

The Core of Independence



Phocos CIS-CU

Control Unit

遥控器



User Manual (1-11)

用户说明书 (12-22)

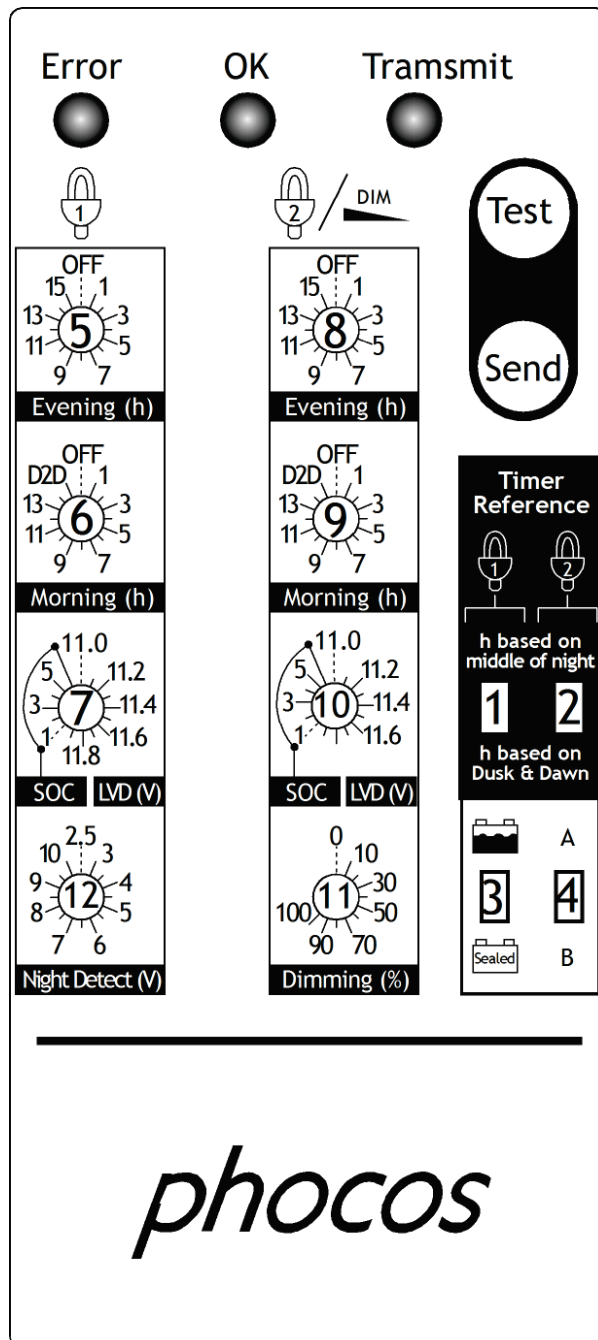
CID:181812511

Dear Client,

Thank you very much for buying a Phocos product. With your new CIS-CU remote controller you own a state-of-the art device which was developed according to the latest available technical standards. This manual gives important recommendations for installing, using and programming as so on. Read it carefully in your own interest please.

General Product Description

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



To configure CIS by CU is very easy.
Set all switches to desired settings ---> Press "Send" button --->
Wait for response.

Buzzer Response

██████████ After Transmitting	Programming Error
██ ███ After Transmitting	Programming Successful
████ After Pressing Test Button	Test Command Transmitted
██████████ After Pressing Button	CU Battery Empty

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 2 minutes ¹
Send	Transmit all Settings ²

1) If pressing the button causes a load disconnect event (LVD/SOC, over current) the load will be switched off.

2) This action will send all the settings to the CIS controller. Be sure to program only one CIS at the same time.

