

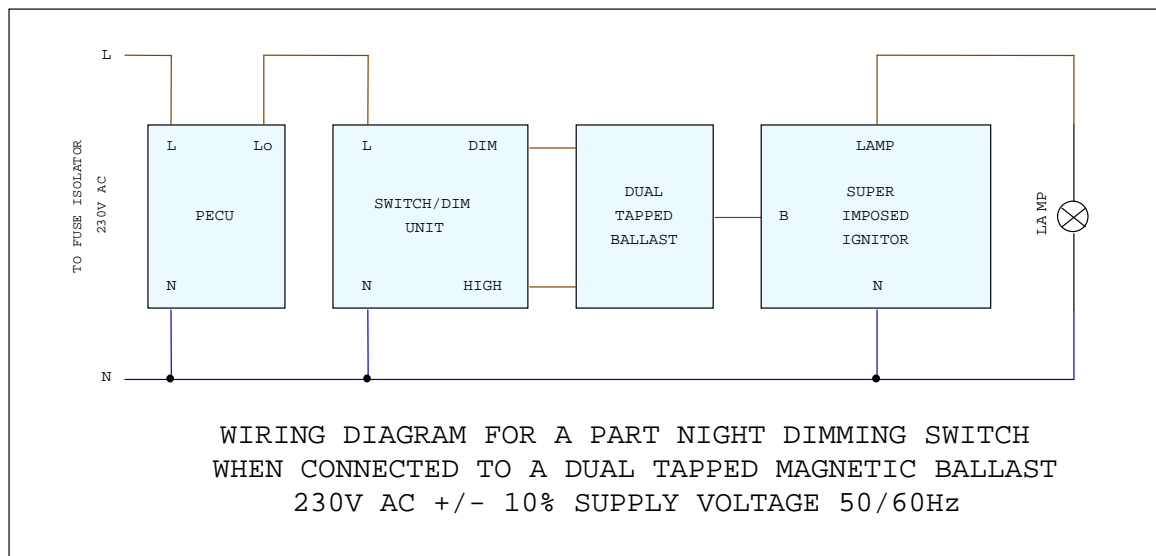
## CELSave™

### Charles Endirect Alternative Lighting Level Switch for use with: Dual Tapped Magnetic Ballasts



The Charles Endirect Dimming Switch is an UMSUG coded, permanently wired unit that effectively dims dual tapped magnetic ballasts for HID (SON, SON-T and Metal Halide) Lamps. This can be as new or retrospectively fitted into most lanterns.

The Dimming Switch is wired between the switched load output of any standard photocell or time switch and a dual tapped magnetic ballast, as detailed in the following diagram:



The unit effectively switches power between the upper and lower tapings of the dual tapped ballast at the programmed times (i.e. 100w down to 70w), thus dimming the lamp.

In operation, the Dimming Switch will sense the photocell switching at dusk and dawn. It will remember the length of night over sequential dusk/dawn switchings and use this data to perform a part night dimming routine (for example; Dusk on, 22.00hrs dim, 05.30 on & Dawn off).

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### Charles Endirect Alternative Lighting Level Switch for use with: **HID LAMPS OPERATED BY DIMMABLE ELECTRONIC CONTROL GEAR**

