CLIPSAL®

by Schneider Electric

c-thru®
The Clear Choice

Universal Dimmer 800W

31E4RUD

Series







Installation Instructions

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1.0 Product Range

31E4RUD	Universal Dimmer, ISRC, 220-240V~, 50Hz, 800W (30 Series)
2031E4RUD	Universal Dimmer, ISRC, 220-240V~, 50Hz, 800W (2000 Series)
C2031E4RUD	Universal Dimmer, ISRC, 220-240V~, 50Hz, 800W (Classic Series)
SC2031E4RUD	Universal Dimmer, ISRC, 220-240V~, 50Hz, 800W (Slimline Series)
SL2031E4RUD	Universal Dimmer, ISRC, 220-240V~, 50Hz, 800W (Eclipse Series)
4061E4RUD	Universal Dimmer, ISRC, 220-240V~, 50Hz, 800W (Saturn Series)
BSL31E4RUD	Universal Dimmer, ISRC, 220-240V~, 50Hz, 800W (Stainless Steel Series)
BBSL31E4RUD	Universal Dimmer, ISRC, 220-240V~, 50Hz, 800W (Brass Metal Plate Series)

* Please note that these products are also available in other configurations and in a wide range of colours. For further information, please contact your nearest Clipsal Sales Representative.

2.0 Description

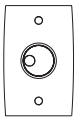
The Clipsal 31E4RUD Series Universal Dimmer is an integrally switched, rotary controlled (ISRC), medium powered universal dimmer rated at 800W. The unit features a remote two-way switching input, allowing the load to be switched from multiple locations.

Designed for universal load compatibility, the unit utilises powerful and sophisticated dimming technology to provide full control of almost any type of load, whether it be incandescent lighting, mains voltage halogen or dichroic lamps, iron-core or electronic low voltage lighting transformers as used in downlight applications. Even small motor loads such as ceiling sweep and exhaust fans can be controlled.

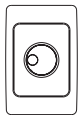
The unit features installer selectable options to enhance load compatibility with energy efficient lighting, including dimmable compact fluorescent loads (DCFL). Highlighted advances in control include a selectable 'Kick-Start' feature to assist with lamp strike for use with DCFL and motor loads, a 'Minimum Brightness Adjustment setting', and a Dimming Mode selector switch, enabling you to override the Automatic mode selection when necessary.

The universal dimmer also incorporates over-current and over-temperature protection devices and is capable of withstanding persistent short circuit conditions. The unit has been built using Clipsal's patented Universal Dimmer Technology, and is one of the most rugged, robust and reliable dimming platforms ever produced.

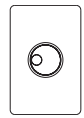
C-Thru®: The Clear Choice – helping you select the right dimmer, first time, every time.



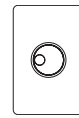
31E4RUD



2031E4RUD



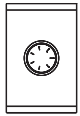
C2031E4RUD



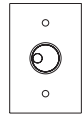
SC2031E4RUD



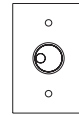
SL2031E4RUD



4061E4RUD



BSL31E4RUD



BBSL31E4RUD

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3.0 Features

31E4RUD features include:

- medium powered dimming platform
- integral push button switch, with rotary dimming control
- two-way / remote switch input
- Clipsal Universal Dimming Technology
- 800W power rating

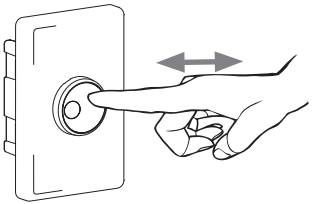
suitable for a wide range of load types:

- incandescent (tungsten filament) lamps
- 240V halogen / dichroic lamps
- low voltage downlights using electronic transformers
- low voltage downlights using iron-core transformers
- small motor loads

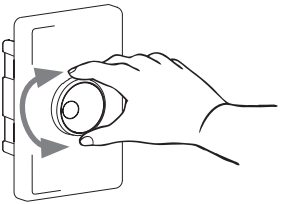
- compatible with selected Dimmable CFL and LED loads*
- user selectable Soft-Start / Kick-Start operation
- user selectable dimming mode (‘Leading Edge’, ‘Trailing Edge’, ‘Automatic’)
- user adjustable minimum brightness setting
- inbuilt fault indicator for easy troubleshooting and problem diagnostics
- wide range of plate styles and colour variants available
- suitable for new installations or retro-fit applications
- inbuilt over-current and over-temperature protection
- short circuit protection
- fitted with suppressors to minimise radio frequency interference
- complies with Australian and International EMC Standards.