Load Control Function (Dual Load Controller)

	Load 1	Load 2	
Timer Reference	1	2	Hours base 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)

1) Voltage controlled (LVD):

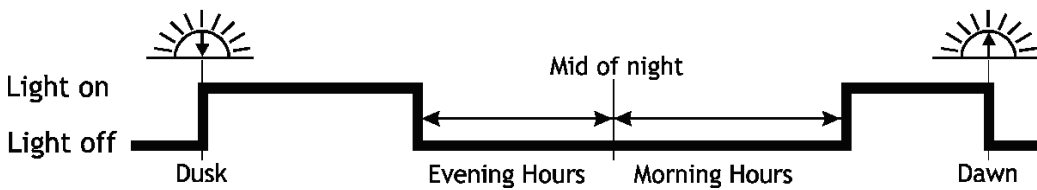
Disconnect at a fixed voltage between 11.0/22.0V and 11.9/23.8V (Step 0.1V).

2) State of charge (SOC) controlled:

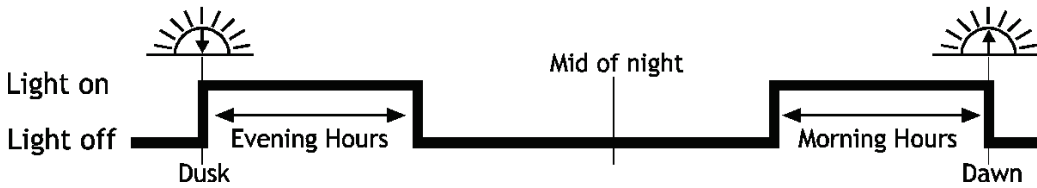
Disconnect at 11.00 V/22.00 V to 11.70 V/23.40 V (SOC1), 11.12 V/22.24 V to 11.76 V/23.52 V (SOC2), 11.25 V/22.50 V to 11.83 V/23.63 V (SOC3), 11.38 V/22.72 V to 11.89 V/23.78 V (SOC4), 11.51 V/23.02 V to 11.96 V/23.92 V (SOC5), 11.64 V/23.28 V to 12.02 V/24.04V (SOC6).

■ Evening/Morning modes

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

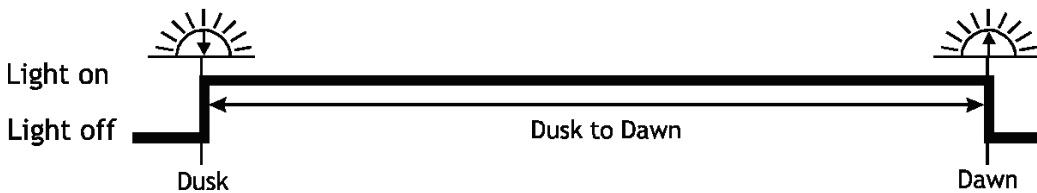


Hours based on Dusk & Dawn (toggle switch down).



■ Dusk to Dawn mode

D2D means Dusk to Dawn mode. (Rotary switch 6 and 9)



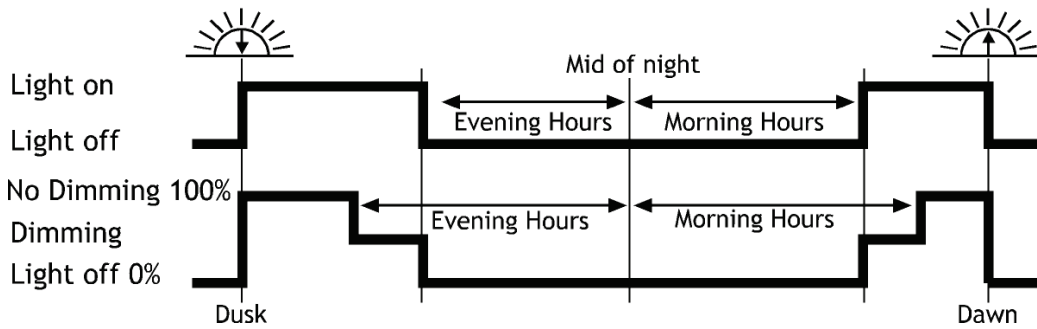
■ Standard Controller Mode (Morning h and Evening h OFF)

