DNV·GL

Certificate No:
TAA00000U2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
CBM E4/E8 24DC / 0.5-10A NO-R

Issued to
Phoenix Contact GmbH & Co. KG
Blomberg, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**A**
Enclosure	**Required protection according to the Rules shall be provided upon installation on board.**

This Certificate is valid until **2021-10-09**.

Issued at **Hamburg** on **2016-10-10**

for **DNV GL**

DNV GL local station: **Magdeburg**

Approval Engineer: **Heinz Scheffler**

Duy Nam Le
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Product description

Multi-channel, electronic device circuit breaker with active current limitation for protecting up to eight loads at 24 V DC in the event of overload and short circuit. With nominal current assistant and electronic locking of the set nominal currents. For installation on DIN rails.

CBM E4 24DC/0.5-10A NO-R

- Nominal input voltage / current: 24 V DC / 40 A
- Operating range input voltage / current: 18 V DC ... 30 V DC / 0…40 A
- Nominal output voltage / current per channel: 24 V DC / 10 A
- Operating range output voltage / current per channel: 18 V DC ... 30 V DC / 0…10 A
- Floating contact: off due to a fault or the voltage is outside the range
- Prewarning (I > 80%): 24 V DC signal if at least one channel is above 80% of the current setting
- Reset input: Switch on the channels that were switched off by a fault

CBM E8 24DC/0.5-10A NO-R

- Nominal input voltage / current: 24 V DC / 80 A
- Operating range input voltage / current: 18 V DC ... 30 V DC / 0…80 A
- Nominal output voltage / current per channel: 24 V DC / 10 A
- Operating range output voltage / current per channel: 18 V DC ... 30 V DC / 0…10 A
- Floating contact: off due to a fault or the voltage is outside the range
- Prewarning (I > 80%): 24 V DC signal if at least one channel is above 80% of the current setting
- Reset input: Switch on the channels that were switched off by a fault

Application/Limitation

The feed-in power supply must have electrical isolation between the primary and secondary circuit. The devices can be used up to a maximum of 30 V DC.

Temperature derating CBM E8 24DC/0.5-10A NO-R:

- < 40 °C: 80 A
- < 50 °C: 60 A
- < 60 °C: 50 A
- < 70 °C: 40 A

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test Reports: E144863E12; E144863E22; U161378E1; S151571E1; DVT_CBM_Rev_03
Documents: Documents overview_161378 Rev 00 dated 2016-10-06; Data sheet 83165870 Rev. 02; Data sheet 83165879 Rev. 02, Operating instructions MNR 9067103 – 03 dated 2016-07-06.

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2015.

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.
The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE