# phocos Cis-CU Remote Control Unit User Manual



**Remote Control Unit**
**User Manual**

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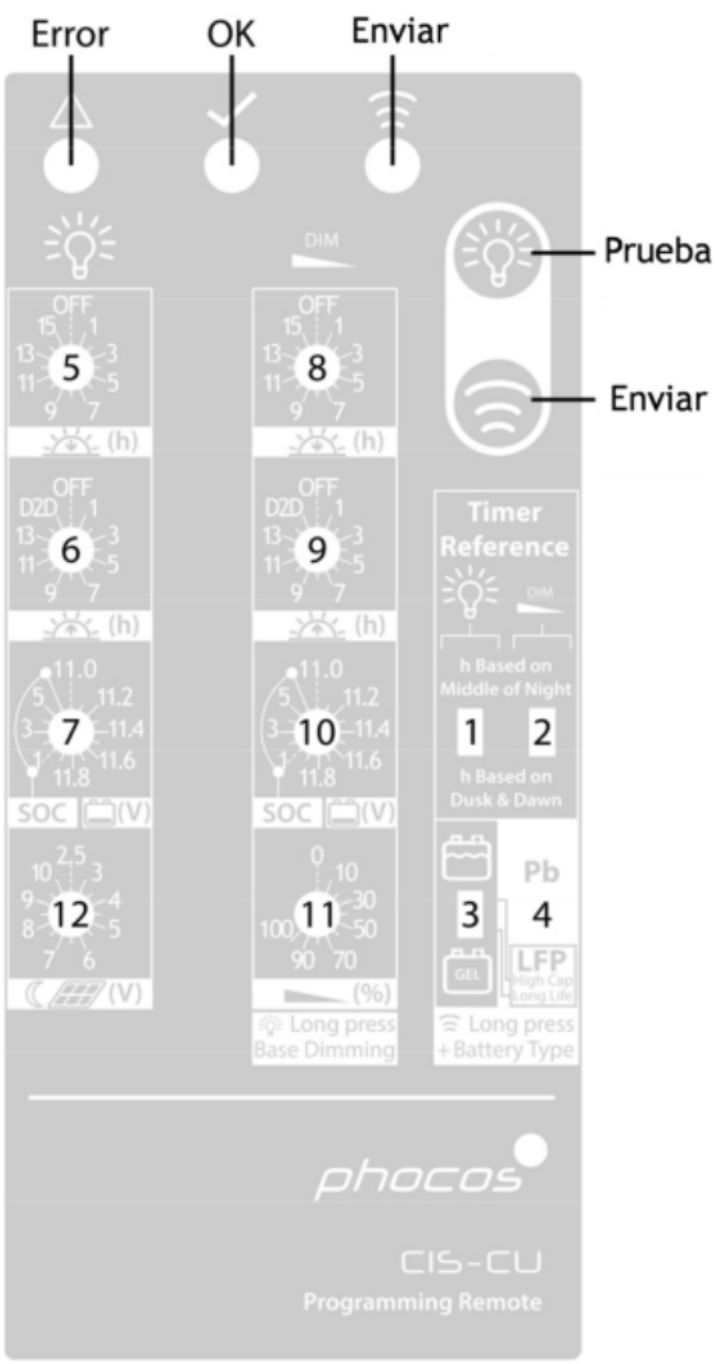
## Cis-CU Remote Control Unit

**Dear Client,**
Thank you very much for buying a Phocos product. With your new CIS-CU remote control, you own a state-of-the-art device that was developed according to the latest technical standards available. This manual gives important recommendations for installing, using and programming etc. In your own interest, please read it carefully.
**General Product Description**

- Configures CIS charge controllers via infrared data link
- Simple and clear configuration interface
- User interface: LEDs, rotary switches, toggle switches, buttons
- Power supply: 2 X AA battery

**REMARK:** For further information regarding the configuration of this-CU remote control please download for free the CISCOMsoftware from our website **www.phocos.com/software-downloads**.The CISCO software is helpful for simulation and programming of the timer settings of the CIS charge controller series.
**How to use CIS-CU**
Configuring your CIS using the CIS-CU is very easy. Set all switches to desired settings —> Press the “Send” button —> Wait for response.