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

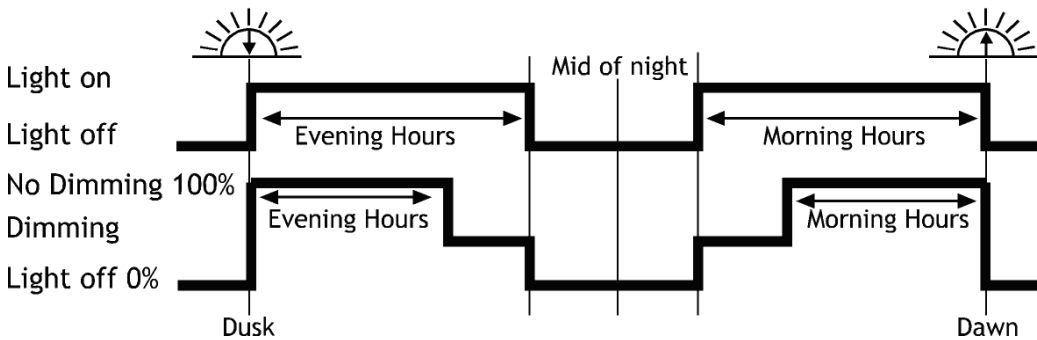
	Load	Dimming	
Timer Reference	1	2	Hours base on middle of night or dusk and dawn
Evening (h)	5	8	1-15 hours
Morning (h)	6	9	1-14 hours and D2D (Dusk to Dawn) mode
SOC LVD (V)	7	10	State of charge (SOC) and Voltage controlled (LVD)
Dimming (%)	N/A	11	Dimming values (0-100%, step 10%)

■ Evening/Morning modes

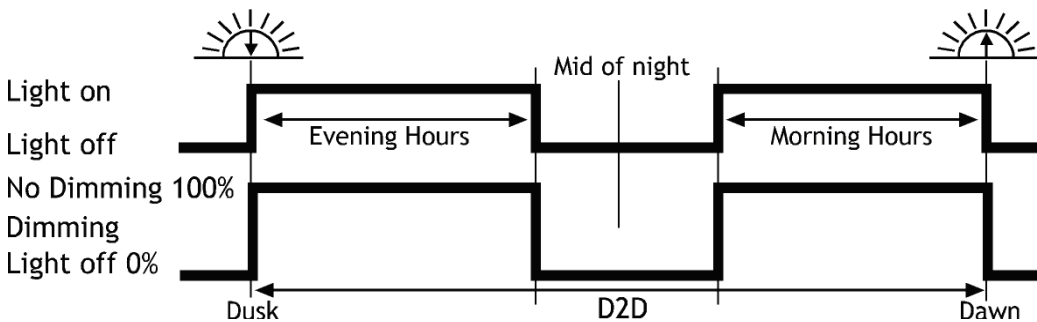
1. Hours based on middle of night (toggle switch up).



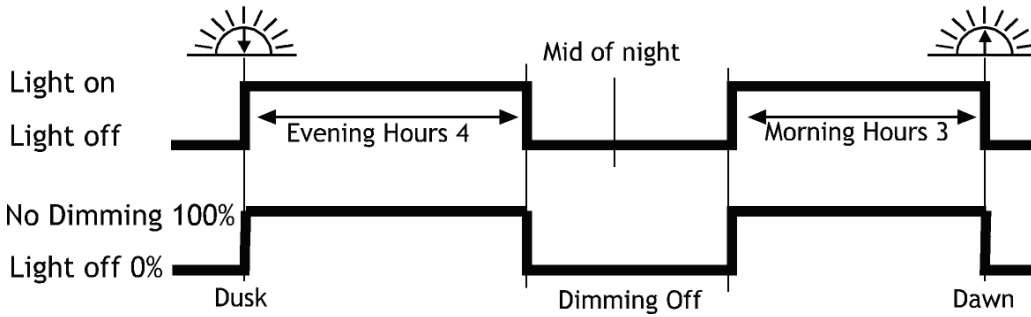
2. Hours based on Dusk & Dawn (toggle switch down).



