The Core of Independence

Phocos CIS-CU

Control Unit

User Manual (1-10)

用户说明书 (11-17)

CID:181812510

General Product Description

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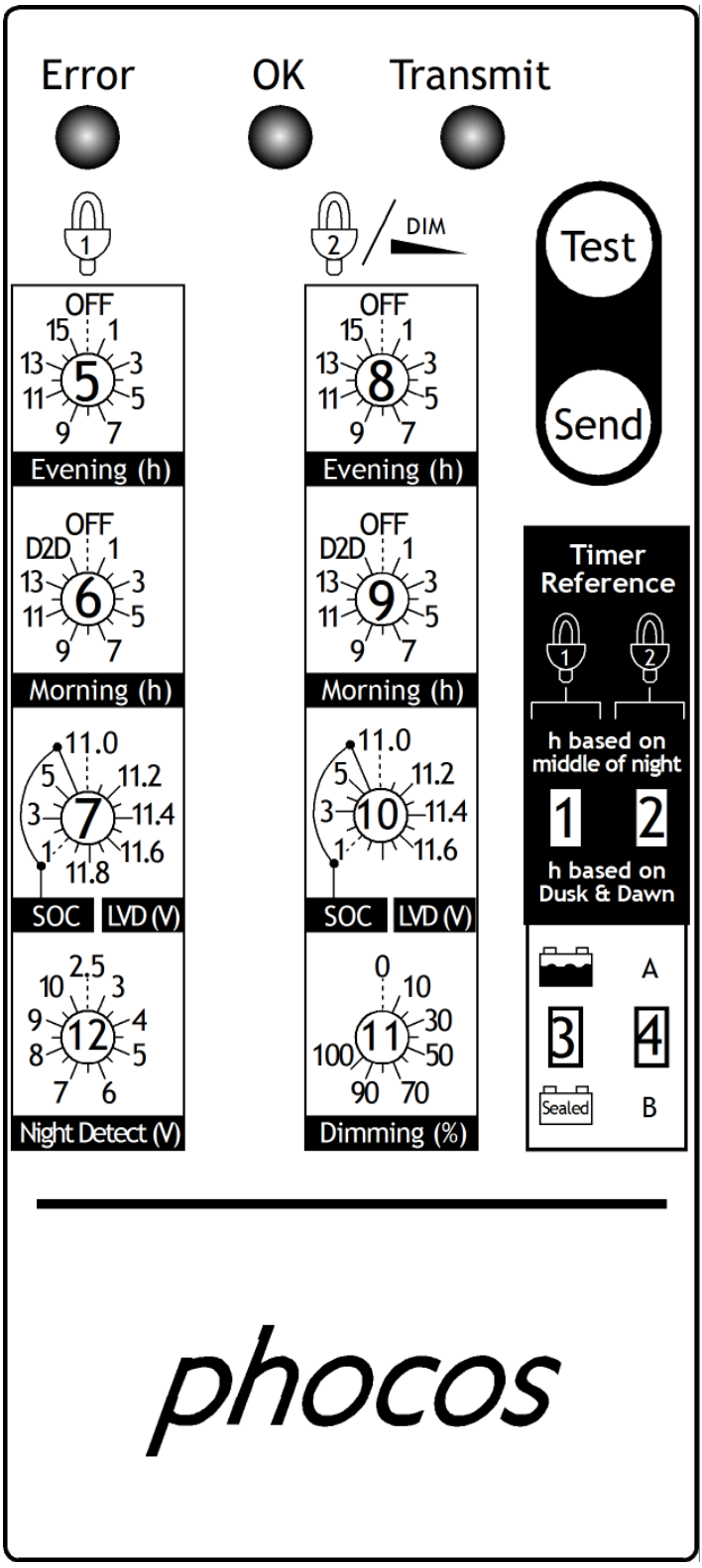
- Configures CIS charge controllers via infra-red data link
- Simple and clear configuration interface
- User Interface: LEDs, rotary switches, toggle switches, buttons
- Power supply: 2 X AA battery



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How to use CU

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.

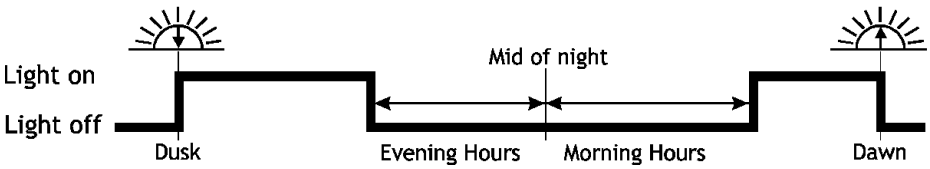
Load Control Function (Dual Load Controller)

	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)

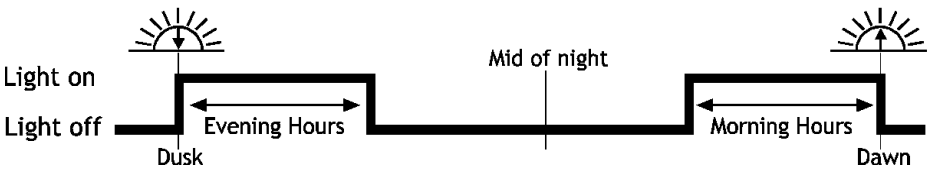
[1] Voltage controlled (LVD):
Disconnect at a fixed voltage between 11.0/22.0V and 11.9/23.8V (Step 0.1V).
[2] State of charge (SOC) controlled:
Disconnect at 11.00 V/22.00 V to 11.70 V/23.40 V (SOC1), 11.12 V/22.24 V to 11.76 V/23.52 V (SOC2), 11.25 V/22.50 V to 11.83 V/23.63 V (SOC3), 11.38 V/22.72 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

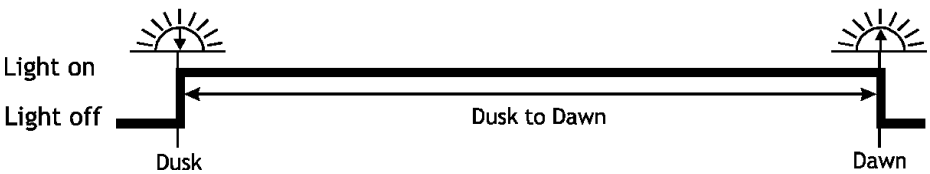
Hours based on middle of night (toggle switch up).



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 Control Function (Single Load Controller)

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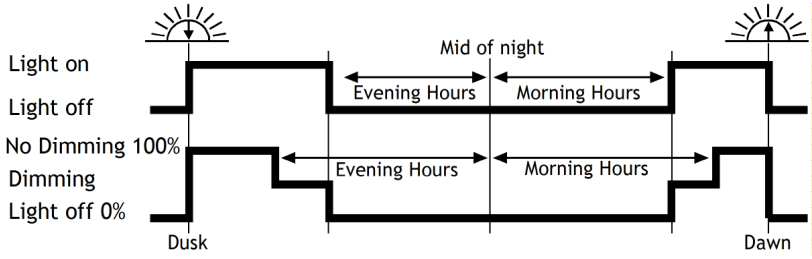
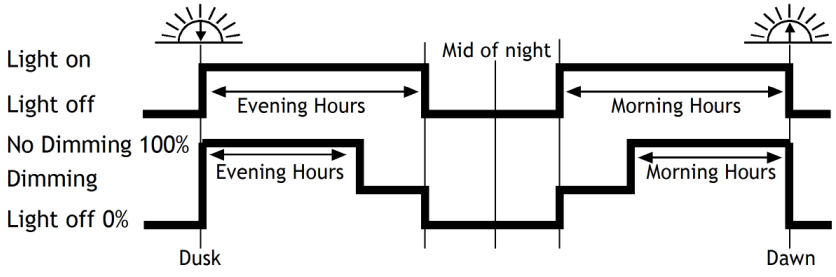
	Load	Dimming	
Timer Reference	1	2	Hours base on middle of night or dusk and dawn
Evening (h)	5	8	1-15 hours
Morning (h)	6	9	1-14 hours and D2D (Dusk to Dawn) mode
SOC LVD (V)	7	10	State of charge (SOC) and Voltage controlled (LVD)
Dimming (%)	N/A	11	Dimming values (0-100%, step 10%)