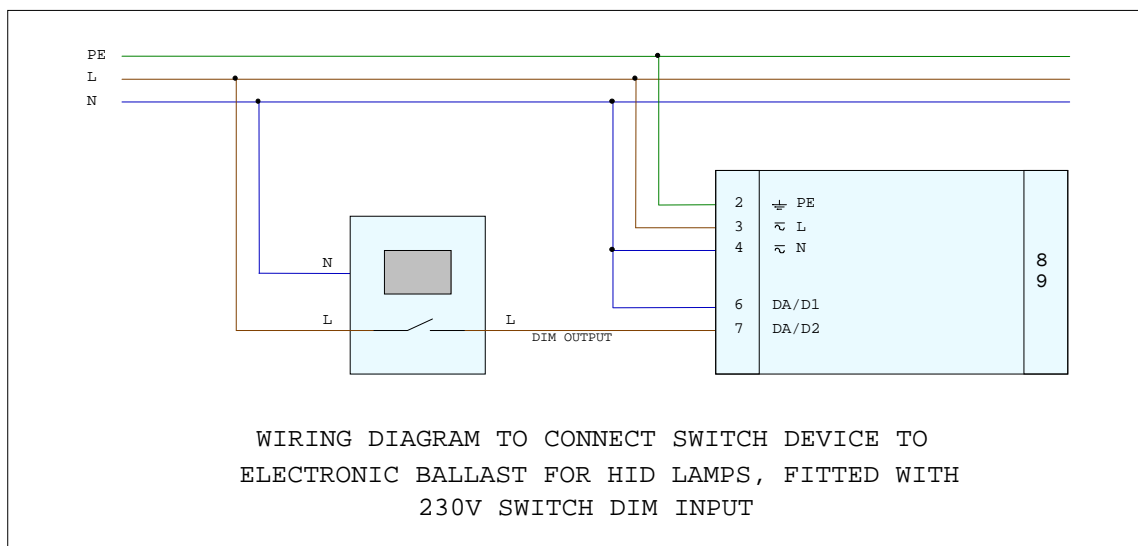


The Charles Endirect Dimming Switch is permanently wired unit that effectively dims HID type lamps when connected to dimmable electronic control gear". This can be as new or retrospectively fitted into most lanterns.

The Dimming Switch is wired between the switched load output of any standard photocell or time switch and a "HID dimmable electronic control gear unit" as detailed in the following diagram:

Many variations on this type of dimming ballast exist and the following options are available:

- 0V TO 10V DIGITAL OUTPUT
- 230V TOUCH DIM OUTPUT (As detailed in dia below)
- Variable resistive switching (Volt free switching)



In operation, the Dimming Switch will sense the photocell switching at dusk and dawn. It will remember the length of night over sequential dusk/dawn switchings and use this data to perform a part night dimming routine (for example; Dusk on, 22.00hrs dim, 05.30 on & Dawn off).

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## Charles Endirect Alternative Lighting Level Switch for use with: FLUORESCENT LAMPS

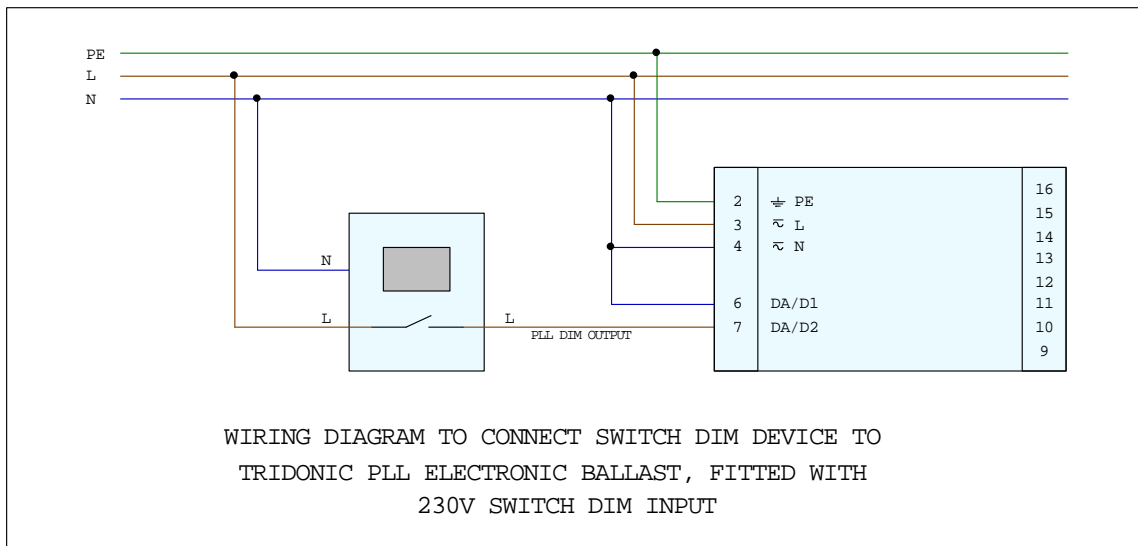


The Charles Endirect Dimming Switch is permanently wired unit that effectively dims ANY “fluorescent lamp when connected to dimmable electronic control gear”. This can be as new or retrospectively fitted into most lanterns.

The Dimming Switch is wired between the switched load output of any standard photocell or time switch and a “fluorescent dimmable electronic control gear unit” as detailed in the following diagram:

Many variations on this type of dimming ballast exist and the following options are available:

- 0V TO 10V DIGITAL OUTPUT
- 230V TOUCH DIM OUTPUT (As detailed in dia below)
- Variable resistive switching (Volt free switching)



In operation, the Dimming Switch will sense the photocell switching at dusk and dawn. It will remember the length of night over sequential dusk/dawn switchings and use this data to perform a part night dimming routine (for example; Dusk on, 22.00hrs dim, 05.30 on & Dawn off).