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



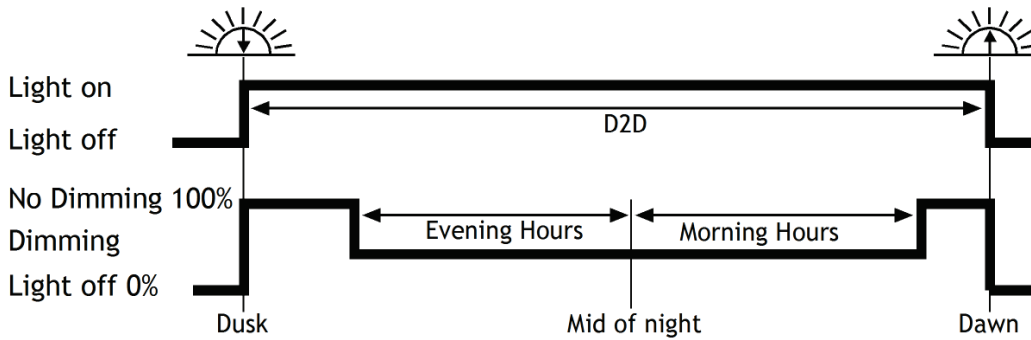
4. Load Evening/Morning, Dimming Off¹ Mode.



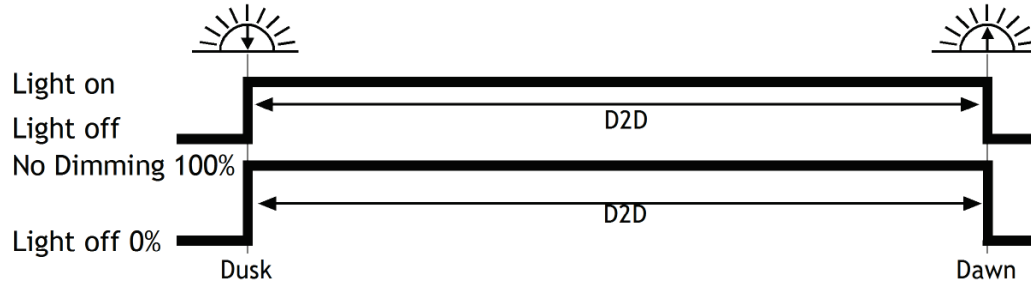
¹) Switch off both morning and evening hours to active Dimming off mode. Loads are always on if no load disconnect event happens (LVD/SOC, over current) .

■ Dusk to Dawn mode

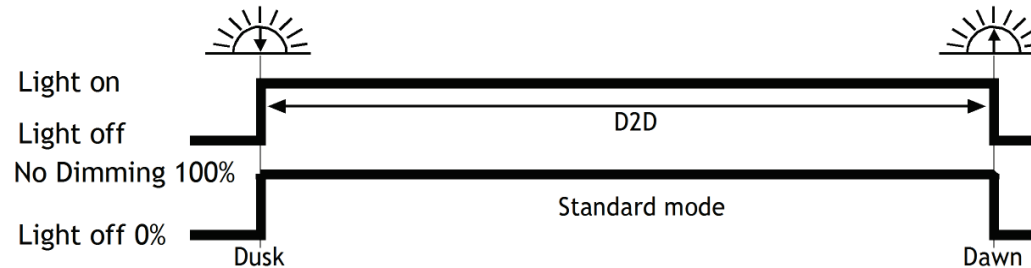
1. Load D2D mode, Dimming Evening/Morning mode



