DNV·GL

Certificate No:
TAE000013Z

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Constant Voltage Charger

with type designation(s)
MASS- 24/50MB, 24/75C & 24/100C

Issued to
Mastervolt International
AMSTERDAM, Netherlands

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

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

Voltage output	**24 V DC**
Power	**up to 3500 VA**
Temperature class	**A**
Vibration class	**A**
Humidity class	**B**
Enclosure class	**A**

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2016-05-13**

for **DNV GL**

DNV GL local station: **Rotterdam**

Approval Engineer: **Nicolay Horn**

Marit Laumann
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

Battery charger. Charging of 24 V open and closed lead acid (gel or wet) batteries and power simultanously loads. Equipped with temperature compensated charging.

Type	Input Voltage	Input Current	Output (at 40 ºC)	Enclosure
MASS-24/50-2	1 ph 180 - 260 V AC, 50/60 Hz, ± 5 %	7,0 A at 230 V AC	24 V DC / 50 A	IP 23
MASS-24/75C	1 ph 180 - 260 V AC, 50/60 Hz, ± 5 %	11,2 A at 230 V AC	24 V DC / 75 A	IP 23
MASS-24/100C	1 ph 180 - 260 V AC, 50/60 Hz, ± 5 %	14,4 A at 230 V AC	24 V DC / 100 A	IP 23

Application/Limitation

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

Applicable for bridge installation in accordance with Class requirements.

Type Approval documentation

Tests carried out

Low temperature, Dry heat & Vibration in according to SfC No. 2.4 Class A, Humidity/ Damp heat and EMC in accordance with SfC No. 2.4 Class B.

Marking of product

Mastervolt – charger model no. 24/xxx – charger input – charger output.

Periodical assessment

The scope of the periodical 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 periodical 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 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.

Periodical assessment to be performed at least every second year.

END OF CERTIFICATE