**Buzzer Response**

| | |
|---|---|
| After transmitting | Programming error |
| After transmitting | Programmingsuccessful |
| While pressing Test or Send button | Begin transmission |
| After pressing button | CIS-CU battery empty |
| After long-pressing Test or Send button | Long press recognized, continued transmissi on |

**LED Response**

| | |
|---|---|
| “Error” after “Transmit” | Programming error |
| “Error” while “Transmit” | Low battery |
| “Error” | Battery empty |
| “OK” after “Transmit” | Programming successful |
| “Transmit” | Transmitting |

**Push Buttons**

| | |
|---|---|
| Test | Load(s) on for >1 minute [1] |
| Send | Transmit all settings [2] |
| Test pressed 4s | Load(s) on for >1 minute and transmission of base dimmin g [2] |
| Send pressed 4s | Transmit all settings except the base dimming level [2] |

1. If pressing the button causes a load disconnect event (LVD/SOC, over current) the load will be switched off.
2. Be sure to program only one CIS at a time.

**Battery Setting**

There are four setting options for configuring the battery type. If the “Send” button on the remote control is pressed briefly, a distinction is made between lead-acid battery type GEL / AGM and flooded. If lithium was previously set as the battery type, this has no effect. To set the battery type to lithium, or to switch from lithium to battery types lead-acid GEL / AGM or flooded, the “Send” button must be held down for 4 seconds.
**“Send” button pressed briefly:**

| | | |
|---|---|---|
| Toggle switch 3 | Up | Equalization charge activated for flooded lead-acid batteries |
| | Down | Equalization charge deactivated for GEL / AGM lead-acid batte ries |
| Toggle switch 4 | Up | N/A |
| | Down | |

**“Send” button pressed for 4s:**

| | |
|---|---|
| Toggle switch 3 up & 4 up | Battery-type liquid (equalization activated) electrolyte |
| Toggle switch down & 4 up 3 | Battery type GEL / AGM (equalization deactivated) |
| Toggle switch 3 up & 4 down | Battery-type lithium optimized for max. capacity [1] |
| Toggle switch down & 4 down 3 | Battery-type lithium optimized for max. life expectancy [2] |

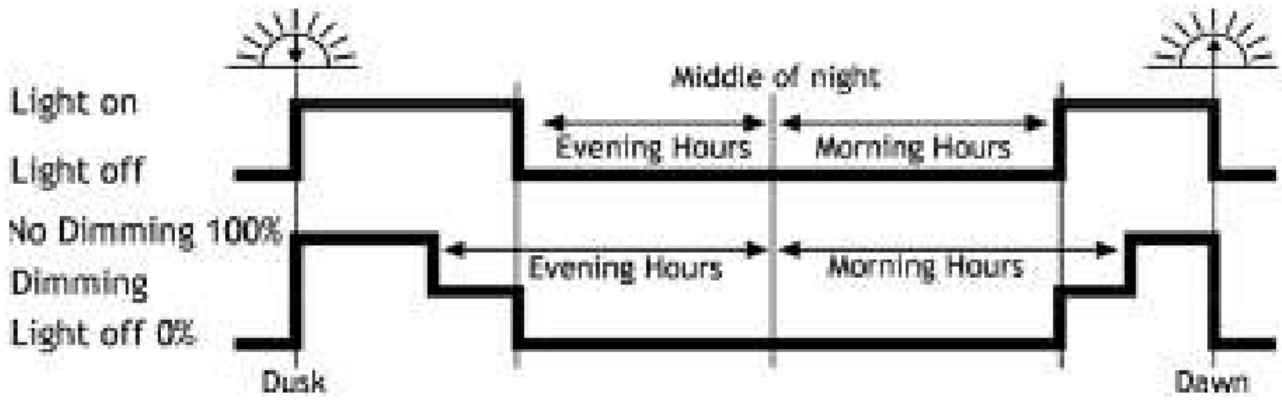
1. End of charge voltage (boost): 14.4 V, float voltage: 14.0 V
2. End of charge voltage (boost): 14.0 V, float voltage: 13.8 V

