



America

# CERTIFICATE

No. U8V 15 10 83974 004

**Holder of Certificate:** Phocos North America Inc

Suite 101  
325 S Euclid Ave  
Tucson AZ 85719  
USA

**Production  
Facility(ies):**

83887

**Certification Mark:**



**Product:**

Controller  
Charge Controller

**Model(s):**

CIS-N-05-1.0-2L  
(For additional models and ratings see attachment.)

**Parameters:**

Rated Input Voltage:	CIS-N-05-1.0-2L PV Cell: 30/50 V DC Battery: 12/24 V DC
Rated Input Current:	5 A max.
Protection Class:	III
Degree of Protection:	IP68
Rated Output Voltage:	12/24 V DC
Rated Output Current:	5/5 A
Maximum Ambient Temperature:	60°C

**Tested  
according to:**

CAN/CSA C22.2 No. 107.1-01 (reaffirmed 2011)  
UL 1741, 2nd Ed January 28, 2010 (Rev: January 7, 2015)  
Note: Intrinsic Safety was not part of this investigation.

The product was voluntarily tested according to the relevant safety requirements noted above. It can be marked with the certification mark above. The mark must not be altered in anyway. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC Guide 67. Certification is based on the TÜV SÜD "Testing and Certification Regulations". TÜV SÜD America Inc. is an OSHA recognized NRTL and a Standards Council of Canada accredited certification body.

**Test report no.:** DI1210616-300

**Date,** 2015-11-02

Page 1 of 3

David B. Dorfner



## Attachment to Certificate U8V 15 10 83974 004

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## Rating Information:

Model Designation Matrix			
Model	PV Cell/Input	Battery	Output/Load
<b>Phocos Model CISxx Family</b>			
CIS05-1.1	30/50 V DC, max 5 A	12/24 V DC	12/24 V DC, 5A or 5/5A
CIS10-1.1	30/50 V DC, max 10 A	12/24 V DC	12/24 V DC, 10A or 10/10A
CIS20-1.1	30/50 V DC, max 20 A	12/24 V DC	12/24 V DC, 20A or 20/20A
CIS05-1.1-2L	30/50 V DC, max 5 A	12/24 V DC	12/24 V DC, 5/5A
CIS10-1.1-2L	30/50 V DC, max 10 A	12/24 V DC	12/24 V DC, 10/10A
CIS20-1.1-2L	30/50 V DC, max 20 A	12/24 V DC	12/24 V DC, 20/20A
<b>Phocos Model CIS-N-xx Family or SEPACO Model SEP-ALC-10-1 and SEP-ALC-20-1 or CARMANAH EGE Series EMS Model 72051</b>			
CIS-N-05-1.0, CIS-N-05-2.0	30/50 V DC, max 5A	12/24 V DC	12/24 V DC, 5A or 5/5A
CIS-N-10-1.0, CIS-N-10-2.0, SEPACO SEP-ALC-10-1	30/50 V DC, max 10A	12/24 V DC	12/24 V DC, 10A or 10/10A
CIS-N-20-1.0, CIS-N-20-2.0, SEPACO SEP-ALC-20-1, CARMANAH EGE Series EMS 72051	30/50 V DC, max 20A	12/24 V DC	12/24 V DC, 20A or 20/20A
CIS-N-05-1.0-2L, CIS-N-05-2.0-2L	30/50 V DC, max 5A	12/24 V DC	12/24 V DC, 5/5A
CIS-N-10-1.0-2L, CIS-N-10-2.0-2L	30/50 V DC, max 10A	12/24 V DC	12/24 V DC, 10/10A
CIS-N-20-1.0-2L, CIS-N-20-2.0-2L	30/50 V DC, max 20A	12/24 V DC	12/24 V DC, 20/20A
<b>Phocos Model ECO-N-xx-T series or CARMANAH GP-PC-xx series</b>			
Phocos ECO-N-10-T CARMANAH GP-PC-10	30/50 V DC, max 10A	12/24 V DC	12/24 V DC, 10A or 10/10A
Phocos ECO-N-20-T CARMANAH GP-PC-20	30/50 V DC, max 20A	12/24 V DC	12/24 V DC, 20A or 20/20A

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**Model Differences:**

The numerical suffix 05, 10 or 20 denotes the maximum amperage input from the PV cell as well as the maximum charge/load current in amps. Models with a "2L" indicate dual outputs. Model CIS family are positively grounded; Model CIS-N family are negatively grounded. Models CIS-N-20-1.0-2L, CIS-N-20-2.0-2L and ECO-N-20-T were the base models used for testing and represents all other models in the CISxx, CIS-N-xx and ECO-N-xx-T series. Only limited testing was required to accept the new model configuration.

Models ECO-N-10-T and ECO-N-20-T are cost reduced versions (dimming and IR communication are not used) of the single output Models CIS-N-10-1.0 and CIS-N-20-1.0 and are configured using terminals vs pig-tail leads.

Models CIS-N-xx-2.0 and CIS-N-xx-2.0-2L are functionally identical to the original models (CIS-N-xx-1.0 and CIS-N-xx-1.0-2L) except that the firmware and hardware were updated and the pcb layout was optimized for performance. Models CISxx-1.1 were updated with the same new firmware, hardware and pcb layout but the model designation did not change. Only limited testing was required to accept the new model configuration.

SEPCO Model SEP-ALC-10-1 is the same as Phocos Model CIS-N-10-1.0.

SEPCO Model SEP-ALC-20-1 is the same as Phocos Model CIS-N-20-1.0.

CARMANAH EGE Series EMS Model 72051 is the same as Phocos Model CIS-N-20-1.0.

CARMANAH Models GP-PC-10, GP-PC-20 are the same as Phocos Models ECO-N-10-T and ECO-N-20-T.

**Engineering Consideration:**

Intrinsic Safety was not part of this investigation.

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