



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

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David B. Dorfner



Attachment to Certificate U8V 15 10 83974 004

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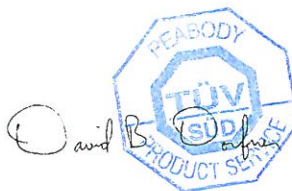


Rating Information:

| Model Designation Matrix | | | |
|--|----------------------|------------|---------------------------|
| Model | PV Cell/Input | Battery | Output/Load |
| Phocos Model CISxx Family | | | |
| 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 |
| Phocos Model CIS-N-xx Family or SEPSCO Model SEP-ALC-10-1 and SEP-ALC-20-1 or CARMANAH EGE Series EMS Model 72051 | | | |
| 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, SEPSCO 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, SEPSCO 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 |
| Phocos Model ECO-N-xx-T series or CARMANAH GP-PC-xx series | | | |
| 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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