**Load Control Function (Single Load Controller)**

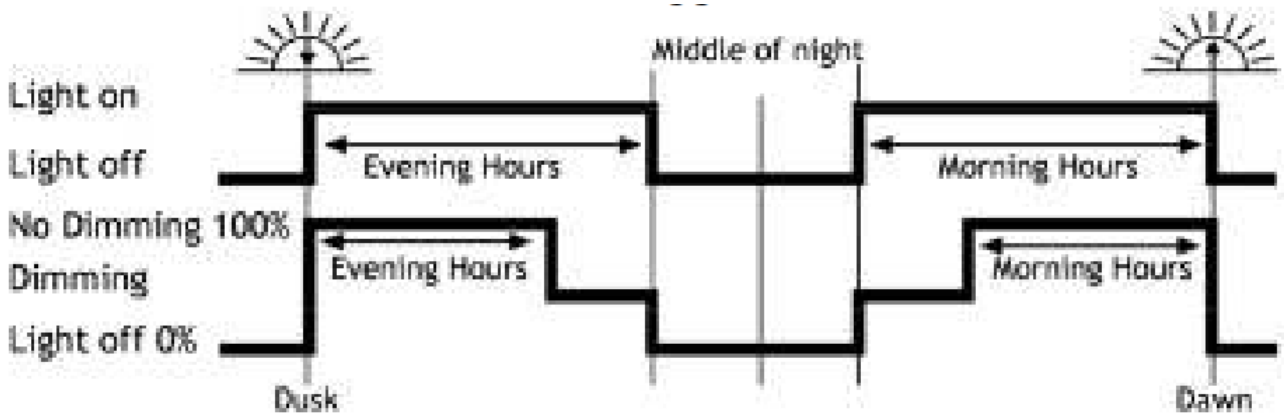
| | **Load** | **Dimming** | |
|---|---|---|---|
| Timer Reference | 1 | 2 | Hours based on the middle of night or dusk and dawn |
| Evening (h) | 5 | 8 | 1-15 hours |
| Morning (h) | 6 | 9 | 1-14 hours and D2D (Dusk to Dawn) mode |
| SOC LVD (V) | 7 | 10 | State of charge (SOC) and voltage controlle d (LVD) |
| Dimming (%) | N/A | 11 | Dimming values (0- 100%, step 10%) |

**• Evening/Morning modes**

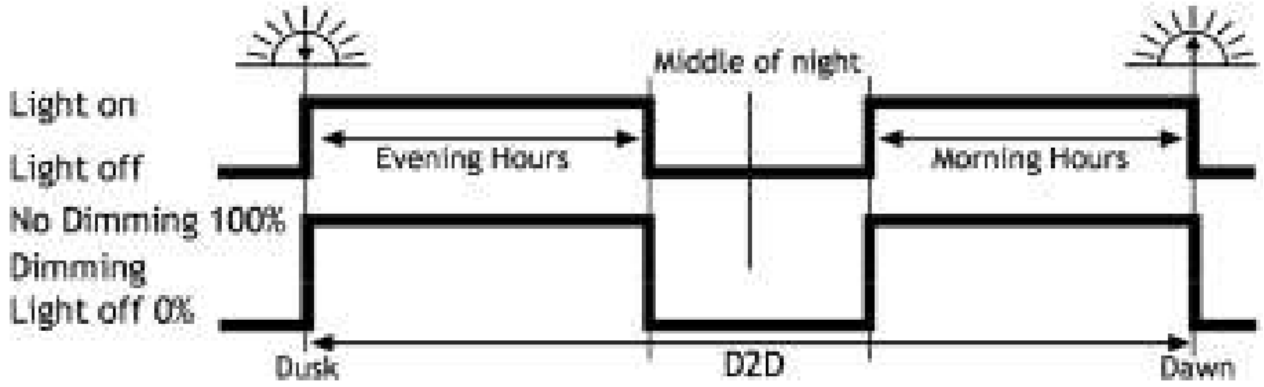
1. Hours are based on the middle of the night (toggle switch up).