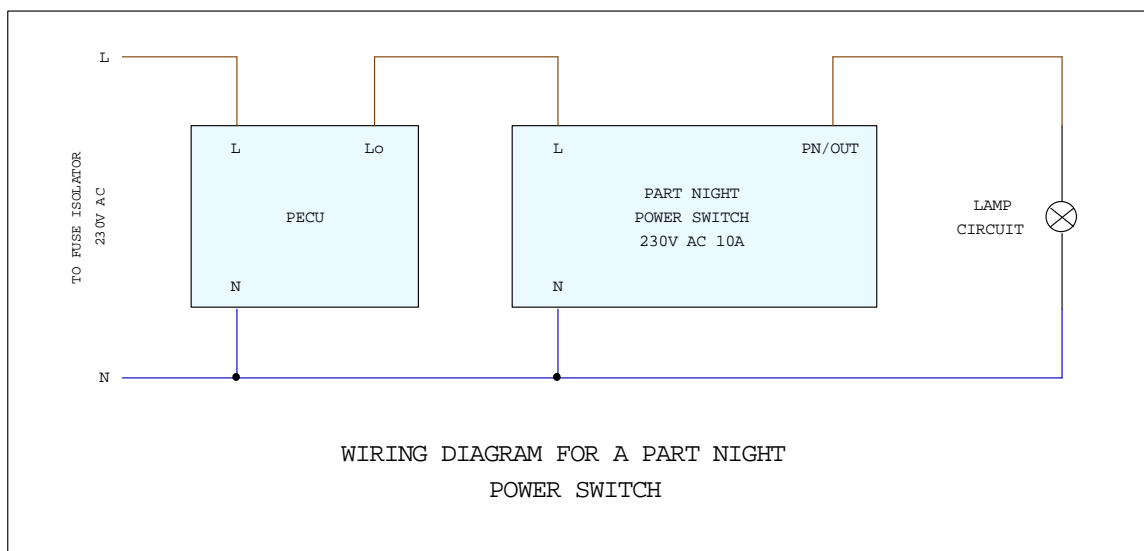
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## Charles Endirect PECU Part Night Conversion Switch