■ Evening/Morning modes

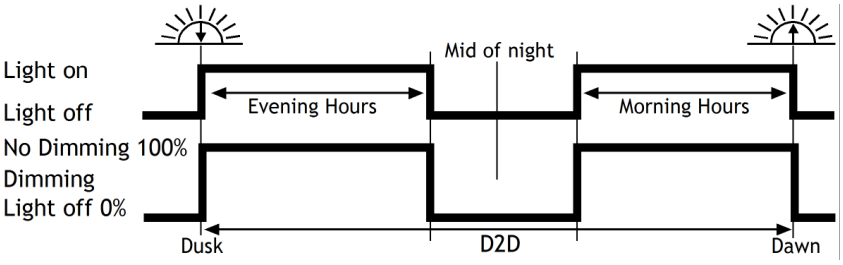
1. Hours based on middle of night (toggle switch up).



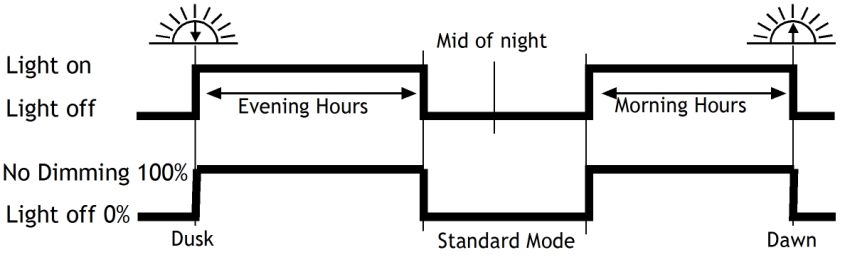
2. Hours based on Dusk & Dawn (toggle switch down).



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



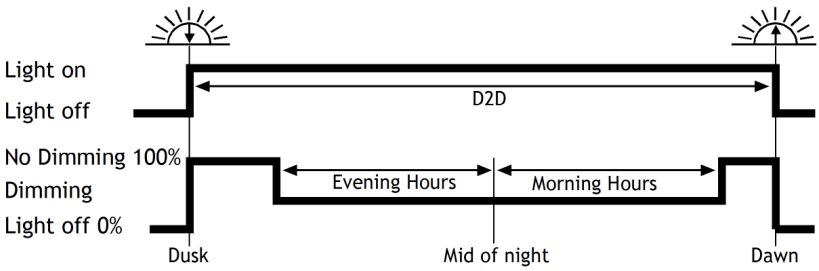
4. Load Evening/Morning, Dimming Off[1] Mode.



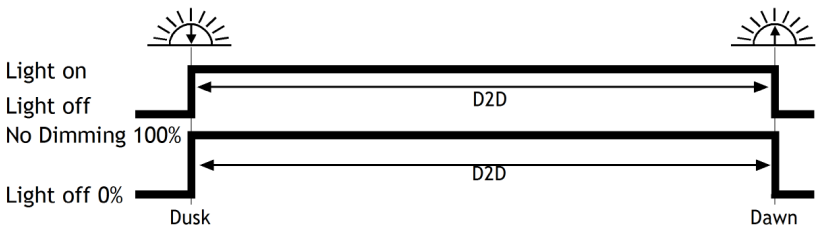
[1] Switch off both morning and evening hours to active Dimming off mode. Loads are always on if no load disconnect event happens (LVD/SOC, over current) .

