

## CIS series (5 – 20 A)

Solar Charge Controller



- Can be ordered with one output as on-off switch and another as output with dimmer function (CIS) or two on-off switches (CIS-2L)
- Corrosion-proof epoxy-encapsulated PCB (IP68)
- Compact size
- Infrared remote control programming accessory (CU)
- Intelligent timer functions available for lighting control
- Four-stage battery charging (main, float, boost, equalization), temperature compensated
- Automatic system voltage recognition (12/24 V)

Isolated PV systems exposed to extreme weather/environmental conditions (streetlights, navigation buoys, etc.) have increased risk for damage to the power electronics. In order to assure reliable battery protection under such conditions, Phocos developed a fully encapsulated charge controller to prevent corrosion: CIS.

CIS is an industrial-grade charge controller that is suitable for all practical PV applications. It conforms to the IP68 protection system. Four-stage PWM-charging is combined with low-voltage disconnect, flexible load timer functions, and a multi-LED system status display. CIS is available in two versions:

**SingleLoad version with dimming output (CIS):** The CIS comes with a charge output and a control output for dimmable ballasted lamps.

**DualLoad version with two load outputs (CIS-2L):**

The CIS-2L comes with two charge outputs to independently control two loads.

The CIS has no moving parts, switches, or buttons. Settings such as battery type, deep discharge thresholds, timers, and other configuration items are made quick and easy by infrared remote control.



# CIS series (5 – 20 A)

Solar Charge Controller

Type	CIS 05 CIS-2L 05	CIS 10 CIS-2L 10	CIS 20 CIS-2L 20
System voltage	12/24 V auto recognition		
Max. charge/load current	5 A	10 A	20 A
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 V		
Max. panel voltage	$U_{BATmin} + 30\text{ V}$ (if module and battery are connected with correct polarity)		
Overvoltage protection by varistor	55 V		
Temperature compensation	–25 mV/K at 12 V		
(Charge voltage)	–50 mV/K at 24 V		
Max. own consumption	5 – 8 mA at 12 V 6 – 10 mA at 24 V		
Grounding	Positive grounding possible		
Ambient temperature	–40 to +60 °C		
Max. altitude	4,000 m above sea level		
Battery type	Lead acid (GEL, AGM, flooded)		
Adjustment range:			
Evening/morning hours	0 – 15 h / 0 – 14 h		
Night/day detection	2.5 – 10 V		
Wire length	10 cm		
Dimensions (W x H x D)	82 x 58 x 20 mm		
Weight	150 g		
Wire cross section	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Type of protection	IP68 (1.5 m, 72 h)		
<b>Technical data dimming output</b>	<b>CIS 05</b>	<b>CIS 10</b>	<b>CIS 20</b>
Dimming value	0 – 100% output power		
Dimming output voltage	0 – 10 V (max. 1 mA)		

**CE** EG-Konformitätserklärung  
EC-Declaration of Conformity

Manufacturer:

**Phocos AG, Magirus-Deutz Strasse 12, D-89077 Ulm**

*Designation of products:*

CIS05-1.1	CIS Industrial Solar Charge Controller, 12/24V, 5/5 A, IP68, timer, ROHS
CIS05-1.1-2L	CIS Industrial Solar Charge Controller, 12/24V, 5/5/5 A, IP68, dual load, timer, ROHS
CIS10-1.1	CIS Industrial Solar Charge Controller, 12/24V, 10/10 A, IP68, timer, ROHS
CIS10-1.1-2L	CIS Industrial Solar Charge Controller, 12/24V, 10/10/10 A, IP68, dual load, timer, ROHS
CIS20-1.1 CIS	Industrial Solar Charge Controller, 12/24V, 20/20 A, IP68, timer, ROHS
CIS20-1.1-2L	CIS Industrial Solar Charge Controller, 12/24V, 20/20/20 A, IP68, dual load, timer, ROHS
CIS-CU-1.0	Configuration Unit for CIS controllers

*The above mentioned products comply with the essential requirements, which are specified in the following directives:*

**2004/108/EC     Electromagnetic compatibility**

*The conformity with this rules is proven by the respect of the following standards:*

**EN60730-1:2009  
EN60730-2-11:2008**

*Documentation evidencing conformity with the requirements of the directives is kept available for inspection at the manufacturer's address.*

12. Oktober 2011

  
Rudy Müller, Product Manager

# Certificate

Standard **ISO 9001:2008**

Certificate Registr. No. 01 100 096099

TÜV Rheinland Cert GmbH certifies:

Certificate Holder:

**Phocos China Ltd.**

4F., No. 1 Bldg., 4A, Changyi Road, Qingdao,  
Shandong Province 266021, P. R. China

Scope:

Manufacturing of DC Lighting, Charge Controller & System  
Accessory

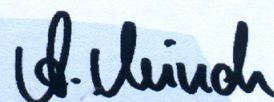
An audit was performed, Report No. 096099. Proof has been  
furnished that the requirements according to ISO 9001:2008  
are fulfilled.

The due date for all future audits is 24-12 (dd.mm).

Validity:

The certificate is valid from 2010-12-21 until 2013-01-30.

2010-12-21



TÜV Rheinland Cert GmbH  
Am Grauen Stein · 51105 Köln



DGA-ZM-58-95-00