Installation and Operating Instructions CellOptik-EcoAT

GENERAL INFORMATION

This is a “dusk to dawn sensor switch” that has been designed to synchronise with the earth’s natural solar rhythm to obtain moderately accurate timing. This enables it to switch off during the night to save energy. A typical example is to switch on flood lights in an office car park at dusk and to turn them off at 10pm as the office closes at 9pm.These units are fully automatic and need no programming by the installer or end user.

Installation

Please read and fully understand these instructions before installing this sensor to obtain the best results.
All electrical work should be carried out by a qualified electrician or a supervised competent person.

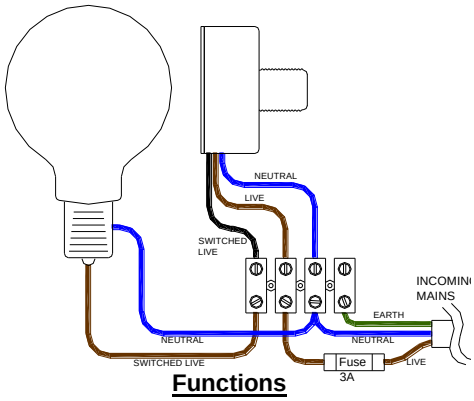
Position

In order to obtain the most accurate results it is important to position the sensor where the only influences are day light levels. Pointing the sensor at the ground or in a position where a tree may shelter the light at certain times of the year will effect the switching times. The best position is to face the sensor at the sky but not aimed towards the sun and it must not be influenced by the light it is controlling as this will effectively lengthen the daylight hours. The rear of this sensor must be protected from water ingress. A suitable enclosure must be used and can be obtained from Acetek.

Electrical

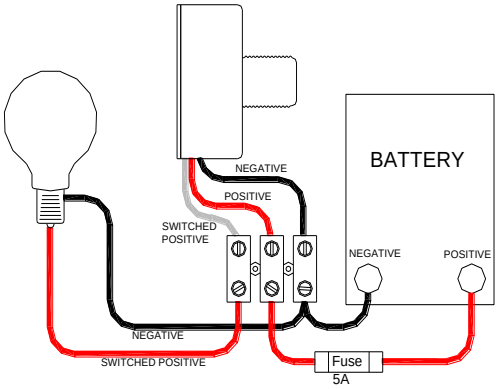
Before carrying out the electrical installation ensure the power has been disconnected and cannot be switch back on by accident. Follow the relevant wiring diagram below using the correct fuse for protection. This sensor does not require an earth connection although if the light being controlled requires one a separate earth must be run.

Mains Standard Version

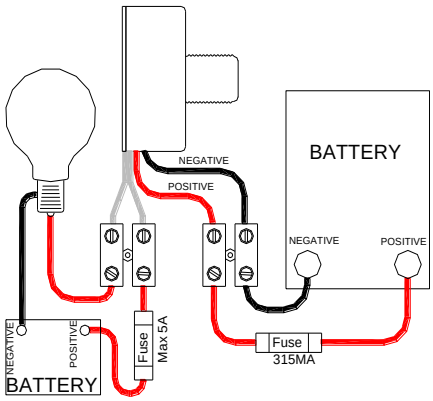


Functions

DC Versions 6v, 12v and 24volt



DC version Volt-Free contacts.



Automatic UK summer/winter mode.

The sensor has a built in UK summer/winter time shift which will automatically change during the year. This function is specifically programmed to switch to summer mode after summer time begins and switches to winter mode before winter time begins to ensure the target time is either met or exceeded. The sensor can be forced into either summer or winter mode by simply exposing or covering the sensor during switch on. (See Setting section) Once the sensor has calculated or has been set in either summer/winter mode it will remain in that mode for the next 10 days after which time it will recalculate for the next 10 days.

Time adjustment

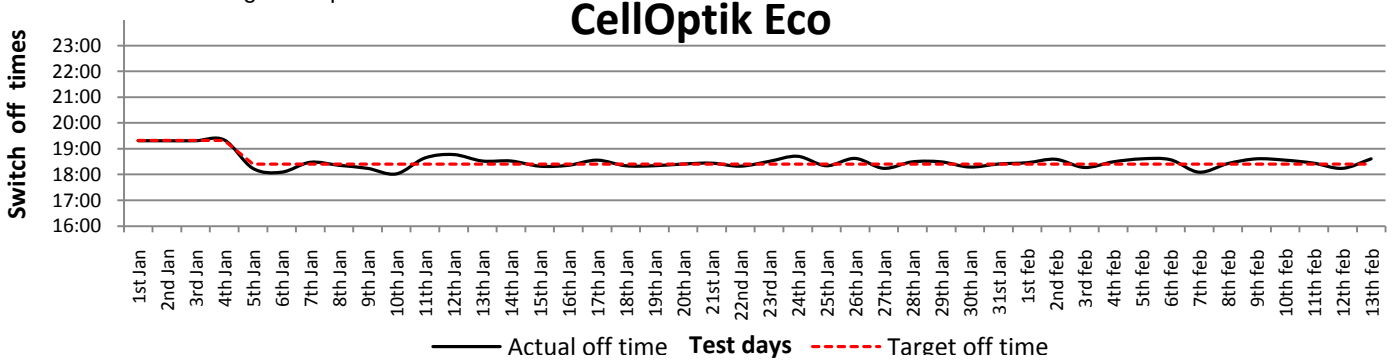
The sensor has a user adjustment pin to vary the switch off target time. To change the target time remove the power and adjust, when the power returns the selected positioned is placed in the memory of the sensor. Adjusting this pin when the power is on will have no effect.