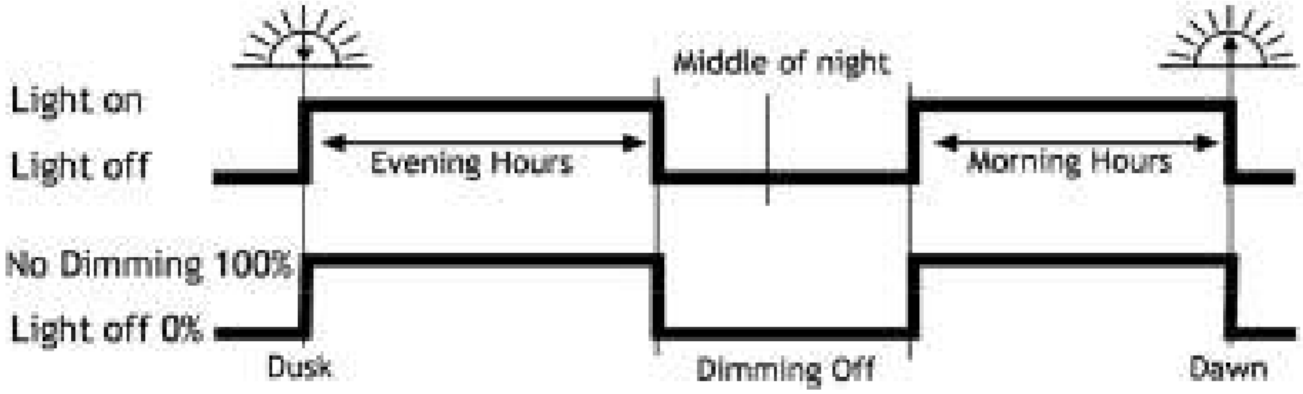

2. Hours based on Dusk & Dawn (toggle switch down).




3. Load Evening/Morning, Dimming D2D (Dusk to Dawn) (rotary switch 9).



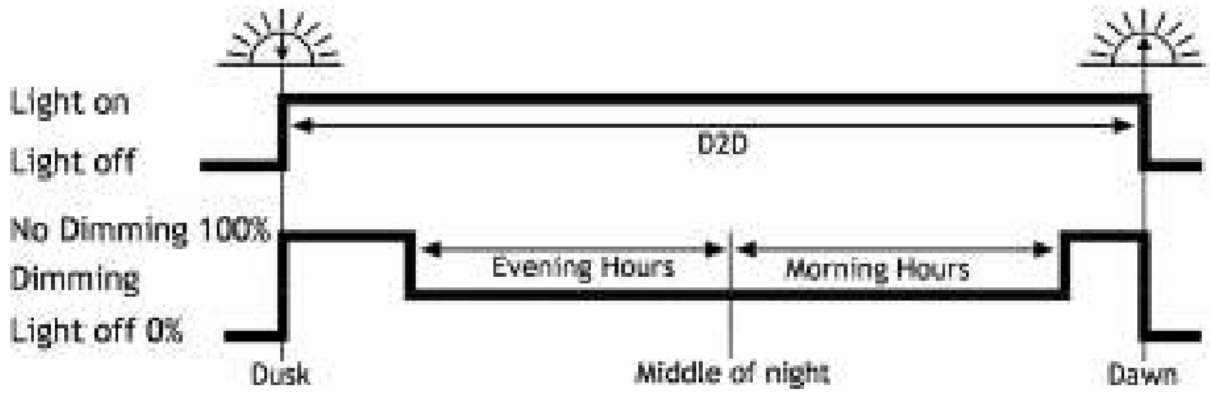

4. Load Evening/Morning, Dimming Off [1] Mode.



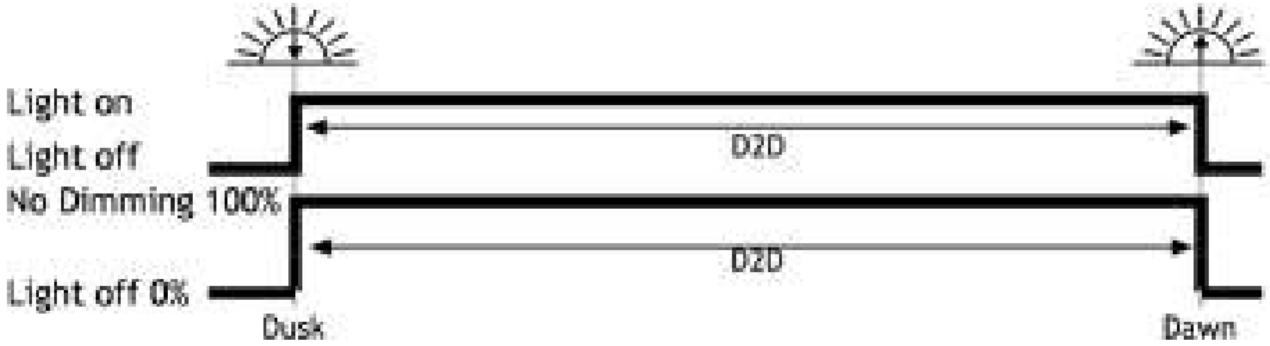

[1])Switch off both morning and evening hours to activate dimming off mode. Loads are always on if no load disconnect event happens (LVD/SOC, over current) .