2. Load D2D mode, Dimming D2D mode



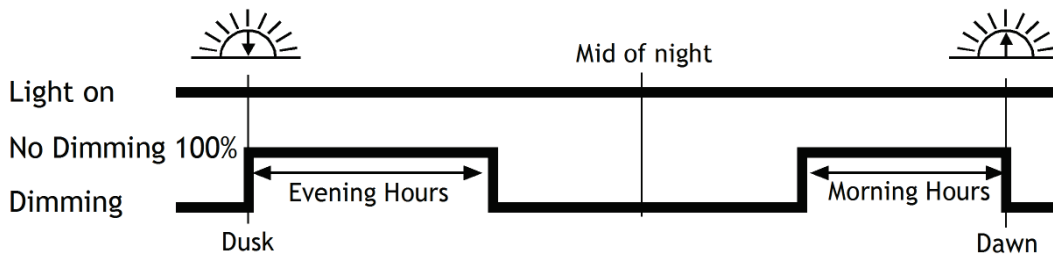
3. Load D2D mode, Dimming OFF Mode



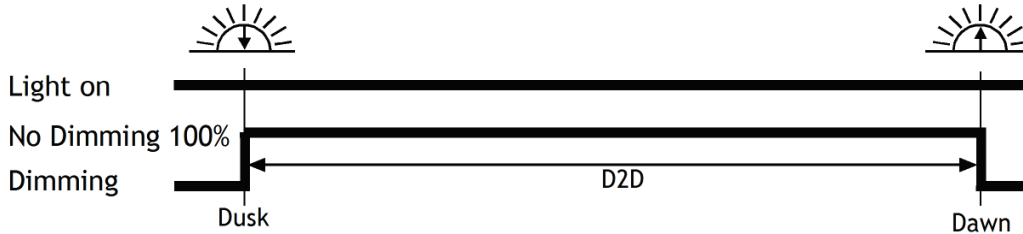
■ Standard Controller Mode (Morning h and Evening h OFF)

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

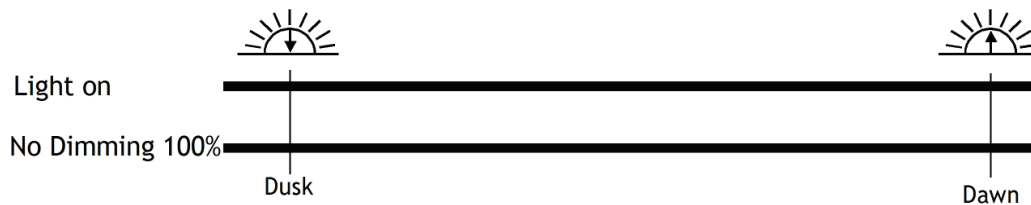
1. Load Standard, Dimming Evening/Morning mode



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 Detect Function

Night detect (V)(Rotary switch 12) is used to set the Night Detect Voltage. For the controller, dusk starts when the panel voltage falls to this value. Dawn starts when voltage rises to the Day Detect Voltage, which equals Night Detect + 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 8V.