Reaction time & sensing

The sensor can take up to 5 minutes to change status and has a lower on light level than the off light level to reduce the possibility of cycling on and off.

Accuracy

The accuracy of this sensor relies on similar daylight hours and light levels. It will benefit from ideal positioning. Unfortunately we can not control the UK weather and this is responsible for all of the inaccuracies however the chart below demonstrates how accurate the sensor can be. Target 6:30pm.



Setting

Setting/forcing summer mode
To start the sensor in UK summer time mode it is necessary to allow the sensor to see daylight. Remove the power to the sensor for at least 15 seconds, if you are setting the sensor at night it will be necessary to shine a light on the sensor as you reapply the power. It is now set in UK summer time mode.

Setting/forcing winter mode
To start the sensor in UK winter time mode it is necessary to cover the sensor.
Remove the power to the sensor for at least 15 seconds and cover the sensor as the power is being reapplied. When the light you are controlling switches on you must remove the cover. It is now set in UK winter time mode.

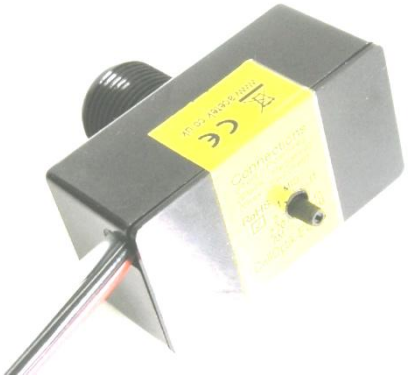
Please note:
Forcing either UK summer or winter time mode will only last for 10 days when it will return to automatic UK summer/winter sensing (removing the power for 15 seconds will fully reset the sensor).

Switching on
When the power is applied to the sensor for the first time or reapplied after being off for 15 seconds it will switch on the controlled lamp for 5 minutes irrespective of whether it is light or dark. After this time it will either stay on or switch off depending on light levels. The sensor has been pre-programmed with a first night scenario while it establishes the correct time and therefore is unlikely to switch off at the correct target time on the first night and maybe on all night.

Specifications:

Product code	CellOptik-EcoAT	CellOptik-EcoAT24	CellOptik-EcoAT12	CellOptik-EcoAT6
Nominal Voltage	240Vac	24V dc	12V dc	6V dc
Voltage Range	200-250 Vac	28-20V dc	15-11V dc	7-5V dc
Product Class	Class II (no earth required)	Safety Extra Low Voltage	Safety Extra Low Voltage	Safety Extra Low Voltage
Maximum load	500 Watt (2 amps)	120 Watt (5 amps)	60 Watt (5 amps)	30 Watt (5 amps)
Relay contact material	Silver-Tin-Oxide	Silver-Tin-Oxide	Silver-Tin-Oxide	Silver-Tin-Oxide
Temperature Range	-18 to + 60C (0 to 140F)	-18 to + 60C (0 to 140F)	-18 to + 60C (0 to 140F)	-18 to + 60C (0 to 140F)
Cable Material	PVC	PVC	PVC	PVC
Enclosure Material	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate
Colour	Black with frosted clear lens	Black with frosted clear lens	Black with frosted clear lens	Black with frosted clear lens
Flammability Rating	94V2	94V2	94V2	94V2
Ingress Rating	IP65 when installed	IP65 when installed	IP65 when installed	IP65 when installed
Clamping Thread mm	M20	M20	M20	M20
Clamping Range mm	0.5 to 13mm	0.5 to 13mm	0.5 to 13mm	0.5 to 13mm
Enclosure dimensions mm	W31xL58xD48	W31xL58xD48	W31xL58xD48	W31xL58xD48
Protect with fuse	3amp	5amp	5amp	5amp

CellOptik-EcoAT



Energy Saving Dusk to Dawn Photocell Switch

Installation check list.

1. The voltage is suitable for the supplied unit.
2. The wiring is correct to the diagram overleaf.
3. The maximum load has not been exceeded.
4. The correct fuse has been fitted.
5. The optimum position has been chosen.
6. The water seal has been used.
7. The correct dim level has been set. (dim version)
8. The winter / summer time, has been set.

Drill a 20mm hole in the mounting enclosure. Ensure that all burs and chips have been removed and that the mounting surface is smooth. Thread the first nut onto the sensor with the flange facing out. Place the water seal gasket on the thread with the flange nut and offer the unit through the mounting hole. Fit the second flange nut and secure to complete the water seal. Connect using the correct wiring diagram overleaf.