

# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAE000013Z**  
Revision No:  
**1**

**This is to certify:****That the Battery Charger**

with type designation(s)  
**MASS- 24/50MB, 24/75C, 24/75-120V & 24/100C**

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 :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

<b>Voltage output</b>	<b>24 V DC</b>
<b>Power</b>	<b>up to 3500 VA</b>
<b>Temperature class</b>	<b>A</b>
<b>Vibration class</b>	<b>A</b>
<b>Humidity class</b>	<b>B</b>
<b>Degree of protection</b>	<b>A</b>

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**

Digitally Signed By: **Andreas Kristoffersen**  
Location: DNV GL Høvik, Norway

**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.



Job Id: **262.1-008458-4**  
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## Name and place of manufacturer

Mastervolt International, Amsterdam, Netherlands	-- Confidential information --
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## Product description

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

Type	Input Voltage	Input Current	Output (at 40 °C)	Enclosure
MASS-24/50-2	1 ph 180 - 260 V AC, 50/60 Hz, $\pm 5\%$	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, $\pm 5\%$	11,2 A at 230 V AC	24 V DC / 75 A	IP 23
MASS-24/75-120V	1 ph 180 - 260 V AC, 50/60 Hz, $\pm 5\%$	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, $\pm 5\%$	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 °C for longer period or with restricted ventilation. Derating with 2.5 % / °C > 40 °C.

Applicable for bridge installation in accordance with Class requirements.

## Type Approval documentation

### Datasheet:

Mastervolt User Manual version 2.3 issued February 2014  
Technical details – charger mass 24/100, dated 2003-03-05.

### Drawings:

PCB: Mass 3 /V7.  
PCB: Mass 2 /V2.

### Test reports:

DARE Measurements EMC Test Report ref. no. 12C00157RPT01.(24/100)  
DARE Measurements EMC Test Report ref. no. 15C01712RPT01.(24/50)  
DARE Measurements EMC Test Report ref. no. 17C00651RPT01.(24/75 120V)  
KEMA Environmental Test report for Battery charger, model MASS 3-24/100 no. 2076565-QUA/EMC 04-4743 dated 2004-10-19.

See also approval letter 262.1-008458-J-13

## 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.

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### **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 2 and 3.5 year and at renewal.

END OF CERTIFICATE