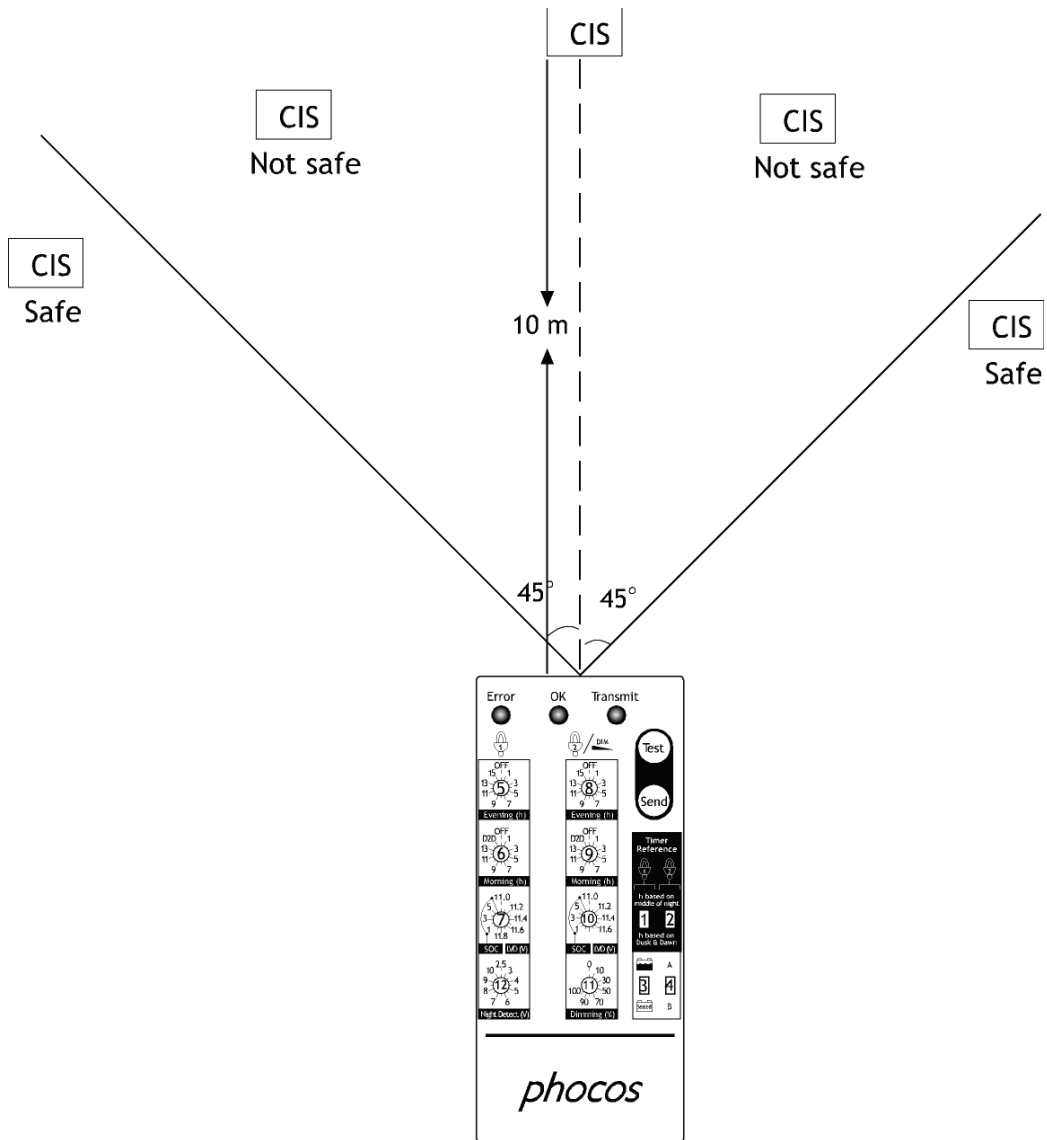
NOTE: Toggle Switch 4 is reserved for future use.

CU Working Range

The CU can operate at up to 10 m distance from the CIS provided you are positioned and 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.



Example Configurations

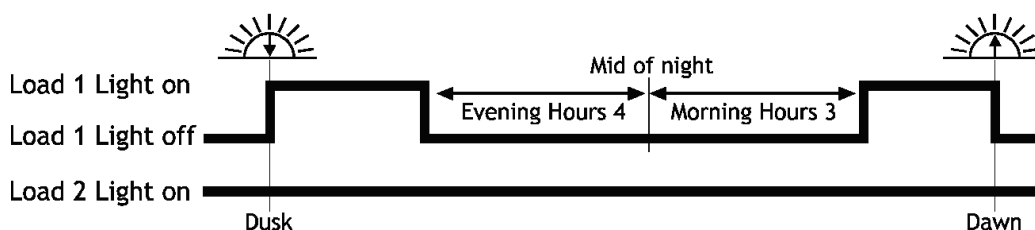
■ CIS05/10/20-2L (Dual Load)

Load 1: Dual Timer (Load on till 4 hours to Mid of Night, from 3 hours after Mid of Night), LVD: 11.4 V.

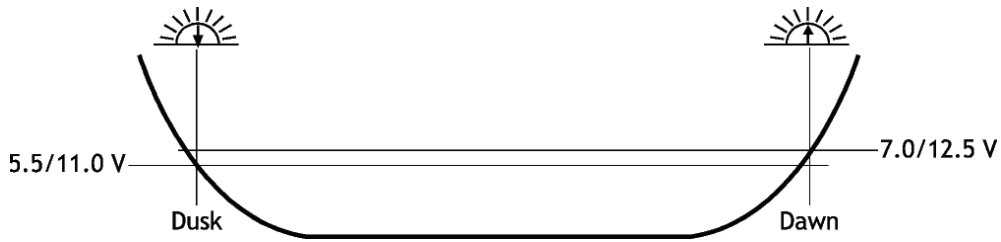
Load 2: Standard controller, LVD: 11.9V.

