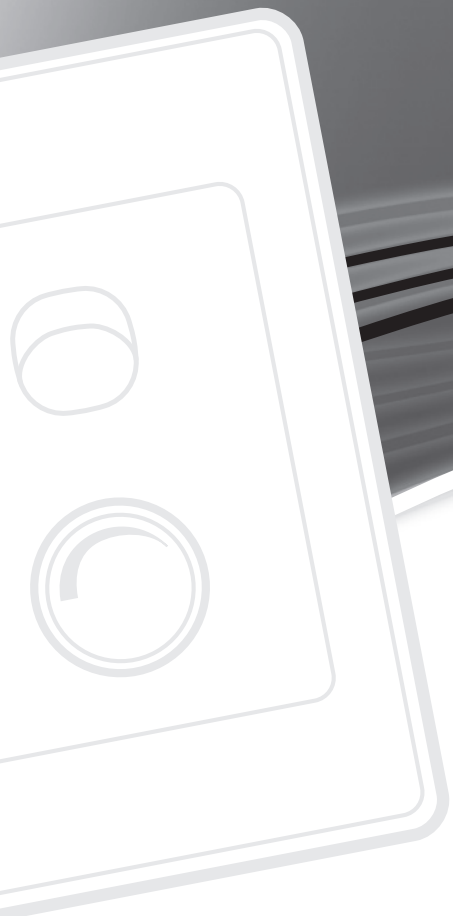
CLIPSAL®

by Schneider Electric



c-thru®
The Clear Choice

Universal Dimmer

E450UD Series

450W | SHORT CIRCUIT PROTECTION | ONE FITS ALL! | CE | RCM

Installation Instructions

REGISTERED DESIGN • REGISTERED PATENT

Table of Contents

⚠WARNING

HAZARD OF ELECTRIC SHOCK OR ARC FLASH

This product must only be installed by a licensed electrical contractor or other persons authorised by legislation to work on the fixed wiring of any electrical installation.

Failure to follow these instructions can result in death, serious injury or equipment damage.

1.0 Product Range

Dimmer, Universal, 220-240V AC, 50Hz, 450W

32E450UDM	30 Series Mechanism
32E450UD	Standard Range
2032E450UD	2000 Series™
C2032E450UD	Classic C2000 Series™
SC2032E450UD	Slimline® Series
P2032E450UDM	Prestige™ Mechanism
P2032E450UD	Prestige™ Series
80E450UDM	80 Series Mechanism
M8082E450UD	Modena 8000 Series
S8082E450UD	Strato 8000 Series
4062E450UDM	Saturn™ Series Mechanism
4062E450UD	Saturn™ Series
4062E450UDN	Saturn™ Series with LED indicator
Z4062E450UDN	Saturn™ ZEN Series with LED indicator

*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 and Schneider Electric Partner Business Representative.

2.0 Description

The Clipsal E450UD Series Universal Dimmer is a separately switched, compact, modular dimming mechanism rated at 450W, and 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, 240V 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 Universal Dimmer also incorporates over-current and over-temperature protection devices and is capable of withstanding persistent short circuit conditions, making it the most rugged, robust and reliable dimmer mechanism ever produced.

c-thru® The Clear Choice – helping you select the right dimmer, first time every time!

3.0 Features

- Separately switched compact modular dimming mechanism.
- 450W power rating.
- Soft-start operation.
- Preset minimum brightness.
- Wall or architrave mounting options.
- Wide range of plate styles and colour variants available.
- Suitable for one-way or two-way operation.
- Suitable for new installations or retro-fit applications.
- Inbuilt over-current and over-temperature protection.
- Short circuit protection.
- Suitable for a wide range of load types.
  - Incandescent lamps (tungsten filament).
  - 240V halogen/dichroic lamps.
  - Low voltage downlights using iron-core or electronic transformers.
  - Dimmable LED lamps.
  - Small motor loads (such as ceiling sweep and exhaust fans).
- Fitted with suppressors to minimise radio frequency interference.
- Complies with Australian and International EMC Standards.

4.0 Load Compatibility

The Clipsal E450UD Series Dimmer is a part of the c-thru® dimmer range and offers true universal load compatibility.

LOAD SYMBOL	COMPATIBLE LOADS	TRANSPARENT C-THRU COLOUR
	Incandescent Lighting MV Halogen/Dichroic Lamps	450W
	Low Voltage Halogen/Dichroic Lighting with Iron-Core Transformers	450W
	Low Voltage Halogen/Dichroic Lighting with Electronic Transformers	450W
	Dimmable Compact Fluorescent Lamps (Selected makes/models only. Please contact CFL supplier for compatibility advice.)	200W
	Dimmable LED Lighting (Please visit clipsal.com/load for recommended loads. For other loads, contact the LED supplier for compatibility advice.)	300W
	Small Motor Loads - Exhaust fans (shaded pole induction motors). - Ceiling fans (split-phase induction motors).	450W

IMPORTANT NOTES

1. Dimming performance may vary between lamp manufacturers.
2. Use only dimmable CFL/PL/LED lamp types, compatible with phase angle control dimming techniques.
3. Due to the nature of dimmable CFL loads, lamp strike cannot be guaranteed upon start-up. To maximise the probability of successful lamp strike, turn on with the knob in an advanced setting.
4. Minimum load: visit clipsal.com/load for recommended minimum load of Clipsal Lamps. For other loads, install a 31LCDA Load Correction Device for loads less then 10W.
5. Some lamps may exhibit unexpected performance characteristics when cold. Dimming performance should improve once the lamp warms up.