**• Dusk to Dawn mode**

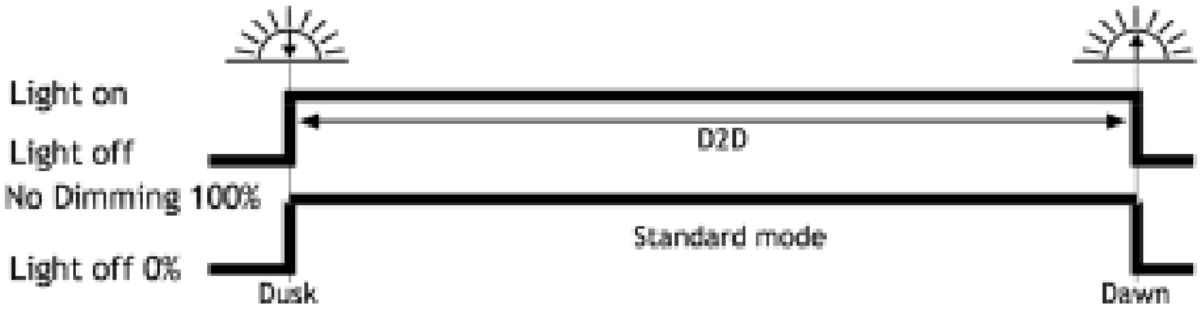
1. Load D2D mode, dimming evening/morning mode



2. Load D2D mode, dimming D2D mode

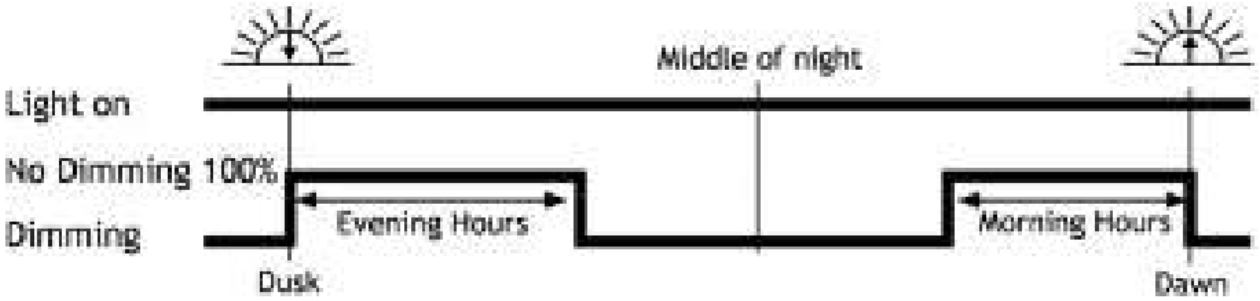



3. Load D2D mode, dimming off mode

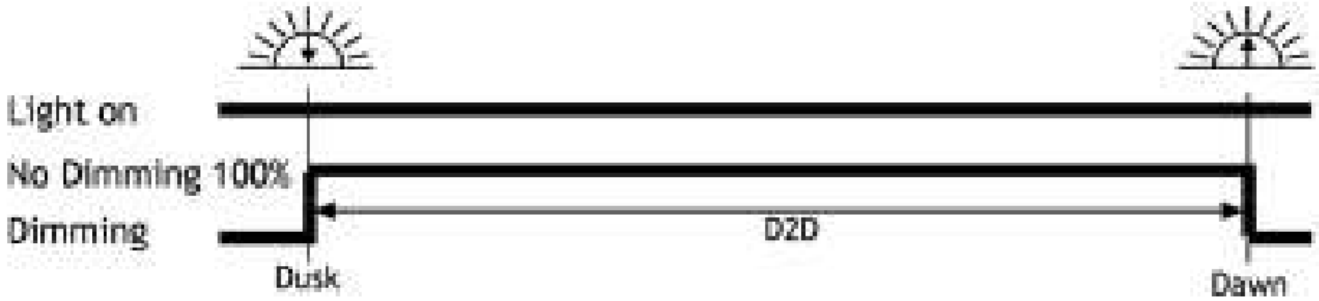



**• Standard controller mode (Morning h and Evening h OFF)**
Switch off both morning and evening hours to activate standard controller mode. Loads are always on if no load disconnect event (LVD/SOC, over current) happens.

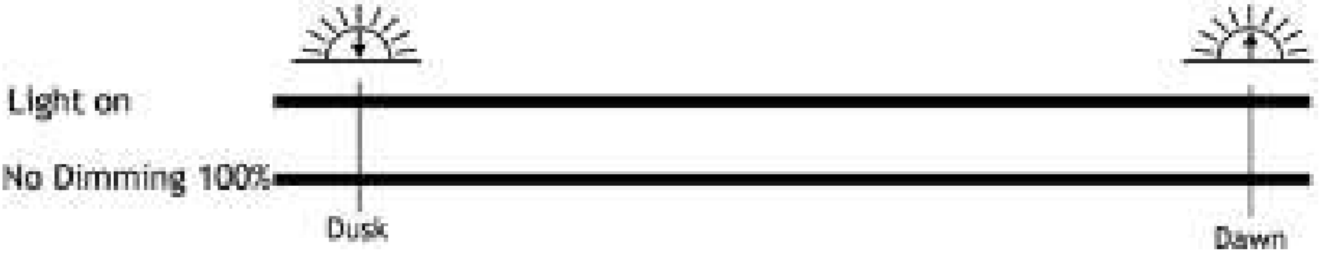
1. Load standard, dimming Evening/Morning mode