* Please visit clipsal.com/load for recommended loads.

4.0 Dimmer Unit Operation



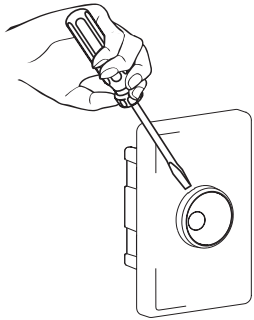
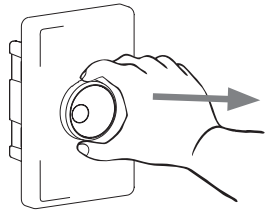
Push-button on/off operation



Rotary dimming control

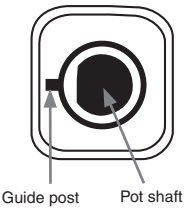
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5.0 Installation Requirements

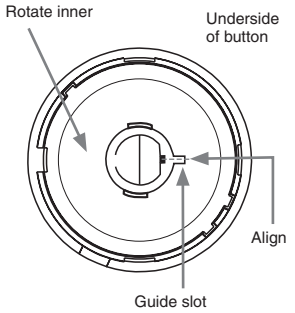
Type	Installation Requirement
31E4RUDM **2031E4RUD** **C2031E4RUD** **SC2031E4RUD** **SL2031E4RUD** **BSL31E4RUD** **BBSL31E4RUD**	The dimmer units incorporate a removable button. Most plate types require the removal / installation of the button in order to remove the plate cover. **1. Button Removal**  a. Use a small, flat bladed screwdriver to pry the outer ring loose.  b. Carefully pull the button and outer ring free from the plate (some force may be required).

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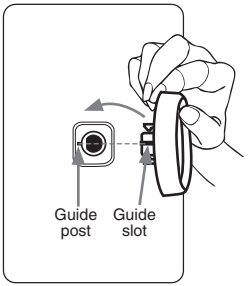
Type	Installation Requirement
	2. Button Installation



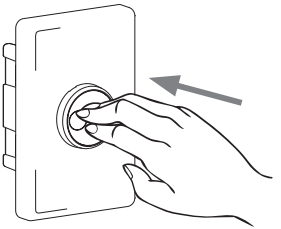
a. Rotate the pot shaft so that the flat side is facing the guide post as shown.



b. Rotate the moving button parts so that the flat side of the button aligns with the guide slot as shown.

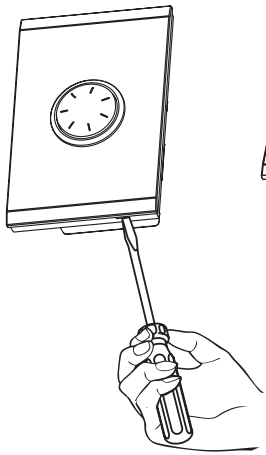
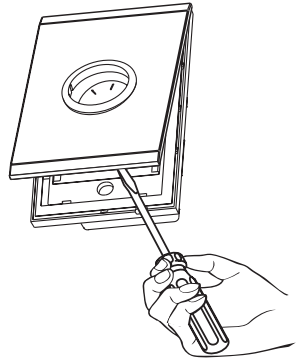


c. Carefully align the button against the plate, so that the guide post and guide slot line up (the flat side of the pot and button should also line up).



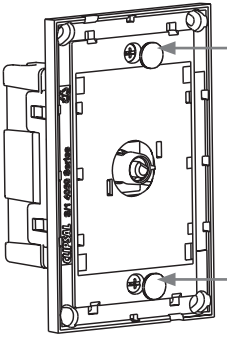
d. Gently push the button onto the shaft. The button should click into place. Rotate the button to ensure it moves freely.

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Type	Installation Requirement
Saturn **60 Series** **4061E4RUD**	**1. Fascia Removal**  a. Locate screwdriver slot on the edge of the product. Insert a flat blade screwdriver into the slot.  b. Using a levering action, remove the front fascia. **2. Button Removal/Installation** The Clipsal Saturn™ Series button is also removable, should the need arise. Normal installation does not require the button to be removed. Should you wish to remove it, the operation is intuitive.

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3. Fitting Screw Caps



WARNING: screw caps shall be fitted when product installed.

a. Mount switch to wall.

