De-rating factor
1	No de-rating
2	0.85
3	0.7
4	0.55
5	0.4
6	0.25

In applications where multiple LEDsmart+ devices are installed in a multi-gang plate, a de-rating factor is applied to the maximum load as follows.

De-rating Example
Two LEDsmart+ devices installed in a wall plate. The maximum LED load which can be connected to each device = 400W x 0.85 = 340W per device.

Warranty

This product is covered by a two-year warranty against manufacturing defects. This warranty is provided in addition to consumer guarantees covered by Australian Consumer Law.

Trademarks

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