■ Dusk to Dawn mode

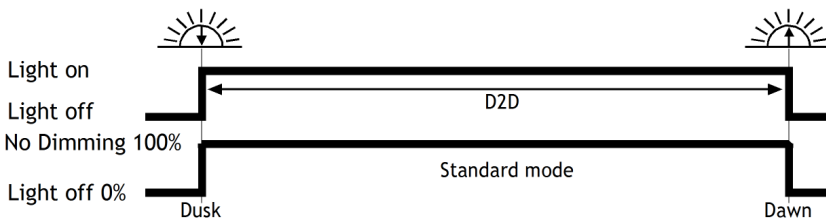
1. Load D2D mode, Dimming Evening/Morning mode



2. Load D2D mode, Dimming D2D mode



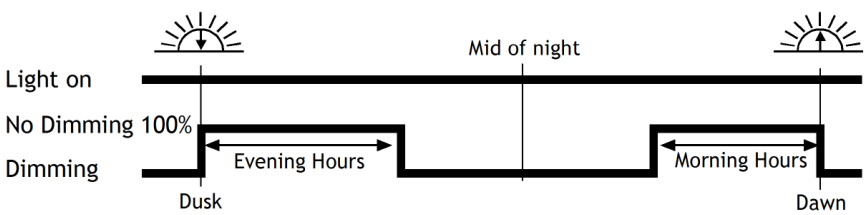
3. Load D2D mode, Dimming OFF Mode



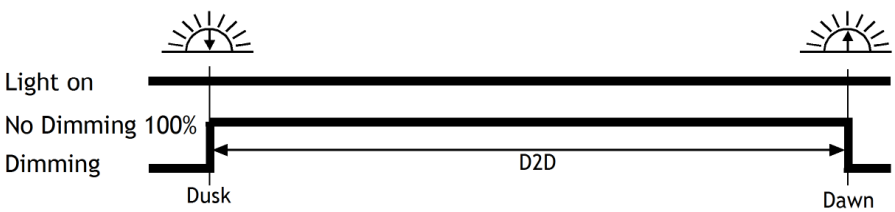
■ Standard Controller Mode (Morning h and Evening h OFF)

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.

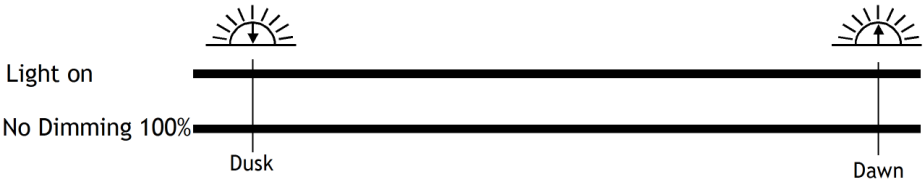
1. Load Standard, Dimming Evening/Morning mode



2. Load Standard, Dimming D2D mode



3. Load Standard, Dimming Off mode



NOTE: Dimming can also be activated based on battery SOC. Set a value using Rotary Switch 10; if the battery voltage falls below the value, the dimming function is activated.

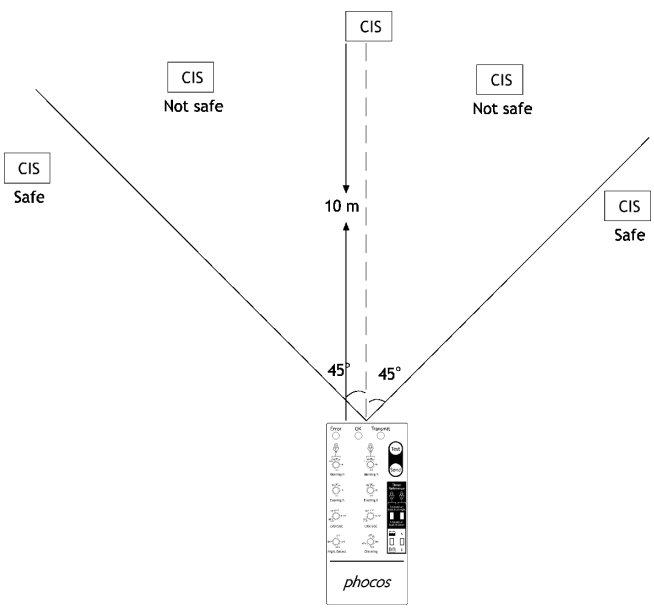
Night Detect Function

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.

