

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Power supply unit

with type designation(s)

Emparro 10-100-240/48 (Part no. 85439), Emparro 20-100-240/24 (Part no. 85442)

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.

Type	EMC class	Temperature class	Vibration class	Humidity class	Degree of protection
Emparro 10-100-240/48 (Part no. 85439)	A	D	A	B	IP20
Emparro 20-100-240/24 (Part no. 85442)	A	D	A	B	IP20

Issued at **Hamburg** on **2020-07-10**This Certificate is valid until **2025-07-09**.for **DNV GL**DNV GL local station: **Essen**Approval Engineer: **Marco Rinkel****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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Emparro 10-100-240/48 (Part no. 85439)

Input

Nominal voltage: 100 ... 240 VAC
Nominal frequency: 50/60 Hz
Nominal current: 5.3 A @ 100 VAC
2.2 A @ 240 VAC

Output

Output voltage: 48 VDC
Current: 48 VDC / 10 A (up to 60 °C)

Emparro 20-100-240/24 (part no. 85442)

Input

Nominal voltage: 100 ... 240 VAC
Nominal frequency: 50/60 Hz
Nominal current: 5.3 A @ 100 VAC
2.3 A @ 240 VAC

Output

Output voltage: 24 VDC
Current: 24 VDC / 20 A (up to 60 °C)

LED indicator: LED green - output voltage OK

LED red - overload, over temperature or short-circuit

Potential free alarm contact (NO-contact)

Fastening: DIN-rail mounting TH35

Fitting position: Vertical

Terminal type: Spring clamp, push-in

Protection class of the housing: IP20

Housing material: metal

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.

Equipment intended to be installed on ships contracted for construction on or after 1st January 2022 is to comply with 14.8 and 14.11 of the class guideline DNVGL-CG-0339, 2019.

Type Approval documentation

Job Id: **262.1-033672-1**
Certificate No: **TAE000040U**

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, 2019.
See also Application/Limitation.

Marking of product

The products to be marked with:

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

END OF CERTIFICATE