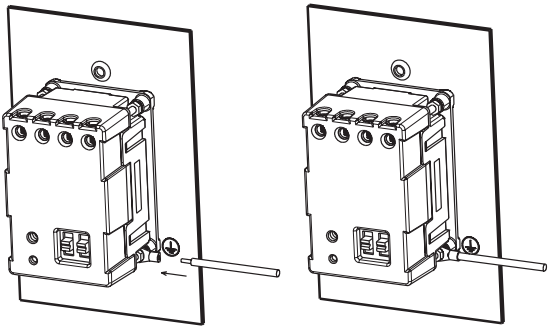
b. Push in screw caps over mounting screws to ensure electrical isolation.

Metal Plate Series

BSL31E4RUD

BBSL31E4RUD

1. Earthing Requirements

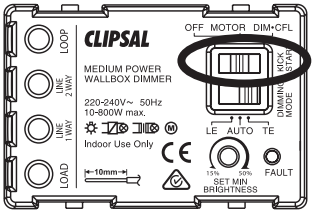
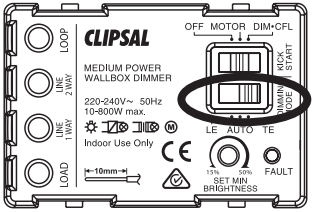


The metal plate series plates MUST be Earthed, using the Earth stud / wire link provided.

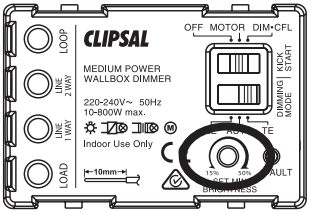
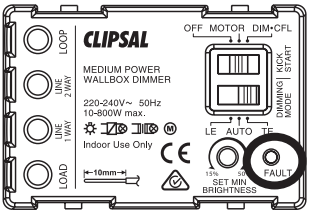
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6.0 Configuration Settings

The universal dimmer allows the user to select various operating characteristics to suit the application, and to ensure compatibility with the connected load type.

Setting	Description
Start-Up Feature 	**Soft-Start / Kick-Start** The user can select a 'Soft-Start' or a 'Kick-Start' to occur at start-up, depending on the connected load type. **OFF: (Soft-Start – Default Setting)** Used for normal light dimming applications, providing a noticeably smooth lamp illumination at turn on. This feature also minimises lamp filament start up stress, which may increase lamp life. **MOTOR:** Used with small motor loads to overcome initial inertia, and bring the motor up to optimal operating speed as quickly as possible. When the dimmer is first turned on, the output will set to around 80% for a brief period (approximately eight seconds), before ramping back down to the set output level. **DIMMABLE CFL:** Used with dimmable CFL loads to maximise the probability of lamp strike at turn-on. When the dimmer is first turned on, the output will set to around 80% for a brief period (approximately two seconds), before ramping back down to the set brightness level.
Dimming Mode Selector  **WARNING:** DO NOT adjust the Dimming Mode Selector while the unit is live. Damage may result. Remove mains power before adjustment is made.	**Dimming Mode** The universal dimmer is capable of dynamically selecting the appropriate dimming mode to suit the connected load type. From time to time 'challenging' loads are connected, which may not be correctly recognised. If abnormal dimming performance is experienced, the user can force selection of a particular dimming mode to suit the load. **AUTO: (Default Setting)** Used for most applications. The dimmer will automatically select the correct dimming mode to control the load. **TE: (Trailing Edge Dimming Mode)** Disables the automatic load detection facility and selects 'Trailing Edge' dimming mode. **LE: (Leading Edge Dimming Mode)** Disables the automatic load detection facility and selects 'Leading Edge' dimming mode.

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Setting	Description
Minimum Brightness Adjustment Feature 	**Minimum Brightness 15 – 50%: (Default 15%)** The user can configure the minimum output brightness to provide optimum performance with the connected load. **Decrease** the minimum brightness to maximise the available dimming range. **Increase** the minimum brightness to minimise flickering effects when connected to dimmable CFL and other sensitive lighting loads. When connecting to motor loads, you can also increase the minimum brightness to ensure that the motor starts reliably, and that it does not stall at low speeds.
Fault Indicator 	**Fault Conditions:** The unit is capable of handling a wide variety of fault conditions. A fault indicator is included to aid installer diagnostics and troubleshooting in case of installation problems. **OFF: Normal Operation** **ON: Abnormal Operation** When the ‘Dimming Mode’ selector switch is set to ‘TE’, the dimmer is working in Trailing Edge mode. If the load type detected is inductive, operation in TE mode is NOT RECOMMENDED. The dimmer output will be automatically turned ‘OFF’ and the red fault LED indicator will turn ‘ON’, indictaing that the dimmer is working in an unsafe dimming mode. The dimmer can be reset by: - Removing mains power from the unit, and replacing the load with a non-inductive type load. OR - Switching the ‘Dimming’ mode selector to ‘LE’ or ‘AUTO’ mode.