2. Load standard, dimming D2D mode




3. Load standard, dimming off **mode**




**NOTE:** Dimming can also be activated based on battery SOC/LVD. Set a value using rotary switch 10; if the

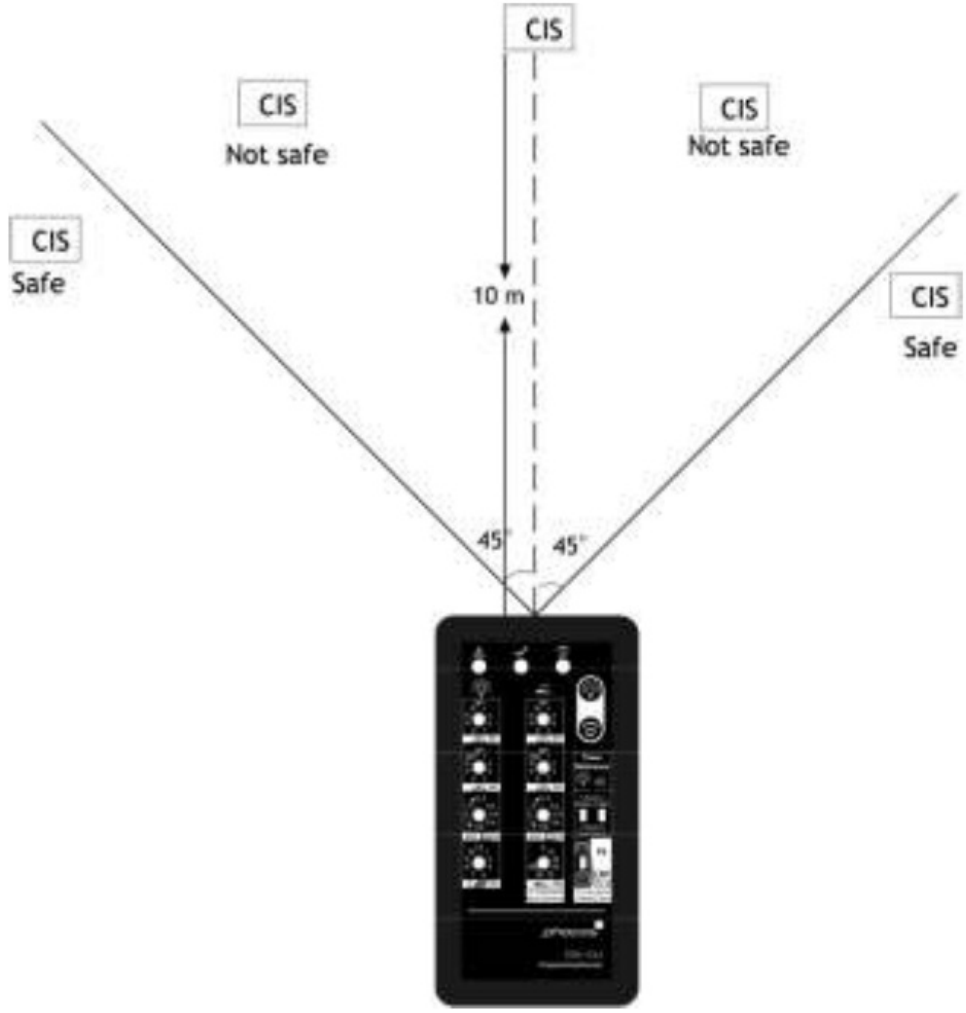
battery voltage falls below the value, the dimming function is activated.

## Night Detection Function

Night detect (V) (rotary switch 12) is used to set the night detection voltage. For the controller, dusk starts when the panel voltage falls to this value. Dawn starts when the voltage rises to the day detection voltage, which equals night detection + 1.5 V. To find the appropriate value, we recommend measuring the solar array open circuit voltage at the time when twilight has reached the level when the controller should assume night has begun.
CIS factory default is 8 V.

