

## CIS-N-LED series (10 – 20 A)

Solar Charge Controller with integrated LED Driver



- Combines three functions in one: charge controller + flexible timer + LED driver
- Developed for rough environments; especially indicated for solar LED lamps and solar LED streetlights
- Fully protected by the encapsulated case (protection class IP68): increased lifetime and reliability, reduced costs
- Flexible dimming functions
- Auto-saving function: under and overvoltage disconnect
- Small size: fits everywhere
- True color PWM dimming
- Input for motion sensor

### CIS-N-LED:

Specially developed for rough environments and for the requirements of users of solar LED lamps and solar LED street lights: the CIS-N-LED. The highlight of the CIS-N-LED is that it combines three functions in one fully protected case: charge controller + flexible timer + LED-driver. The current required to power LEDs is directly supplied by the charge controller. Customers get a compact solution with many advantages:

- The built-in LED driver, timer and charge controller are harmonically combined and protected by a fully encapsulated housing (IP68), increasing system reliability, lifetime and also lowering investment costs.
- An on/off timer combined with an adjustable dimming function renders flexibility extending operation time and furthermore, saving energy as well.

• The CIS-N-LED also exhibits an auto-protect function: by means of its two low voltage disconnect levels, the LEDs' light will automatically be dimmed as the battery charge goes low. Levels can be programmed by means of a remote control unit (CIS-CU).

- Dimming-override input  
Input for a signal from a motion detector (PIR), will override the dimming function and set the light to full brightness in case a person is detected. In this way, one can set a low dimming level to ensure a minimum light level, enough for a safe orientation, also saving energy. When motion is detected, the light is switched to 100%. The activation time is set on the external motion detector.

# CIS-N-LED series (10 – 20 A)

Solar Charge Controller with integrated LED Driver

Type	CIS-N-LED	CIS-N-LED	CIS-N-LED	CIS-N-LED	CIS-N-LED	CIS-N-LED
	350 mA	600 mA	700 mA	1050 mA	1400 mA	2800 mA
System voltage	12/24 V auto recognition					
Max. charge current	10 A (15 A, ≤ 50 °C*)			20 A (30 A, ≤ 50 °C*)		
Float charge	13.8/27.6 V (25 °C)					
Main charge	14.4/28.8 V (25 °C), 0.5 h (daily)					
Boost charge	14.4/28.8 V (25 °C), 2 h Activation: battery voltage < 12.3/24.6 V					
Equalization charge	14.8/29.6 V (25 °C), 2 h Activation: battery voltage < 12.1/24.2 V (at least every 30 days)					
Deep discharge protection	11.00-12.02/22.00-24.04 V by SOC					
Cut-off voltage	11.0-11.9/22.0-23.8 V by voltage (adjustable step 0.1/0.2 V)					
Reconnect level	12.8/25.6 V					
Overvoltage protection	15.5/31.0 V					
Undervoltage protection	10.5/21.0 V					
Max. panel voltage	50 V					
Temperature compensation (Charge voltage)	-4.2 mV/K (2 V cell)					
Idle self consumption	5 – 8 mA					
Grounding	Negative grounded					
Ambient temperature	-40 to +60 °C					
Absolute max. device temperature	+85 °C					
Max. altitude	4,000 m above sea level					
Battery type	Lead acid (GEL, AGM, flooded)					
Adjustment range:						
Evening/morning hours timer	0 – 15 h / 0 – 14 h					
Night/day detection	2.5 – 10.0 V/5.0 – 20.0 V (adjust step 0.5/1.0 V), 4.0 – 11.5 V/8.0 – 23.0 V (adjust step 0.5/1.0 V)					
Connection wire length	20 cm					
Wire cross section	2.5 mm <sup>2</sup> (AWG 13)					
Dimensions (W x H x D)	82 x 94 x 20 mm			92 x 99 x 22 mm		
Weight	210 g			250 g		
Type of protection	IP68 (1.5 m, 72 h)					

LED driver data	CIS-N-LED	CIS-N-LED	CIS-N-LED	CIS-N-LED	CIS-N-LED	CIS-N-LED
	350 mA	600 mA	700 mA	1050 mA	1400 mA	2800 mA**
Output voltage	15-49 V for 12V system (5-15 LEDs in series), 30-49 V for 24 V system (10-15 LEDs in series)					
Nominal output current per string	350 mA	600 mA	700 mA	1050 mA	1400 mA	2800 mA
Max. load power	15 W	25 W	30 W	45 W	60 W	60 W (12 V)/120 W (24 V)
Dimming level	0 – 100% (adjust step 10%)					
PIR-input	4 – 30 V with respect to battery negative, ≥ 0.7 mA; limited protection up to 50 V					

\*Without simultaneous LED output current at a maximum ambient temperature of 50°C. Please notice: The CIS-N-LED features an integrated overtemperature protection that will reduce the average charge current in case of too high temperatures.

\*\*12 V: 15-24 V (5-8 LEDs in series)