



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAE00002GU**  
Revision No:  
**1**

## This is to certify:

That the **Battery Charger**

with type designation(s)  
**MASTERVOLT MASS 24/25**

Issued to

**Navico Group EMEA B.V.**  
**Amsterdam, Noord-Holland, Netherlands**

is found to comply with

**DNV rules for classification – Ships, offshore units, and high speed and light craft**

## Application :

**Product approved by this certificate is accepted for installation on all vessels classed by DNV.**

<b>Voltage output</b>	<b>24 V DC</b>
<b>Power</b>	<b>600 W</b>
<b>Temperature class</b>	<b>A</b>
<b>Vibration class</b>	<b>A</b>
<b>Humidity class</b>	<b>A</b>
<b>Degree of protection</b>	<b>A</b>

Issued at **Høvik** on **2023-01-02**

for **DNV**

This Certificate is valid until **2027-12-31**.

DNV local unit: **Netherlands FIS**

Approval Engineer: **Nicolay Horn**

**Frederik Tore Elter**  
**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 AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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

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

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

## Application/Limitation

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

## Type Approval documentation

### Datasheet:

Manual Mass Charger 24/24 V1 dated November 2010.

### Drawings:

Schematics Mass 1 Charger V5 dated April 2017.

### Test reports:

Kiwa Dare test report no. 20220606.002LBS01 dated 2022-11-17.

"Testreport concerning the compliance of a battery charger, brand Mastervolt with parts of certification notes "environmental test specification for instrumentation and automation equipment"" by TNO, dated 01-06-27,

"Measurements concerning environmental testing of battery charger, model Mass-1 LDR 24/25", by KEMA dated 01-07-07.

Nedap report "Testen Mass 1 24/25" issued 99-10-07, partly repeated 01-10-09.

See also approval letter 262.1-009163-J-13.

## Tests carried out

Low temperature, Dry heat, Vibration, Humidity/ Damp heat in according to IEC 60068-2, EMC in accordance with DNV-CG-0339 August 2021 Class B.

## Marking of product

Mastervolt – charger model no. Mass 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