



PHOCOS CIS-CU

User Manual



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 which 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 the CIS-CU remote control please download for free the CISCOM software from our website www.phocos.com/software-downloads. The CISCOM 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 "Send" button ---> Wait for response.

Error

OK

Send



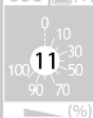
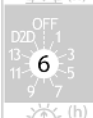
DIM



Test



Send



Long press
Base Dimming

Timer
Reference



h Based on
Middle of Night

1

2

h Based on
Dusk & Dawn








Long press
+ Battery Type

phocos

CIS-CU

Programming Remote

Buzzer Response

| | |
|---|---|
|  After transmitting | Programming error |
|  After transmitting | Programming successful |
|  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 transmission |

LED Response

| | |
|--------------------------|------------------------|
| "Error" after "Transmit" | Programing 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 dimming ² |
| Send pressed 4s | Transmit all settings except 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 batteries |
| Toggle switch 4 | Up | N/A |
| | Down | |

"Send" button pressed for 4s:

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

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

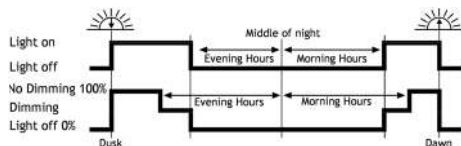
²) End of charge voltage (boost): 14.0 V, float voltage: 13.8 V

Load Control Function (Single Load Controller)

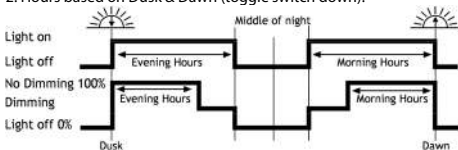
| | Load | Dimming | |
|-----------------|------|---------|--|
| Timer Reference | 1 | 2 | Hours based on middle of night or dusk and dawn |
| Evening (h) | 5 | 8 | 1-15 hours |
| Morning (h) | 6 | 9 | 1-14 hours and D2D (Dusk to Dawn) mode |
| SOC LVD (V) | 7 | 10 | State of charge (SOC) and voltage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

• Evening/Morning modes

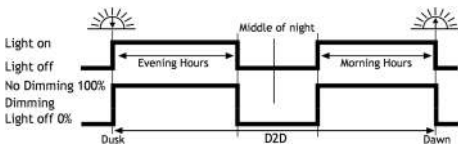
1. Hours based on middle of night (toggle switch up).



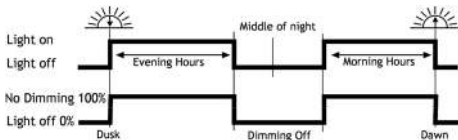
2. Hours based on Dusk & Dawn (toggle switch down).



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



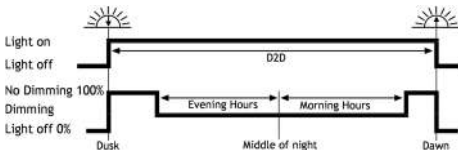
4. Load Evening/Morning, Dimming Off¹ Mode.



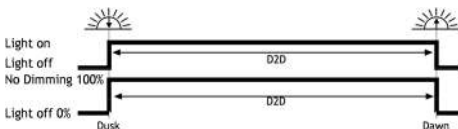
¹) Switch off both morning and evening hours to activate dimming off mode. Loads are always on if no load disconnect event happens (LVD/SOC, over current) .

• Dusk to Dawn mode

1. Load D2D mode, dimming evening/morning mode



2. Load D2D mode, dimming D2D mode



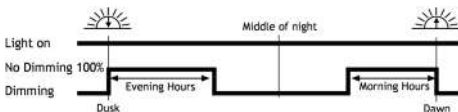
3. Load D2D mode, dimming off mode



- 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.

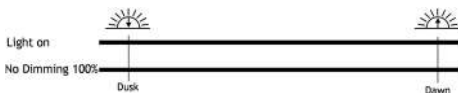
1. Load standard, dimming Evening/Morning mode



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.

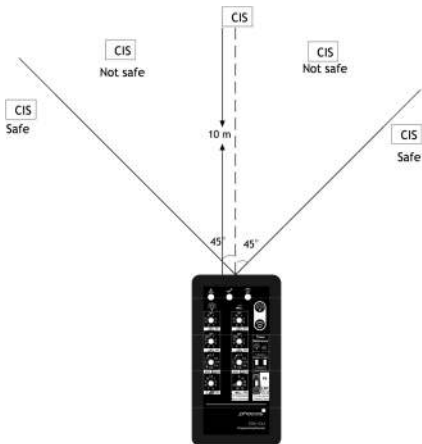
Night Detection Function

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 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 to only one CIS unit at a time. To assure this, keep a minimum angle and distance to the others as shown below.

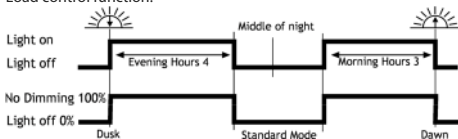


Configuration Examples

- 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):



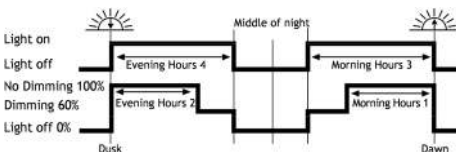
| | | | |
|--|---|---|---|
| Evening (h) Load 1 (Rotary Switch 5) |  | Evening (h) Load 2 (Rotary Switch 8) |  |
| Morning (h) Load 1 (Rotary Switch 6) |  | Morning (h) Load 2 (Rotary Switch 9) |  |
| SOC LVD (V) Load 1 (Rotary Switch 7) |  | SOC LVD (V) Load 2 (Rotary Switch 10) | Don't Care |
| Night 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 battery falls below 11.9 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 Switch 7) | | SOC LVD (V) Load 2 (Rotary Switch 10) | |
| 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) | Down |

Technical Data

| | |
|---------------------|---|
| Power consumption | Max. 100 mA |
| Run-time | Up to 20 k programmings 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.

Specifications are subject to change without notice.

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