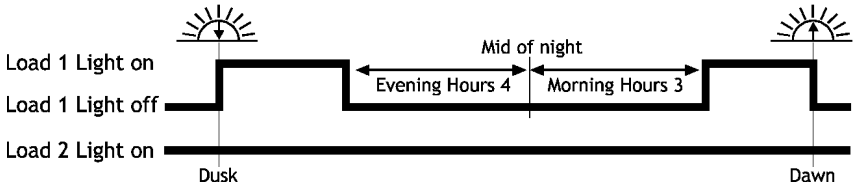


Example Configurations

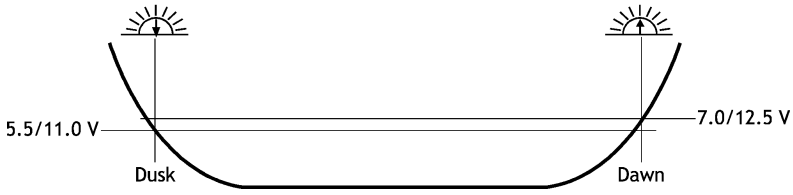
■ CIS05/10/20-2L (Dual Load)

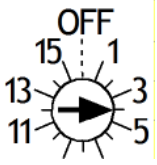
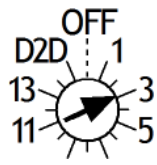
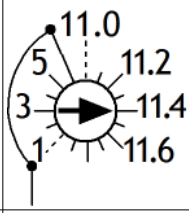
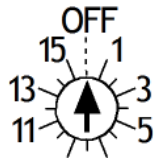
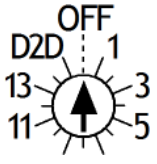
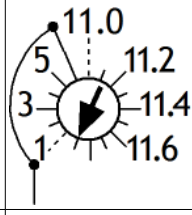
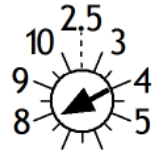
Load 1: Dual Timer (Load on till 4 hours to Mid of Night, from 3 hours after Mid of Night), LVD: 11.4 V.
Load 2: Standard controller, LVD: 11.9V.
Battery type: Flooded, night detect: 8.0 V.

Load Control Function:



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



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

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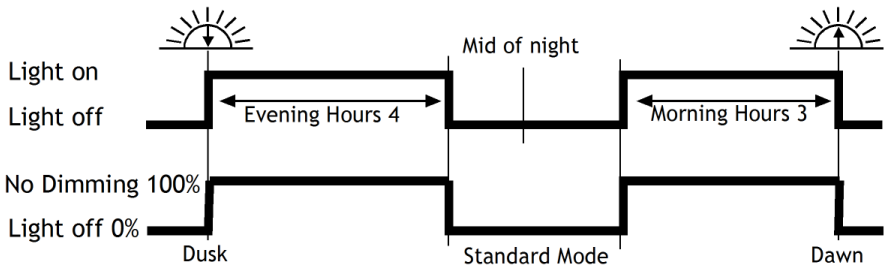
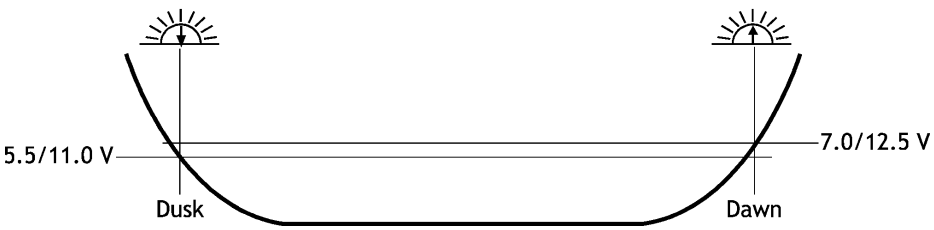
■ CIS05/10/20 (Single Load, No Dimming)