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7.0 Overload Protection Facilities

The universal dimmer has a number of sophisticated protection mechanisms to reduce the risk of damage in the case of abnormal operating conditions.

Feature	Description
Thermal Overload Protection Circuitry	The universal dimmer incorporates two levels of thermal overload protection: **Thermal Overload Compensation** Automatically reduces lamp brightness should the dimmer be inadvertently overloaded. Primary defence against overload or short circuit. Resets automatically once overload conditions are corrected. **Thermal Cut-out** The unit contains a non-resettable thermal fuse device, designed to blow in case of catastrophic circuit failure. This is a secondary protection measure, intended to operate as a backup in case of persistent or prolonged overload conditions. If the thermal cut-out fuse blows, then the dimmer will be rendered permanently inoperable and must be replaced. **Any significant overload should be avoided in order to prevent damage to the load, fixed wiring of the installation or other hardware connected to the affected circuit.**
Short Circuit Protection	**Short Circuit Protection** The universal dimmer features short circuit protection capabilities, designed to protect the dimmer under most abnormal operating conditions. This ensures the dimmer can survive in case of wiring fault or catastrophic failure of the load. The short circuit protection mechanism resets automatically once the short circuit condition is removed.

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8.0 Load Compatibility

The Clipsal 31E4RUDM Series Dimmer is a part of the C-Thru® Dimmer Range.

LOAD SYMBOL	COMPATIBLE LOADS	C-THRU 31E4RUDM INTEGRALLY SWITCHED, ROTARY CONTROLLED UNIVERSAL DIMMER "ISRC Series" 800W
	Incandescent Lighting MV Halogen / Dichroic Lamps	800W
	Low Voltage Halogen / Dichroic Lighting with Iron-Core Transformers	800W
	Low Voltage Halogen / Dichroic Lighting with Electronic Transformers	800W
	Dimmable Compact Fluorescent Lamps (Selected makes/models only. Please contact CFL supplier for compatibility advice).	400W
	Dimmable LED Lighting (Please visit clipsal.com/load for recommended loads. For other loads, contact the LED supplier for compatibility advice).	400W
	Small Motor Loads - Exhaust fans (shaded pole induction motors) - Ceiling fans (split-phase induction motors)	800W

IMPORTANT NOTES:

- Dimming performance may vary between lamp manufacturers.
- Use only 'dimmable' CFL/PL/LED lamp types, compatible with phase angle control dimming techniques.
- The maximum load rating varies between different makes and models of dimmable CFL. A nominal max. load of 400W applies, however this may vary depending on the specific lamps selected for the application. Please refer to the latest information available on the Clipsal website (clipsal.com).
- Due to the nature of dimmable CFL loads, lamp strike cannot be guaranteed upon start-up. To maximise the probability of successful lamp strike, the 'Kick-Start' feature may be enabled.
- Some lamps may exhibit unexpected performance characteristics when cold. Dimming performance should improve once the lamp warms up.
- It is recommended that when using electronic transformers, each be loaded to at least 75% of its maximum rated load. This reduces the possibility of lamp flicker when dimming, as is common with some transformers. Refer to the manufacturer's specifications for the transformer being used.
- Use only iron-core transformers compatible with electronic switches / phase controlled dimmers as recommended by the manufacturer.
- Any number of low voltage lighting transformers can be used, providing the total lamp wattage does not exceed the maximum load rating of the dimmer.
- Mixed load types are permitted, though not recommended. Test thoroughly to ensure normal operation throughout the dimming range. Use at own risk.
- When controlling small motor loads, from time-to-time audible noise (hum) may be heard as a characteristic of normal operation. This is largely a function of the motor construction, and is consequently excluded from the warranty conditions provided with this product.
- Operation from elevated voltages or temperatures may cause the thermal protection circuitry to operate. In the case of significant overload, the thermal fuse may be blown, rendering the dimmer inoperable. This may occur if abnormal operating conditions are detected by the dimmer, even in the case where the lamp wattage does not exceed the dimmer rating. Reduce the size of the connected load or use a different brand of lamp to prevent re-occurrence.