**CIS-CU Working Range**

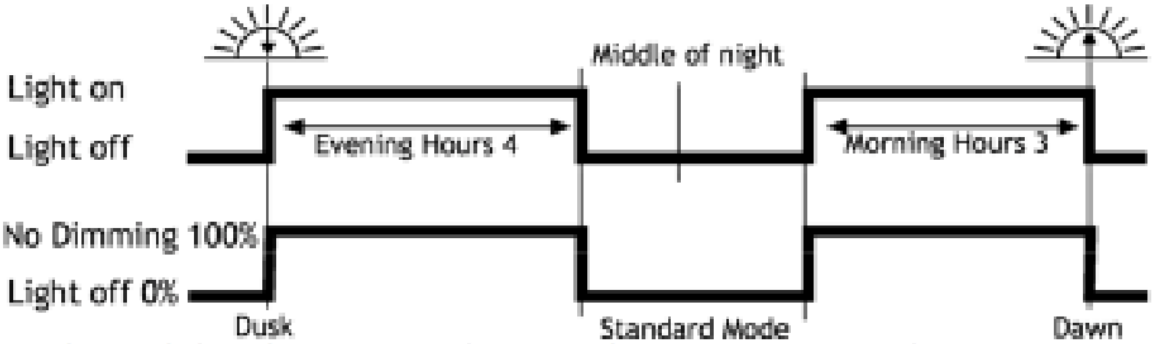
The CIS-CU can operate at up to 10 m distance from the CIS provided you are positioned and the CIS-CU is pointed directly in front of the CIS unit.
If you would like to configure more than one CIS, be sure to have visual proximity/contact with only one CIS unit at a time. To assure this, keep a minimum angle and distance from the others as shown below.



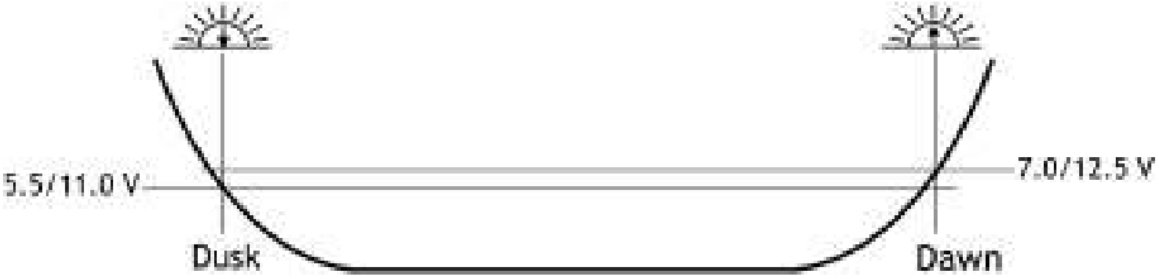

## Configuration Examples

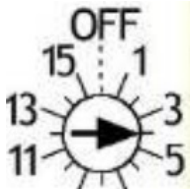
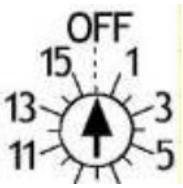
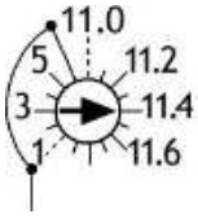
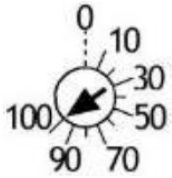
**• CIS-N-10 / CIS-N-20 (Single Load, No Dimming)**

1. Dual timer (load on for 4 hours after dusk, 3 hours before dawn), LVD: 11.4 V, no dimming, night detect 5.5 V.
   Load control function:

