DNV·GL

Certificate No:
TAE00002GU

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Battery Charger

with type designation(s)
MASS-1 24/25

Issued to
Mastervolt B.V.
Amsterdam, Netherlands

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Productapproved by this certificate is accepted for installation on all vessels classed by DNV GL.

Voltage output	**24 V DC**
Power	**600 W**
Temperature class	**A**
Vibration class	**A**
Humidity class	**A**
Degree of protection	**A**

Issued at **Høvik** on **2017-12-21**
This Certificate is valid until **2022-12-31**.
DNV GL local station: **Rotterdam**

Approval Engineer: **Nicolay Horn**

for **DNV GL**

Andreas Kristoffersen
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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Job Id: **262.1-009163-3**
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Product description

Battery charger. Charging of 24 V open and closed (AGM & Gell) lead acid batteries, lihuim batteries and power simultaneously loads. Equiped with temperature compensated charging.

Type	Input Voltage	Input Current	Output (at 45ºC)	Enclosure
MASS-1 24/25	1 ph 190 - 250 V AC, 50/60 Hz, ± 5 %	3,6 A at 230 V AC	24 V DC / 25 A	IP 23

Application/Limitation

The output current will be deacreased if operating at 45 ºC for longer periode or with restricted ventilation.
Derating with 2.5 % / ºC > 40 ºC.

Type Approval documentation

Tests carried out

Low temperature, Dry heat, Vibration, Humidity/ Damp heat in according to IEC 60068-2,
EMC in accordance with SfC. 2.4 Class B.

Marking of product

Mastervolt – charger model no. Mass-1 24/25 – charger input – charger output.

Periodical assessment

The scope of the periodical/renewal assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine tests(RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed 2 and 3.5 year and at renewal.

END OF CERTIFICATE