6. 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 which is common with some transformers. Refer to the manufacturer's specifications for the transformer being used.
7. Use only iron-core transformers compatible with electronic switches/phase controlled dimmers as recommended by the manufacturer.
8. 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.
9. Mixed load types are permitted, though not recommended. Test thoroughly to ensure normal operation throughout the dimming range. Use at own risk.
10. When controlling small motor loads, occasionally 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.
11. This product is rated for indoor use only. It is not suitable for outdoor use or installation in a roof space.
12. 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 reoccurrence.

5.0 Incompatible Loads

This dimmer is not compatible for use with non-dimmable linear/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 as determined by Clipsal by Schneider Electric Australia. Visit clipsal.com/load for recommended LED loads. Some loads may require a 31LCDA Load Correction Device in order to ensure correct operation.

6.0 Installation Instructions

6.1 Wiring Details

1. Disconnect power to the relevant circuit at the main switchboard.
2. Remove existing switch from wall.
3. Connect the dimmer in accordance with the wiring diagrams shown over the page.
4. Refit switch plate to wall and fit fascia.
5. Reconnect power.
6. Fit dimmer knob to shaft (ensure correctly aligned with shaft).
7. Turn switch on and check dimmer operation by turning control knob through full range.

NOTE
The Universal Dimmer does not incorporate a "kick-start" feature as is standard for other c-thru® Fan Controller models. The control knob must be sufficiently advanced when turned on, in order to achieve reliable motor starting.

6.2 Soft-Start Feature

The Universal Dimmer incorporates a soft-start feature providing a noticeably smooth lamp illumination at turn on. This feature also minimises lamp filament start up stress, which may increase lamp life.

6.3 Minimum Brightness Settings

The minimum brightness level has been factory preset to suit most applications.

NOTICE

ACTIVATION OF THERMAL PROTECTION

De-rate the maximum load of the unit for multi-gang applications as per the table shown below.

- Do not operate the unit at elevated temperatures.
- Decrease the size of the load to prevent re-occurence.

Failure to follow these instructions may result in equipment becoming inoperable

6.4 Multi-Gang Derating

For applications where E450UD Series Dimmers are multi-ganged, derate the maximum load rating of the unit according to the derating table shown on the right.

No. of dimmers	Max. incandescent & LV halogen load per dimmer	Max. LED per dimmer
1	450W	300W
2	350W	250W
3	250W	200W

6.5 Thermal Overload Protection Circuitry

The E450UD Series Dimmers 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.

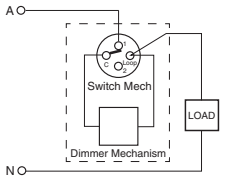
6.6 Short Circuit Protection

The E450UD Series Dimmers feature short circuit protection, designed to ensure the dimmer can survive in case of wiring fault or catastrophic failure of the load.

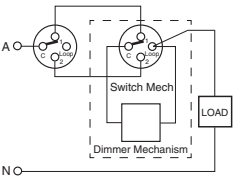
The short circuit protection feature also allows the dimmer to be used in conjunction with lamps oriented in the vertical direction as commonly found in chandeliers (something not previously recommended with any other dimmer available).

7.0 Wiring Diagrams

7.1 One-Way Operation



7.2 Two-Way Operation



NOTE

- If the unit is wired for two-way operation it can be switched ON or OFF from either location but the lamp brightness can only be adjusted from one location.
- Two or more dimmers cannot be connected in parallel or series to control the same load from two different locations.
- Dimmer mechanism wiring is NOT polarity sensitive.

8.0 Electrical Specifications

Parameter	Value	
Nominal Operating Voltage	220 – 240V~	
Nominal Operating Frequency	50Hz	
Maximum Load	450W @ 240V~ 400W @ 220V~ Derate for multi-gang applications (refer to table on page 6)	
Minimum Load	10W	
Dimming Technique	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, 200W max.)
		Dimmable LED Lighting (selected makes/models only, 300W max.)
		Small Motor Loads
Incompatible Loads		Non-Dimmable Fluorescent/Compact Fluorescent Lighting
Mounting Centres	84mm Australian Pattern Plate	
Shipping Weight	25g Dimmer Mechanism Only	
Safety Compliance	AS/NZS3100, AS/NZS3133, IEC60669 Series	
EMC Compliance	AS/NZS CISPR15, IEC60669-2-1 (26.1,26.2), IEC61000-3-2 (except when used in conjunction with electronic loads, e.g. dimmable CFL loads)	
Specifications Typical @ 240V~ 25°C		
Suitable for Indoor Use Only		
No User Serviceable Parts Inside		

9.0 Warranty Statement

1. 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 Trade Practices Act or any other similar State or Territory Laws.
2. The warrantor is Schneider Electric.
3. This Clipsal product is guaranteed against faulty workmanship and materials for a period of two (2) years from the date of installation.
4. Schneider Electric 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. This warranty is expressly subject to the Clipsal product being installed, wired, tested, operated and used in accordance with the manufacturer's instructions.
6. All costs of a claim shall be met by Schneider Electric, 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.
7. When making a claim the consumer shall forward the Clipsal product to the nearest office of 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.

Schneider Electric (Australia) Pty Ltd

clipsal.com

Contact us: clipsal.com/feedback

National Customer Care Enquiries:

Tel 1300 2025 25

Fax 1300 2025 56

New Zealand National Customer Care Enquiries:

Tel 0800 652 999

Fax 0800 100 152

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