

## CIS-MPPT (20 A)

Industrial Solar Charge Controller



- Outstanding system efficiency (max. 98%) thanks to integrated Maximum Power Point Tracker technology (MPPT)
- Maximizes power output & reduces system costs
- Encapsulated case for full protection IP68 and increased lifespan
- Timer and dimming for flexible lighting control
- Auto-protect function: two voltage disconnects extend system operation time and increase reliability
- Can be programmed via CIS-CU IR remote control unit
- Smallest size in its power class – fits everywhere
- Data logger via MXI-IR and CISCOM Software
- Compatible with 60-cell PV modules

### CIS series:

Charge controllers are the core of every PV system, precisely controlling the flow of energy while protecting the battery and increasing system efficiency.

Harsh weather conditions may damage the electronics. In order to protect these core elements and thereby increase system operation time, reliability, efficiency, and reduce costs, Phocos has designed a product line with fully encapsulated housings (IP68 protection class): the CIS series.

This is the first series of fully encapsulated, 4-stage PWM-charge controllers that can withstand extreme temperatures, dust, and water. CIS series charge controllers are extremely robust, with no moving parts, switches, or buttons. All connections to other devices are realized using lead wires rather than wire terminals, eliminating risk of damage from external influences. Settings, such as battery type, deep discharge thresholds, timers, and other configurable features, can be made quickly and easily via infrared remote control. The high quality, 4-stage PWM-charging process is combined with a low voltage disconnect, flexible load timer functions, and a multi-LED system status display. The small size of the devices delivers extra flexibility – a perfect fit for every application.

### CIS-MPPT 85/20:

With innovative maximum power point tracking technology, this Phocos MPP tracker ensures maximum performance and yield from all types of solar systems – year-round, in any weather, and in any environment.

The use of MPPT technology can contribute to a considerable boost in energy output from PV modules (up to 30% more). At the same time, the temperature-compensated, three-stage I-U curve charge control algorithm significantly extends battery lifespan.

The integrated data logger (2 years) provides an insight into system operation, displaying important information such as system status, voltage, current, etc.

PV panels primarily designed for grid connected systems (60 cell modules). The CIS-MPPT charge controller optimally charges 12V batteries with one (1) 60 cell module and 24V batteries with two (2) 60 cell modules wired in series.

# CIS-MPPT (20 A)

Industrial Solar Charge Controller

Type	CIS-MPPT 85/20
System voltage	12/24 V auto recognition
Max. charge current/load current	20 A
Max. PV input power	250 W@12 V, 500 W@24 V
Float charge	13.8/27.6 V (25 °C)
Main charge	14.4/28.8 V (25 °C), 30 min. (daily)
Boost charge	14.4/28.8 V (25 °C), 2 h Activation: battery voltage < 12.3/24.6 V
Equalization	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:	
Cut-off voltage	11 – 12 V/22 – 24 V
Reconnect level	12.8/25.6 V
Overvoltage protection	15.5/31.0 V
Undervoltage protection	10.5/21.0 V
Max. PV voltage	85 V
Min. PV voltage	17/34 V
Temperature compensation (Charge voltage)	–4 mV/cell * K
Idle self consumption	15 mA at 12 V 8 mA at 24 V
Grounding	Negative grounding
Ambient temperature	–40 to +60 °C
Max. altitude	4,000 m above sea level
Battery type	Lead acid (GEL, AGM, flooded), adjustable
Adjustment range:	
Evening/morning hours	0 – 15 h / 0 – 14 h
Night detection	2.5 – 10 V / 5.0 – 20.0 V (adjust step 0.5/1.0 V)
Day detection	Night detection + 1.5 V/3.0 V
Data logger	2 years
Connection wire length	20 cm
Dimensions (W x H x D)	130 x 150 x 45 mm
Weight	1,050 g
Wire cross section	2.5 mm <sup>2</sup>
Type of protection	IP68 (1.5 m, 72 h)
<b>Technical data dimming output</b>	<b>CIS-MPPT 85/20</b>
Dimming value	0 – 100% output power (adjust step 10%)
Dimming output voltage	0 – 10 V relative to battery minus
Impedance	1,000 Ohm