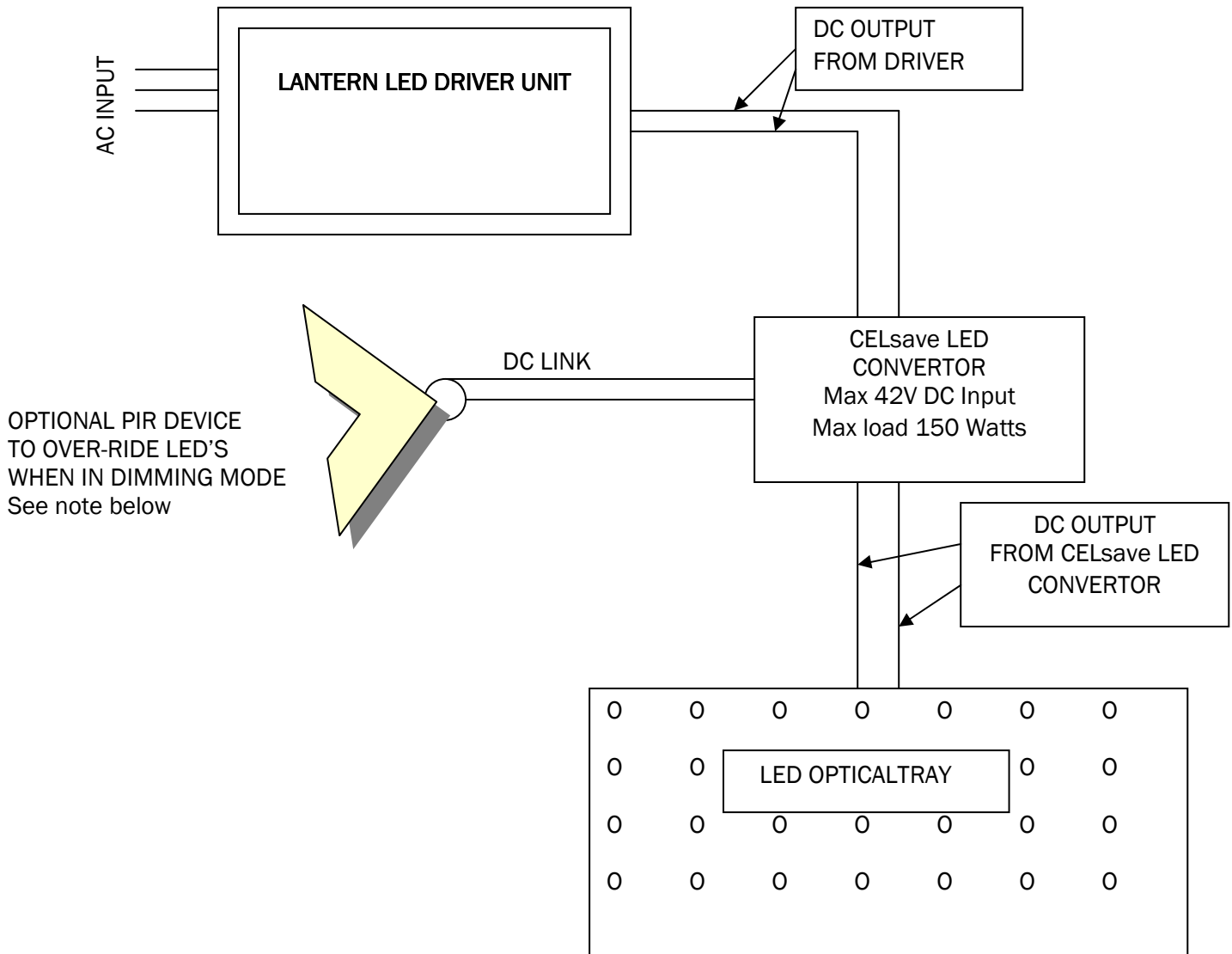


The Charles Endirect PECU Part Night Conversion Switch is an UMSUG coded, permanently wired unit that effectively converts an existing 2 part photocell into part night operation. This unit can be easily retrospectively fitted into most lanterns or within the base compartment of a column.

This unit could also be used to provide Group Switching where a circuit is supplied from a Feeder Pillar by operating the contactor coil.



In operation, this conversion switch will sense the photocell switching at dusk and dawn. It will remember the length of night over sequential dusk/dawn switchings and use this data to perform a part night dimming routine (for example; Dusk on, 22.00hrs dim, 05.30 on & Dawn off).



**NOTES;**

THE CELsave LED CONVERTOR IS FITTED WITH A VARIABLE POTENTIOMETER, ALLOWING FOR MANUAL ADJUSTMENT OF THE LIGHT OUTPUT OF THE L.E.D.'s IN THE DIMMING STAGE. THIS WAY THE EXACT DIMMING LEVEL CAN BE ADJUSTED ON SITE, IF REQUIRED, OR PRE-SET AT THE FACTORY.

A PART NIGHT DIMMING REGIME CAN BE PROGRAMMED AT THE FACTORY i.e. DIM LED's BETWEEN 00:00HRS TO 05:30HRS TO PRE-SET LEVEL.

THIS UNIT HAS A OPTIONAL PIR DEVICE OVER-RIDE WHICH, IN DIMMING MODE, CAN RAISE THE LIGHTING LEVEL SHOULD THE PIR DETECT MOVEMENT.

**Technical Specification for the Charles Endirect CELsave™ units.**

|  |  |
|--|--|
| <b>Switch Type</b>                     | Electromechanical Relay with Zero Crossing switching<br>LED via (PWM) Pulse Width Modulation |
| <b>Voltage</b>                         | 230V +/-10%  |
| <b>Load Handling</b>                   | 2 x 400W HID Lamps Max 60uF<br>Fluorescent 10 Amps Max or 60uF<br>LED max 150W               |
| <b>Load Current Capacity</b>           | 1,000W Tungsten<br>1,800VA Inductive   |
| <b>Dimming Times</b>                   | Default setting : Midnight to 05:30 GMT or<br>to Customers specification, quantity dependant |
| <b>Circuit Power Consumption</b>       | Less than 0.20W Switched On. No Power<br>Consumption when Off.                               |
| <b>Operating Temperature</b>           | -20°C to +80°C   |
| <b>Power Loss During Load Handling</b> | Negligable   |
| <b>Enclosure Material</b>              | ABS  |
| <b>IP Rating</b>                       | IP65   |
| <b>EMC</b>                             | To EN50082-1 & EN55014   |
| <b>Dimensions</b>                      | L 86mm x W 48mm x H26mm<br>LED version L 96mm x W 54mm x H 28mm                              |

**Notes:**

1. The Dimming Switch will not interfere with lamp testing routines as it will ignore switching cycles of less than 30 minutes.
2. The Dimming Switch will always default to the highest switched level of the ballast.
3. The Dimming Switch consumes no power when the photocell is switched Off and less than 0.20W when the lamp is switched On.
4. **IMPORTANT:** Do not carry out insulation tests to the Part Night Switch as this will damage the unit.