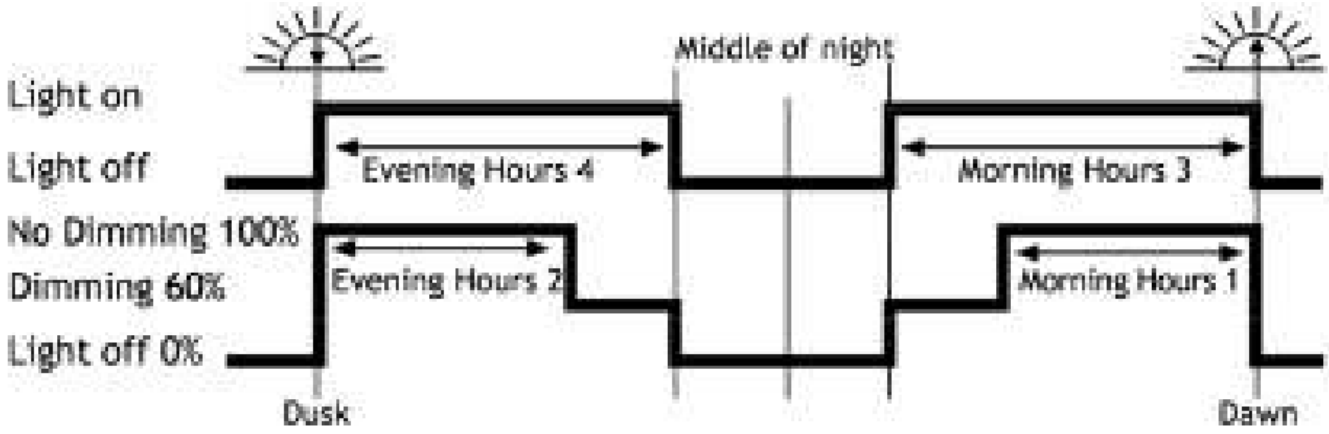



Night and day detection voltage (solar open circuit voltage):

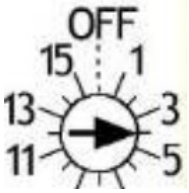
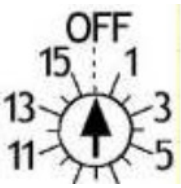
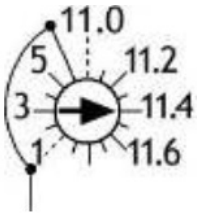
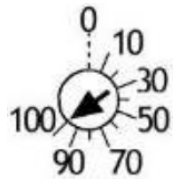



| | | | |
|---|---|---|---|
| Evening (h) Load 1 (Rotary Switch 5) |   | Evening (h) Load 2 (Rotary Switch 8) |   |
| Morning (h) Load 1 (Rotary Switch 6) |   | Morning (h) Load 2(Rotary Switch 9) |   |
| SOC LVD (V) Load 1 (Rotary Switch7) |   | SOC LVD (V) Load 2 (Rotary Switch 10) | Don't Care |
| Night Detection (V) Load 1 and Load 2 (Rotary Switch 12) |   | Dimming (%) (Rotary Switch 11) |   |
| Timer Reference Load 1 (Toggle Switch 1) | Down | Timer Reference Load 2 (Toggle Switch 2) | Don't Care |

• **CIS-N-MPPT-LED (Single Load, Dimming)**
Dual timer (load on for 4 hours after dusk, 3 hours before dawn), LVD:
11.4 V, dimming (evening h 2, morning h 1, dimming LVD 11.9 V), dimming value: 60%, night detection: 5.5 V.
**NOTE:** Dimming will also be activated if the battery falls below 11.9 V.
Load control function:




Night and day detection voltage (solar open circuit voltage):


| | | | |
|---|---|---|---|
| Evening (h) Load 1 (Rotary S witch 5) |   | Evening (h) Load 2 (Rotary S witch 8) |   |
| Morning (h) Load 1 (Rotary S witch 6) |   | Morning (h) Load 2(Rotary S witch 9) |   |
| SOC LVD (V) Load 1 (Rotary Switch7) |   | SOC LVD (V) Load 2 (Rotary Switch 10) | Don’t Care |
| Night Detection (V) Load 1 an d Load 2 (Rotary Switch 12) |   | Dimming (%) (Rotary Switch 11) |   |
| Timer Reference Load 1 (Tog gle Switch 1) | Down | Timer Reference Load 2 (Tog gle Switch 2) | Don’t Care |

**Technical Data**

| | |
|---|---|
| Power consumption | Max. 100 mA |
| Run-time | Up to 20 k programs with 2000 mAh batteries |
| Dimensions | 70 mm x 135 mm x 24 mm |
| Weight | 150 g (without batteries) |
| Type of protection | IP22 |
| Ambient temperature | -40 to +60 °C |

**Liability Exclusion**

The manufacturer shall not be liable for damages, especially on the battery, caused by use other than as intended or as mentioned in this manual or if the recommendations of the battery manufacturer are neglected. The manufacturer shall not be liable if there has been service or repair carried out by any unauthorized person, or for unusual use, wrong installation, or bad system design.

**Phocos AG**
Magirus-Deutz-Str. 12
89077 Ulm, Germany
**Phone** +49 731 9380688-0
**Fax** +49 731 9380688-50
www.phocos.com
info@phocos.com

**Version:** 20210611
**Made in China**

CE ISO9001 RoHs

## Documents / Resources

| | |
|---|---|
|  | phocos Cis-CU Remote Control Unit [pdf] User Manual<br>Cis-CU Remote Control Unit, Cis-CU, Remote Control Unit, Control Unit, Unit |

## References

- Software Downloads | Phocos - Your off-grid and Any-Gridâ„¢ Partner