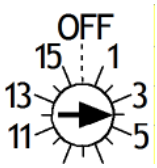
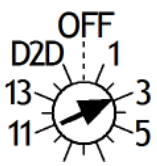
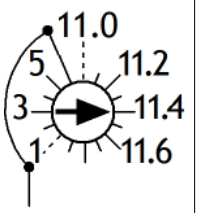
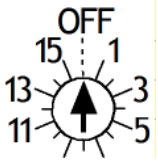
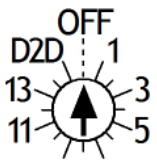
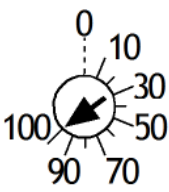
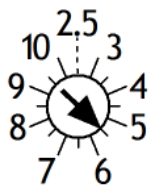
1. Dual Timer (Load on for 4 hours after dusk, 3 hours before dawn), LVD: 11.4 V, No Dimming, Sealed Battery, night detect: 5.5 V.

Load Control Function:



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



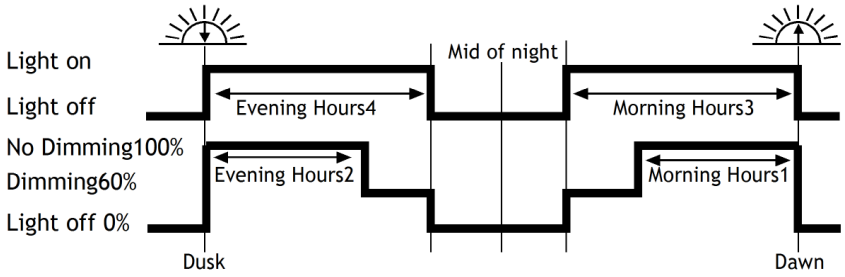
Evening (h) Load (Rotary Switch 5)		Morning (h) Load (Rotary Switch 6)	
SOC LVD (V) Load (Rotary Switch 7)		Evening (h) Dimming (Rotary Switch 8)	
Morning (h) Dimming (Rotary Switch 9)		SOC LVD (V) (Rotary Switch 10)	Don't Care
Dimming (%) (Rotary Switch 11)		Night Detect (V) Load and Dimming (Rotary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

■ CIS05/10/20 (Single Load, Dimming)

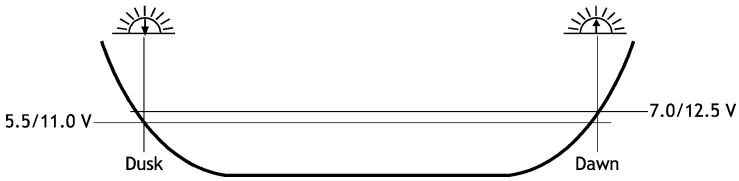
Dual Timer (Load on for 4 hours after dusk, 3 hours before dawn), LVD: 11.4 V, Dimming (Evening h 2, Morning h 1, Dimming LVD 11.9 V), Sealed Battery, Dimming value: 60%, night detect: 5.5 V.

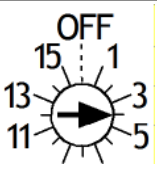
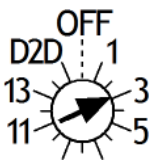
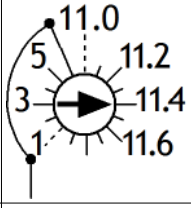
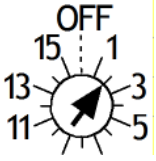
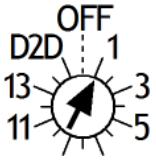
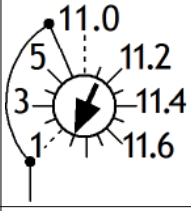
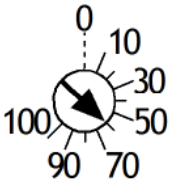
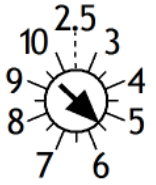
NOTE: Dimming will also be activated if battery falls below 11.9V.

Load Control Function:



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



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

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Technical Data

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: 20090803
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Germany - China - Bolivia - India
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CID:181812510

ISO9001:2000

CE RoHS