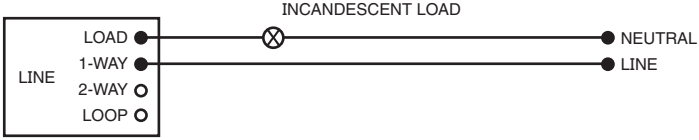
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9.0 Incompatible Loads

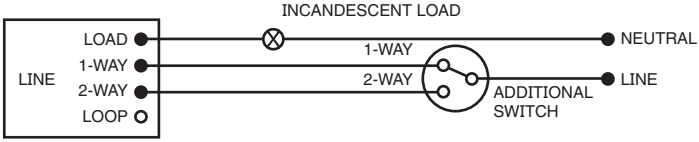
This dimmer is not compatible for use with non-dimmable linear or compact fluorescent lamps. Exercise care when using dimmable CFL/PL/LED load types. Use only lamps/ballasts that are compatible with phase angle control. Refer to the manufacturer's specifications for recommendations. Dimmer warranty is void when controlling incompatible load types.

10.0 Wiring Diagrams

10.1 One-Way Switching



10.2 Two-Way Switching



NOTE:

- The 31E4RUDM Series Dimmers incorporate an integral switch, and are designed for one-way operation only. Two-way switching is possible using the remote two-way input terminal. This allows to load to be turned ON or OFF from multiple locations. The unit is not capable of two-way dimming control.
- Two or more dimmers cannot be connected in parallel or series to control the same load from two different locations.

It is illegal for persons other than an appropriately licensed electrical contractor or other persons authorised by legislation to work on the fixed wiring of any electrical installation. Penalties for conviction are severe!

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11.0 Electrical Specifications

Parameter	Value	
Nominal Operating Voltage	220 – 240V~	
Nominal Operating Frequency	50Hz	
Maximum Load	800W @ 240V~ 800W @ 220V~	
Minimum Load	10W	
Dimming Technique	Universal Dimming Leading Edge/Trailing Edge Phase Control (dynamically auto-selected)	
Compatible Loads		Incandescent Lighting Halogen 240V lamps
		Low Voltage Lighting with Iron-Core Transformers
		Low Voltage Lighting with Electronic Transformers
		Dimmable Compact Fluorescent Lamps (selected makes/models only, 400W max.)
		Dimmable LED Lighting (selected makes/models only, 400W max.)
		Small Motor Loads - Exhaust Fans (shaded pole induction motors) - Ceiling Sweep Fans (split-phase induction motors)
Incompatible Loads		Non-Dimmable Fluorescent/Compact Fluorescent Lighting
Operating Temperature Range	0 to 45°C	
Operating Humidity Range	10 to 90% R.H.	
Mounting Centres	84mm Australian Pattern Plate	
Safety Compliance	AS/NZS3100, IEC60669-2-1	
EMC Compliance	AS/NZS CISPR15, IEC61000-3-2 (except when used in conjunction with dimmable CFL loads)	
Specifications typical @ 240V~ 25°C		
No user serviceable parts inside.		

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12.0 Warranty Statement

1. This Clipsal product is guaranteed against faulty workmanship and materials for a period of two (2) years from the date of installation.
2. This warranty is expressly subject to the Clipsal product being installed, wired, tested, operated and used in accordance with the manufacturer's instructions.
3. The warrantor is Schneider Electric (Australia) Pty Ltd of 33-37 Port Wakefield Road, Gepps Cross, South Australia 5094. With registered offices in all Australian states.
4. Schneider Electric (Australia) Pty Ltd reserves the right, at its discretion, to either repair free of parts and labour charges, replace or offer refund in respect to any article found to be faulty due to materials, parts or workmanship.
5. All costs of a claim shall be met by Schneider Electric (Australia) Pty Ltd, however should the product that is the subject of the claim be found to be in good working order all such costs shall be met by the claimant.
6. When making a claim the consumer shall forward the Clipsal product to the nearest office of Clipsal by Schneider Electric with adequate particulars of the defect within 28 days of the fault occurring. The product should be returned securely packed, complete with details of the date and place of purchase, description of load, and circumstances of malfunction.
7. The benefits conferred herein are in addition to, and in no way shall be deemed to derogate; either expressly or by implication, any or all other rights and remedies in respect to the Clipsal product, which the consumer has under the Commonwealth Competition and Consumer Act or any other similar State or Territory Laws.

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clipsal.com

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