Battery type: Flooded, night detect: 8.0 V.

Load Control Function:



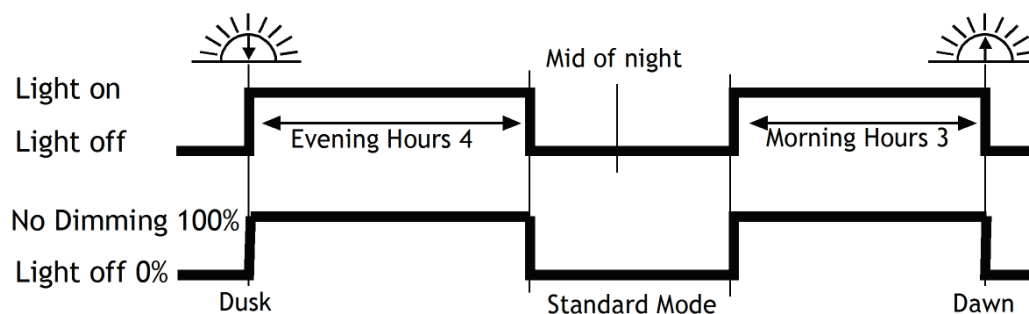
Night and Day detect voltage (Solar open circuit voltage):



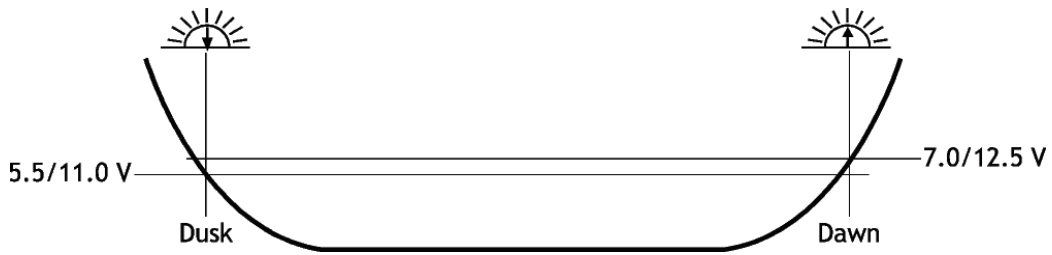
Evening (h) Load 1 (Rotary Switch 5)	OFF 15 1 13 3 11 5	Evening (h) Load 2 (Rotary Switch 8)	OFF 15 1 13 3 11 5
Morning (h) Load 1 (Rotary Switch 6)	OFF D2D 1 13 3 11 5	Morning (h) Load 2 (Rotary Switch 9)	OFF D2D 1 13 3 11 5
SOC LVD (V) Load 1 (Rotary Switch 7)	11.0 5 11.2 3 11.4 1 11.6	SOC LVD (V) Load 2 (Rotary Switch 10)	11.0 5 11.2 3 11.4 1 11.6
Night Detect (V) Load 1 and Load 2 (Rotary Switch 12)	2.5 3 10 4 9 5 8	Dimming (%) (Rotary Switch 11)	Don't Care
Timer Reference Load 1 (Toggle Switch 1)	UP	Timer Reference Load 2 (Toggle Switch 2)	Don't Care
Battery Type (Toggle Switch 3)	UP		

■ CIS05/10/20 (Single Load, No Dimming)

1. Dual Timer (Load on for 4 hours after dusk, 3 hours before dawn), LVD: 11.4 V, No Dimming, Sealed Battery, night detect: 5.5 V.
Load Control Function:



Night and Day detect voltage (Solar open circuit voltage):



