

TYPE APPROVAL CERTIFICATE

This is to certify:

That the DC Power Supply

with type designation(s)
Emparro series

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.

Temperature	D
Humidity	B
Vibration	A
EMC	A
Enclosure	A / IP20

Issued at **Hamburg** on **2019-07-18**

This Certificate is valid until **2024-07-17**.

DNV GL local station: **Augsburg**

Approval Engineer: **Marco Rinkel**

for **DNV GL**

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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

Emparros series switch mode power supplies as listed below:

Emparro 10-100-240/12 (Art. No. 85434)

Input:

Nominal voltage: 100 ... 240 VAC
Nominal frequency: 50/60 Hz
Nominal current: 1.3 A @ 100 VAC
0.6 A @ 240 VAC

Output:

Output voltage: 12 VDC
Current: 12 VDC / 10 A (up to 60 °C)

Emparro 2,5-100-240/48 (Art. No. 85437)

Input:

Nominal voltage: 100 ... 240 VAC
Nominal frequency: 50/60 Hz
Nominal current: 1.3 A @ 100 VAC
0.6 A @ 240 VAC

Output:

Output voltage: 48 VDC
Current: 48 VDC / 2.5 A (up to 60 °C)

Emparro 5-100-240/48 (Art. No. 85438)

Input:

Nominal voltage: 100 ... 240 VAC
Nominal frequency: 50/60 Hz
Nominal current: 2.6 A @ 100 VAC
1.1 A @ 240 VAC

Output:

Output voltage: 48 VDC
Current: 48 VDC / 5 A (up to 60 °C)

Emparro 5-100-240/24 (Art. No. 85440)

Input:

Nominal voltage: 100 ... 240 VAC
Nominal frequency: 50/60 Hz
Nominal current: 1.3 A @ 100 VAC
0.6 A @ 240 VAC

Output:

Output voltage: 24 VDC
Current: 24 VDC / 5 A (up to 60 °C)

Emparro 10-100-240/24 (Art. No. 85441)

Input:

Nominal voltage: 100 ... 240 VAC
Nominal frequency: 50/60 Hz
Nominal current: 2.6 A @ 100 VAC
1.1 A @ 240 VAC

Output:

Output voltage: 24 VDC
Current: 24 VDC / 10 A (up to 60 °C)

Miscellaneous:

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
Housing material: Metal

Place of manufacture

Murrelektronik CZ spol. s r.o.
Průmyslová 762
CZ-33301 Stod
Czech Republic

Approval conditions

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

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

Murrelektronik
Model (e.g. Emparro 10-100-240/12)
Art. No. as listed under Product description
Unique serial number
Power supply ratings (input/output)

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