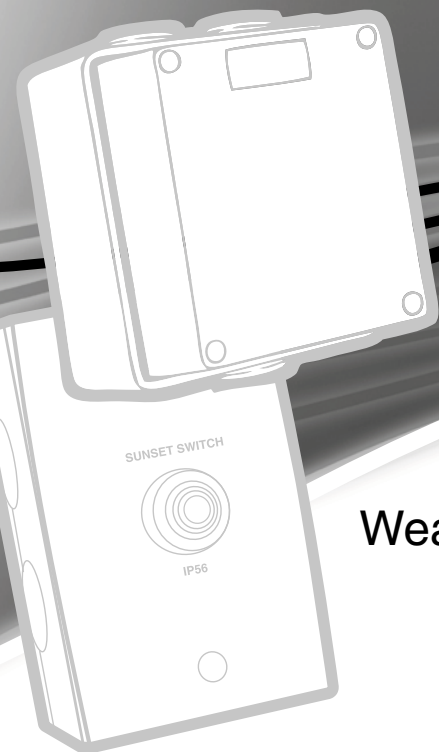


CLIPSAL®

by **Schneider** Electric



Two-Wire Weather Protected Sunset Switch

**31VSSR
56SSR**



2 WIRE DESIGN

Installation Instructions

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1.0 Product Range

31VSSR	Sunset Switch, Two-Wire, 220-240V~, 50Hz, 10AX, IP56 (Standard Range)
56SSR	Sunset Switch, Two-Wire, 220-240V~, 50Hz, 10AX, IP66 (56 Series)

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

2.0 Description

The Clipsal Sunset Switch Series is a range of high quality, two-wire, weather protected photoelectric sensors, with preset timer and timer disable facilities.

The products are designed to automatically activate lighting at sunset, ensuring outside areas are illuminated after dark. Providing safety and security, the Sunset Switch product range is suitable for use in domestic, commercial and industrial installations. Typical applications include garden lighting, verandahs, car parks, street lighting, advertising signs and perimeter lighting for commercial / industrial business premises.

The Sunset Switch does not require a Neutral connection and is consequently known as a "Two-Wire" device. The unit has a powerful 10AX switching capability, and is suitable for a wide range of load types, including incandescent, inductive and fluorescent loads*.

3.0 Features

- State of the art low current consumption Two-Wire design
- Time setting selection from 15 minutes to 15 hours and 45 minutes
- Timing accuracy $\pm 15\%$
- Remote timer disable, using remote wired momentary action switches
- 10AX switch load 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
 - Fluorescent Lighting Loads*
 - Compact Fluorescent Light Loads*
 - LED Lighting Loads*
 - Small Motor Loads (limited to 2A)
- Suitable for new installations or retro-fit applications
- Complies with Australian Standards

* Two-Wire devices may require power factor correction capacitors to be fitted, else otherwise a 31CAP Load Correction Device must be installed to ensure correct operation. Refer to the "Special Loads" section of this instruction manual for more information.

4.0 Operation

A Sunset Switch operates lighting loads automatically after dark, when the ambient light fades below a pre-determined level (factory set to around 20 lux). This usually coincides with Sunset.

Lights turn 'ON' automatically at Dusk and remain on until the pre-set timer period has elapsed or until Dawn (whichever occurs first). No adjustment is required to suit the seasons.

The Sunset Switch automatic timer functions can be disabled, allowing manual operation to suit the needs of the user. The unit supports both Override ON and Override OFF functions. This is useful if the user requires the load to remain ON (ie not automatically switch off at dawn), or to temporarily turn the lights OFF when they are not required (refer Section 7.2 for further information).

5.0 Installation

The Sunset Switch may be positioned on any exterior surface facing away from any direct artificial light. Most light we see is "reflected" light. Accordingly, the Sunset Switch unit should be positioned so that it is NOT exposed to direct sunlight, as this may cause the unit to exceed the maximum operating temperature. Prolonged exposure to an ambient temperature exceeding the specified range may degrade the performance of the product.

The installation must not allow the artificial light to deactivate the Sunset Switch, resulting in the blinking of the controlled lights. Even when operating interior lights it is recommended that the Sunset Switch is still positioned outside. It is also suggested that the unit is positioned out of normal reach to avoid interference with the sensing eye.

If the unit is to be mounted in an exposed position, all entries into the mounting box should be sealed with a silicone sealant.

6.0 Important Warnings

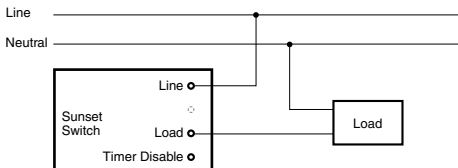
- Two or more Two-Wire Sunset Switches cannot be connected in parallel or series to control the same load from two different locations. If multiple Sunset Switches are required to be connected in parallel, please use the equivalent Three-Wire product (56PEDD3).
- It is illegal for persons other than an appropriately licenced electrical contractor or other persons authorised by legislation to work on the fixed wiring of any electrical installation. Penalties for conviction are severe!

7.0 Wiring Diagrams

7.1 Sunset Switch Operation

The Two-Wire Sunset Switch is wired as shown in the figure below.

Note that when power is applied for the first time, or re-applied after a power failure / lamp failure, the Sunset Switch will require up to 10 seconds of warm-up time. During this period, the load will not be turned on, even if the ambient light level is below the operating point. The load will remain off until the light level rises above the lux switching threshold, and falls again.

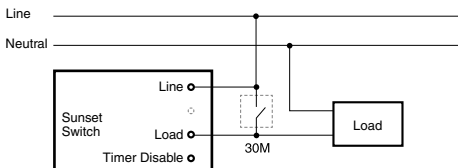


7.2 Timer Override Facility

Automatic switching operations of the Sunset Switch can be overridden by the user as shown below:

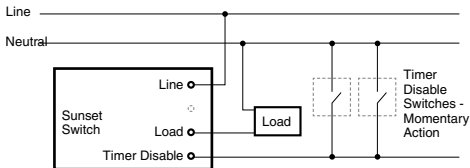
VERRIDE ON

For manual ON operation the unit can be bypassed via a switch between the LINE and LOAD terminals.



VERRIDE OFF

The pre-set timer function can be temporarily disabled by connecting 'TIMER DISABLE' terminal to Neutral via a momentary switch. This operation is a one-time operation, and is useful when lighting is required to remain OFF when it is dark. Normal automatic operation will resume the following day.



WARNING:




- Timer Disable switch wiring must be rated for 240V~
- The sum of cable lengths used to connect Timer Disable switches must not exceed 100m.
- Timer Disable switches MUST be Normally Open momentary operation type switches.

8.0 Special Loads

8.1 Product Selection

Be sure to select the appropriate product to suit your application:

- The 31VSSR and 56SSR Sunset Switches are Two-Wire devices. The product does not require a neutral connection, but can only switch a limited range of load types without special consideration.
- The 56PEDD3 Sunset Switch is a Three-Wire device. The product requires a neutral connection to operate, and capable of switching a wide range of load types.

	Catalogue Number	Neutral Required	Maximum Load*	31CAP Required for some Load Types
	31VSSR	NO	10AX	YES
	56SSR	NO	10AX	YES
	31VSSR3	YES	10AX	NO

* Please refer to Technical Specifications for further information about compatible load types.

8.2 Handling Special Loads

SMALL LOADS (<5W)

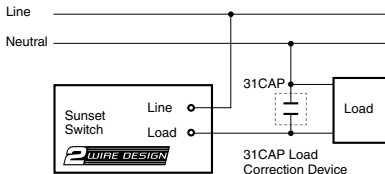
Two-Wire Sunset Switch products can only drive loads greater than 5W. If you wish to drive a smaller load, the 31CAP Load Correction Device is required to be fitted in parallel with the load. For example: when driving a single contactor, be sure to use the 31CAP.

LOADS WHICH ARE SENSITIVE TO LEAKAGE CURRENTS

Two-Wire devices draw their power through the load. If a Two Wire device is used in conjunction with a load which cannot provide enough continuous load current in the off-state, or the load is sensitive to a high off-state leakage current (for example: relays, contactors, various loads with built-in electronic control etc.) a 31CAP Load Correction Device must be connected in parallel with the load.

SMALL (NON-POWER FACTOR CORRECTED) FLUORESCENT LOADS

When a 31CAP is fitted, some small non-power factor corrected fluorescent loads may be controlled using a Two-Wire Sunset Switch. Success varies from manufacturer to manufacturer. Recommend testing before installation. Installation must be compliant with local wiring rules.



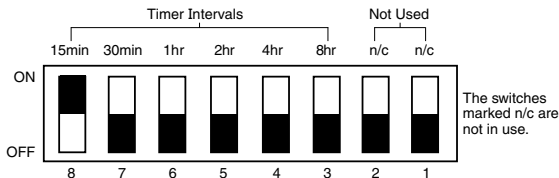
Please note the 56PEDD3 is a Three-Wire device, and switches the load using an internal relay. Power is not drawn through the load and so the 31CAP is not required.

9.0 Timer Settings

WARNING: For safety reasons the setup should be performed with the Sunset Switch isolated from the main supply.

9.1 Timer Adjustment Settings

The timer setting is achieved by the use of an 8 way micro switch. The switch is accessible from the back of the unit through a window in the enclosure. The functions of the individual switches are presented on the following figure:



In order to add the appropriate time interval to the total time-out period, the appropriate switch must be turned 'ON'. The total time-out period will be equal to the sum of all of the individual Timer Intervals assigned to the switches in the 'ON' position.

Note that only six of the switching elements are used. Switches marked "n/c" are not in use. Setting them to the ON or OFF position will have no effect.

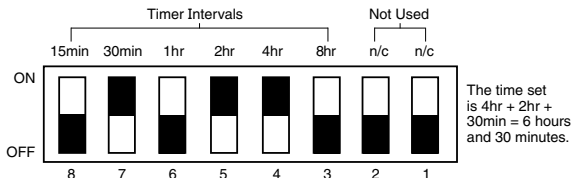
DO NOT set all Timer Interval switches to the 'OFF' position, even if the timer function is to be disabled using the Timer Disable facility. This setting is reserved for testing purposes during the manufacturing process only.

9.2 Example Settings








- Required Time Delay is 6 hours and 30 minutes (6.5 hours).

Initially set all the switches to OFF position.

The highest time value for an individual switch lower than 6.5 is 4 hours. Set the '4hr' switch to ON. Remaining time required is $6.5 - 4 = 2.5$ hours. The next highest value lower than 2.5 is 2 hours. Set the '2hr' switch ON. The remaining time required is $6.5 - 4 - 2 = 0.5$ hours. Set the '30min' switch ON.



10.0 Electrical Specifications

Parameter	Value
Nominal Operating Voltage	220 - 240V~
Nominal Operating Frequency	50Hz
Maximum Load Current	10AX
Minimum Load Current	20mA
Maximum Off-State Leakage Current	3mA
Compatible Loads* * Certain loads may require special handling (Power Factor Correction Capacitor or 31CAP to be fitted). Refer "Special Loads" section.	 Compact Fluorescent Lamps
	 LED Lighting
	 Incandescent lamps Halogen 240V lamps
	 Low voltage lighting with electronic transformers
	 Low voltage lighting with iron-core transformers
	 Fluorescent Lighting
	 Small Motor Loads (Maximum 2A)
Lux Switching Threshold	Approximately 20 lux
Timer Range	15 minutes – 15 hours and 45 minutes
Timer Accuracy	± 15%
Warm-Up Time	10 seconds maximum
Power-Up Status	OFF
International Protection Rating	IP56 31VSSR IP66 56SSR
Operating Temperature Range	0 to 40°C
Operating Humidity Range	10 to 90% R.H.
Safety Compliances	AS/NZS3100, AS/NZS3133
EMC Emission Compliance	AS/NZS CISPR15
Specifications Typical @ 240V~, 25°C	
No User Serviceable Parts Inside	

WARNING:

- Operation outside of these specifications may result in unexpected behaviour, or even product failure.
- Timer accuracy may be affected by voltage, temperature and humidity.
- Warranty may be voided when controlling any incompatible load types as determined by Clipsal Australia.

12.0 Warranty

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 Clipsal Australia Pty Ltd of 33-37 Port Wakefield Road, Gepps Cross, South Australia 5094. With registered offices in all Australian states.
3. This Clipsal product is guaranteed against faulty workmanship and materials for a period of two (2) years from the date of installation.
4. Clipsal 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. 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 Clipsal 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.
7. When making a claim the consumer shall forward the Clipsal product to the nearest office of Clipsal Australia Pty Ltd 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.

11.0 Notes

11.0 Notes

Clipsal Australia Pty Ltd

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Contact us: clipsal.com/feedback

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