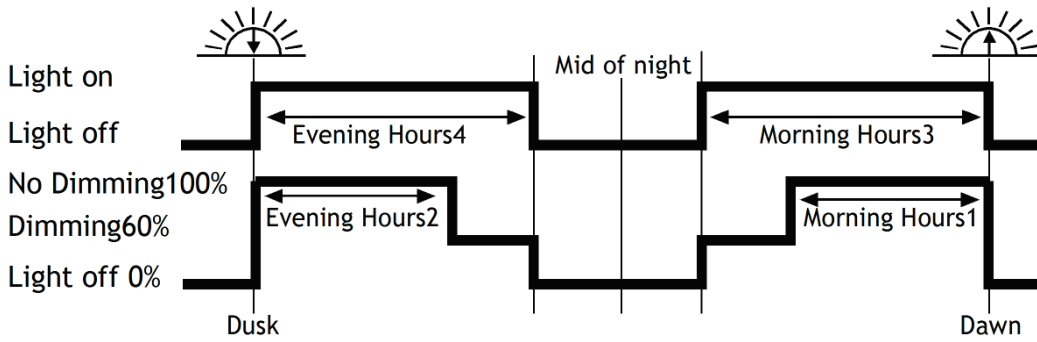
Evening (h) Load (Rotary Switch 5)		Evening (h) Dimming (Rotary Switch 8)	
Morning (h) Load (Rotary Switch 6)		Morning (h) Dimming (Rotary Switch 9)	
SOC LVD (V) Load (Rotary Switch 7)		SOC LVD (V) Dimming (Rotary Switch 10)	Don't Care
Night Detect (V) Load and Dimming (Rotary Switch 12)		Dimming (%) (Rotary Switch 11)	
Timer Reference Load (Toggle Switch 1)	Down	Timer Reference Dimming (Toggle Switch 2)	Don't Care
Battery Type (Toggle Switch 3)	Down		

■ CIS05/10/20 (Single Load, Dimming)

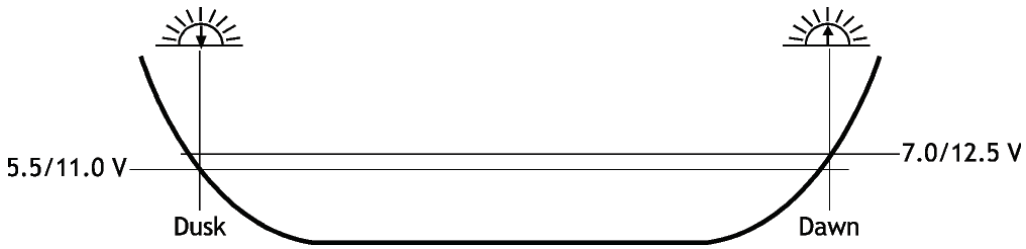
Dual Timer (Load on for 4 hours after dusk, 3 hours before dawn), LVD: 11.4 V, Dimming (Evening h 2, Morning h 1, Dimming LVD 11.9 V), Sealed Battery, Dimming value: 60%, night detect: 5.5 V.

NOTE: Dimming will also be activated if battery falls below 11.9V.

Load Control Function:



Night and Day detect voltage (Solar open circuit voltage):



Evening (h) Load (Rotary Switch 5)		Evening (h) Dimming (Rotary Switch 8)	
Morning (h) Load (Rotary Switch 6)		Morning (h) Dimming (Rotary Switch 9)	
SOC LVD (V) Load (Rotary Switch 7)		SOC LVD (V) Dimming (Rotary Switch 10)	
Night Detect (V) Load and Dimming (Rotary Switch 12)		Dimming (%) (Rotary Switch 11)	
Timer Reference Load (Toggle Switch 1)	Down	Timer Reference Dimming (Toggle Switch 2)	Down
Battery Type (Toggle Switch 3)	Down		

Power Consumption	Max. 100 mA
Run-time	Up to 20 k programmings with 2000mAh batteries
Dimensions	70 mm x 135 mm x 24 mm
Weight	150 g (without batteries)
Case Protection	IP22
Ambient Temperature Range	-40 to +60 °C

Subject to change without notice.
 Version: 20090902
 Made in one of the following countries:
 Germany - China - Bolivia - India
 Phocos AG - Germany
www.phocos.com

ISO9001:2000

 RoHS