

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Peripheral Equipment**

with type designation(s)

Overcurrent protection device series Mico Pro fix, Mico Pro flex, Mico Pro PM, Mico Pro PD

Issued to

**Murrelektronik GmbH
Oppenweiler, Germany**

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:**

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	A

Issued at **Hamburg** on **2018-07-31**This Certificate is valid until **2023-07-30**.DNV GL local station: **Augsburg**for **DNV GL**Approval Engineer: **Dariusz Lesniewski**

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Joannis Papanuskas
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.



Product description

Nomenclature Breakdown:

Mico Pro	Fix	1.	10
I	II	III	IV

I – Basic Model Designation

Mico Pro Series designation

II – Function

Fix	fix output rating
Flex	flexible output current rating
PM 24VDC/40A	Power Module for 24 Vdc / 40 A
PD2x12	Passive distribution box
PD2x2x06	Passive distribution box

III – Number of channels

1.	1 channel
2.	2 channels
4.	4 channels

IV – Rated current

2	2 A
4	4 A
6	6 A
8	8 A
10	10 A
16	16 A
20	20 A

Hardware version: 1.xx

Software version: 1.xx

Application/Limitation

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 RU SHIP Pt.4 Ch.9 Sec. 1.

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition November 2016.

Marking of product

The products to be marked with:

- device name /Art. no.
- manufacturer name
- code

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

Job Id: **262.1-027149-1**
Certificate No: **TAA00001YE**

- 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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE