USERS MANUAL

Mass Charger Alarm Interface

GMDSS - Global Maritime Distress & Safety System

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CE

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1 GENERAL INFORMATION

1.1 USE OF THIS MANUAL

This manual serves as a guideline for the safe and effective operation, maintenance and possible correction of minor malfunctions of the GMDSS Mass Charger Alarm Interface, in this manual also named as “GMDSS Interface” or “product”

It is therefore obligatory that every person who works on or with the GMDSS Interface must be completely familiar with the contents of this manual, and that he/she carefully follows the instructions contained herein.
Installation of, and work on the GMDSS Interface may be carried out only by qualified, authorised and trained personnel, consistent with the locally applicable standards and taking into consideration the safety guidelines and measures (chapter 2 of this manual).
Keep this manual at a secure place!
The English version has 20 pages.

1.2 VALIDITY OF THIS MANUAL

Copyright © 2011 Mastervolt. All rights reserved.
Reproduction, transfer, distribution or storage of part or all of the contents in this document in any form without the prior written permission of Mastervolt is prohibited.
All of the specifications, provisions and instructions contained in this manual apply solely to standard versions of the GMDSS Interface delivered by Mastervolt.
This manual is only valid for the following models:

Description	Part number
GMDSS Interface incl. top cover C1 enlarged cabinet	21709150*
GMDSS Interface incl. top cover C2	21709200*
GMDSS Interface incl. top cover C3	21709300*
MasterVision GMDSS Interface	70400050
MV GMDSS-Interface panel Front Mounting	70400060

* This version of the GMDSS Interface may be delivered as an integrated part in the casing of a Mass battery charger

For other models see other manuals available on our website: www.mastervolt.com

1.3 GUARANTEE SPECIFICATIONS

Mastervolt guarantees that the product has been built according to the legally applicable standards and specifications. Should work take place, which is not in accordance with the guidelines, instructions and specifications contained in this users manual, then damage may occur and/or the product may not fulfil its specifications. All of these matters may mean that the guarantee becomes invalid.
The guarantee is limited to the costs of repair and/or replacement of the product. Costs for installation labour or shipping of the defective parts are not covered by this guarantee.

1.4 QUALITY

During their production and prior to their delivery, all of our units are tested and inspected. The standard guarantee period is two years after date of purchase.

1.5 LIABILITY

Mastervolt can accept no liability for:

- consequential damage due to use of the GMDSS Interface;
- possible errors in the manuals and the results thereof.

1.6 IDENTIFICATION LABEL

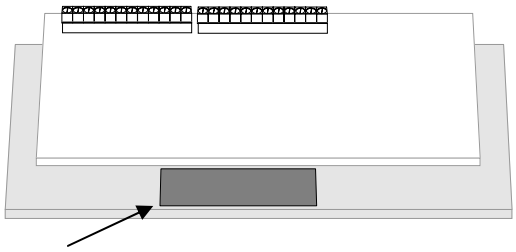

Figure 1: Identification label

The identification label is located on the rear side of the GMDSS Interface (see figure 1) Important technical information required for service, maintenance & secondary delivery of parts can be derived from the identification label.

CAUTION!
Never remove the identification label.

1.7 CHANGES TO THE GMDSS INTERFACE

Changes to the GMDSS Interface may be carried out only after obtaining the written permission of Mastervolt.

2 SAFETY GUIDELINES AND MEASURES

2.1 WARNINGS AND SYMBOLS

Safety instructions and warnings are marked in this manual by the following pictograms:

A procedure, circumstance, etc which deserves extra attention.

CAUTION!
Special data, restrictions and rules with regard to preventing damage.

WARNING
A WARNING refers to possible injury to the user or significant material damage to the charger if the user does not (carefully) follow the procedures.

2.2 USE FOR INTENDED PURPOSE

1 The GMDSS Interface is constructed as per the applicable safety-technical guidelines.

2 Use the GMDSS Interface only:
- In combination with a Mastervolt Mass series battery charger
- in an approved application
- in a technical correct condition;
- in a closed, well-ventilated room, protected against rain, moisture, dust and non condensing circumstances;
- observing the instructions in the user's manual

WARNING
Never use the GMDSS Interface in situations where there is danger of gas or dust explosion or potentially flammable products!

3 Use of the GMDSS Interface other than mentioned in point 2 is not considered to be consistent with the intended purpose. Mastervolt is not liable for any damage resulting from the above.

2.3 ORGANIZATIONAL MEASURES

The user must always:
- have access to the user's manual;
- be familiar with the contents of this manual. This applies in particular to chapter 2, Safety Guidelines and Measures.

2.4 MAINTENANCE & REPAIR

1 If the GMDSS Interface and/or the Mass Battery Charger is switched off during maintenance and/or repair activities, it should be secured against unexpected and unintentional switching on:
- Remove and tag out the fuse(s) from the AC supply or;
- Switch off and tag out the AC circuit breaker;
- Switch off and tag out the connection with the batteries and remove the fuses;
- Take adequate precautions to ensure that third parties cannot reverse the measures taken.

2 If maintenance and repairs are required, use only original spare parts.

2.5 GENERAL SAFETY AND INSTALLATION PRECAUTIONS

- Do not expose the GMDSS Interface to rain, snow, spray, moisture, excessive pollution and condensing circumstances.
- Short circuiting or reversing polarity will lead to serious damage to batteries, GMDSS Interface and the wiring. Fuses between the batteries and the Interface can not prevent damage caused by reversed polarity and the warranty will be void.
- Protect the DC wiring with fuses, according to the guidelines in this manual.
- Connection and protection must be done in accordance with local standards.
- Do not work on the Interface or system if it is still connected to a power source. Only allow changes in your electrical system to be carried out by qualified electricians.
- Check the wiring and connections at least once a year. Defects such as loose connections, burned cables etc. must be corrected immediately.
- Do not touch the equipment when wet or if your hands are clammy.
- To open the cabinet of the Mass Battery Charger, follow the instructions as stated in the user's manual of the battery charger.

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2.6 WARNING REGARDING LIFE SUPPORT APPLICATIONS

Mastervolt products are not sold for applications in any medical equipment intended for use as a component of any life support system unless a specific written agreement pertaining to such intended use is executed between the manufacturer and Mastervolt. Such agreement will require the equipment manufacturer either to contract additional reliability testing of the Interface parts and/or to commit to undertake such testing as a part of the manufacturing process. In addition the manufacturer must agree to indemnify and not hold Mastervolt responsible for any claims arising from the use of the GMDSS Interface parts in the life support equipment.

2.7 WARNING REGARDING THE USE OF BATTERIES.

Excessive battery discharge and/or high charging voltages can cause serious damage to batteries. Do not exceed the recommended limits of discharge level of your batteries. Avoid short circuiting batteries, as this may result in explosion and fire hazard. Installation of the batteries and adjustments of the Battery charger and the GMDSS Interface should only be undertaken by authorised personnel!

3 OPERATION

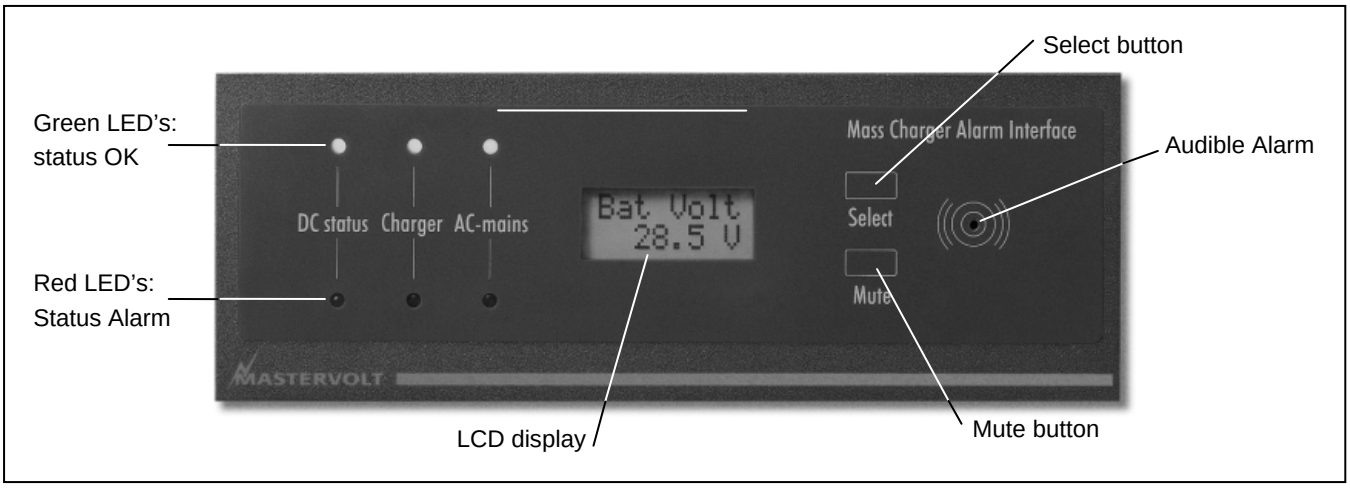

Figure 2: Operation of the GMDSS Interface

3.1 INTRODUCTION

The *GMDSS Interface* is used for monitoring of the accumulator battery and Mass charger of the backup power supply for the radio installations. Battery voltage and current can be made visible by means of an integrated LCD-display and audible failure alarms are set according to the regulations of the I.M.O.

The GMDSS Interface is intended for installations with one battery bank and one Mastervolt Mass series battery charger. If two chargers are required, Mastervolt recommends the installation of two GMDSS interfaces.

The GMDSS Interface contains separate alarm indicators for indication of AC failure, charger failure and low and high battery alarm. The GMDSS Interface is equipped with three potential free change over contacts to make a link to the ship's global alarm system. The GMDSS Interface is standard equipped with an external 5V/50mA unregulated power supply for integration with the ships global alarm system. The GMDSS Interface offers the possibility to power external (LED-) indicators, buzzer and external mute switch (alarm accept) directly.

Other features:

- Display backlight;
- Integrated Status LED indicators for DC voltage alarm, Charger alarm and AC mains alarm;
- Easy programming of battery alarm set points
- Audible alarm function with mute function;
- Three potential-free switch over contacts for DC voltage alarm, Charger alarm and AC mains alarm;
- Test mode function;
- Shunt included in the delivery
- Wide DC-voltage operating range

3.2 STORAGE OF SET POINTS

The charger set points F8 till F12 (see section 3.3.2) are stored into the EEprom memory of the Mass series battery charger. In case off loss of AC or DC power, the GMDSS interface reads back the set points which are stored into the charger. This means that the GMDSS interface will not loose the DC-alarm set points in case AC or DC power failure.

Other set-points like display setting and charge current % are stored into the memory of the GMDSS Interface itself and may get lost in case of DC power failure.

3.3 DISPLAY FUNCTIONS

The actual status and user specific information of the battery system and battery charger is displayed at the LCD display. See figure 2.

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3.3.1 Main Menu

The *Main Menu* offers a quick status overview of the battery system and battery charger. It is immediately accessible by pressing the *Select* button shortly. None of the displayed information can be modified at this menu.

There are two modes to display the measured parameters at the *Main Menu*:

- *Standard menu*. If this mode is chosen, all below mentioned screens will be shown, except the screen marked with *. (Install menu, F2 = OFF)
- *Short menu*. If this mode is chosen, the screens which are marked with ** will not be shown. (Install menu, F2 = ON)

The desired mode can be selected at the Install menu, function F2 (see section 3.3.2).

If the GMDSS Interface is adjusted to the *Standard menu*, and function *F1: Scroll main menu* is set to ON, scrolling through the *Main Menu* is done automatically. If the function *F1: Scroll main menu* is set to OFF, you can scroll through the *Main Menu* by touching the *Select* button shortly.

```
M 24/25
Bulk
```

Status charger
Shows the model of the connected Mass series battery charger and the actual charge stage of the Three Stage Charge algorithm.

```
 26.4V
024.0A
```

Voltage and charge current*
Shows the actual battery voltage (Volt) and the charge current (Amps).

```
CHG CUR.
089%
```

Charge current**
Shows the actual charge current (%) as percentage of the nominal charge current.

```
BAT VOLT
26.4V
```

Battery voltage **
Shows the actual battery voltage (Volt).

```
BAT CUR.
024.0A
```

Battery current**
Shows the actual charge current (Amps).

3.3.2 Install menu

The Install menu is used to adjust the *GMDSS-Interface* in accordance with the electrical installation.

To enter the *Install Menu*, hold the *Select* button pressed for at least 1 second.
To leave the *Install Menu* wait 20 seconds or scroll to RETURN and hold the *Select* button pressed until you return to the *Main Menu*.

Touch the *Select* button shortly to scroll through the functions as described below.

If a value can be adjusted, the display shows an arrow. When the arrow is pointing downwards (↓) the displayed value can be decreased by pressing the *Mute* button shortly. If the arrow is pointing upwards (↑) the value can be increased.
To change the direction of this arrow, hold the *Select* button pressed until the pointing direction of the arrow changes.

To protect the *GMDSS-Interface* against unintended adjustment of set points, the *Lock all settings* function is activated every time you enter the *Install menu*. When activated ("ON"), the settings mentioned in this chapter cannot be changed. See *F0 Lock all settings* to unlock.

F0: Lock all settings
To unlock the settings of the GMDSS Interface, hold the Select button pressed until this function switches to OFF.
Factory setting: ON
Adjustable range: ON/OFF

F1: Scroll main menu
If this function is set to ON, scrolling through the *Main Menu* is done automatically. If set to OFF, you can scroll through the *Main Menu* manually by touching the *Select* button.
Factory setting: ON
Adjustable range: ON/OFF

F2: Main menu short
If this function is set to OFF, all screens mentioned in section 3.3.1 will be shown, except screen marked with *. If set to ON, screens marked with ** will not be shown.
Factory setting: OFF
Adjustable range: ON/OFF

F3: Scroll text
When set to ON, the entire text of the function is displayed at the *Install menu*. When set to OFF, only the function number is displayed.
Example for the Back light function.
If *F3: Scroll text* set to OFF, “F7” will be displayed. If this function is set to ON “F7: Back light” will be displayed.
Factory setting: OFF
Adjustable range: ON/OFF

F4: Buzzer active
Press the *Mute* button shortly to toggle the operation of the Audible alarm.
Factory setting: ON
Adjustable range: ON/OFF

F5: Prelow Alarm
To enable the Pre-low alarm function, this setting must be switched to ON. See *F13: Prelow Alarm 0…10%* for details
Factory setting: ON
Adjustable range: ON/OFF

F6: Software Version
This function shows the installed software version of the GMDSS Interface; this value cannot be changed.

F7: Back light
If Backlight is set to *Auto*, the backlight of the display will switch off automatically if the buttons are not touched for 10 seconds. As soon as one of the buttons is touched, the display’s backlight and the LED-bar will be lit again for an easy reading of the display.
Press the *Mute* button shortly to toggle this function.
Factory setting: Auto
Adjustable range: ON/OFF/Auto

F8: Low Battery Alarm ON
If the battery voltage drops below this value, the alarm function will be activated after the “Alarm Delay” time has elapsed; see F12.
Factory setting: 10.0V/20.0V depending on the nominal battery voltage
Adjustable range:8.0…18.0V/18.0…36.0V

F9: Low Battery Alarm OFF
When the battery voltage rises above this level after a Low Battery Alarm, the alarm function will be deactivated again.
Factory setting: 11.0V/22.0V depending on the nominal battery voltage
Adjustable range:8.0…18.0V/18.0…36.0V

F10: High Battery Alarm ON
When the battery voltage rises above this level, the alarm function will be activated without delay.
Factory setting: 16.0V/32.0V depending on the nominal battery voltage
Adjustable range:8.0…18.0V/18.0…36.0V

F11: High Battery Alarm OFF
When the battery voltage drops below this level after a High Battery Alarm, the alarm function will be deactivated again.
Factory setting: 15.5V/31.0V depending on the nominal battery voltage
Adjustable range:8.0…18.0V/18.0…36.0V

F12: Alarm delay Low Battery
The “alarm delay time” can be set to delay the alarm function when the DC-voltage drops below the Low Battery Alarm On set point (F8). This delay is to prevent a false alarm as a result of a temporary voltage drop, because of switching on a heavy load.
Factory setting: 30 seconds
Adjustable range: 3…60 seconds

F13: Prelow Alarm 0…10%
The “Pre-low alarm level” marks the voltage below which the audible alarm is activated. This function can serve as a pre-warning before the battery voltage drops below the Low Battery Alarm ON level (Function F8) which will result in a DC-status alarm. Note that this threshold value is always above the Low Battery Alarm ON level (F8).
Factory setting: 5% above the Low Battery Alarm On level
Adjustable range:0…10%

F14: Charger current control
The Maximum charge current is set by default at the maximum charge current of the Mass series battery charger. Here you can adjust the maximum charge current
Factory setting: 100% of the maximum charge current.
Adjustable range: 20…100%

F15: Charger in force float
By default, the Mass series battery charger will charge the battery following a three stage charge program. For special applications, the battery charger allows you to change the three stage charge program to a single stage charging program by activating the function "Charger in force float” Refer to the User’s manual of the battery charger for details.
Factory setting: OFF
Adjustable range: ON/OFF

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F16: Restore charger and GMDSS to factory settings
Hold the *Mute* button pressed for three seconds to restore the factory settings

F17: Test alarm
With this function you can check the correct operation of each alarm function and to test the audible alarm. Press the *Mute* button to simulate below mentioned alarm functions step by step.
0 = Test mode disabled (factory setting)
1 = Test Audible alarm
2 = Test DC voltage alarm,
3 = Test Charger alarm
4 = Test AC mains alarm

F18: LCD Contrast
To adjust the contrast of the display, press the *Mute* button.

RETURN
If you want to exit the Install menu to return to the *Main Menu,* hold the *Select* button pressed until you return. Else press the *Select* button shortly to return to *F0: Lock all setting*

3.4 ALARMS

See also section 4.5 for battery charger settings.

3.4.1 Alarms handling

If one of the below mentioned alarm functions is triggered, the audible alarm will be activated and the corresponding relay contact will be activated. The origin of the alarm is made visible by means of the status LED's.

DC Status.
The battery voltage is out of range. Possible causes:
- Battery voltage is below the Low Battery Alarm On level (F8)
- Battery voltage is above the High Battery Alarm On level (F10)

Charger
The battery charger is not working properly. Possible causes:
- Battery sense error
- Charger temperature too high
- Short circuit at the DC-output of the battery charger
- Temperature sense error
- Communication cable between battery charger and GMDSS Interface not connected

AC Mains
An AC Mains alarm may indicate:
- No AC present at the AC input of the battery charger.
- Battery charger is switched off by means of the ON/OFF switch on the battery charger

3.4.2 Mute the audible alarm

The audible alarm is muted by pressing the mute button. A new event will reactivate the alarm sound. The display will show the alarm status.

3.5 MAINTENANCE

For a reliable and optimum function of the GMDSS Interface, the following is required:

- Check at least once a year if all cable and wire connections are still firmly connected.

3.6 PROBLEM SOLVING

Refer to section 5 if a problem occurs

4 INSTALLATION AND COMMISSIONING

WARNING
During installation and commissioning of the GMDSS Interface, the Safety Guidelines & Measures are applicable at all times. See chapter 2 of this manual.

4.1 THINGS YOU NEED

Make sure you have all the parts you need to install the GMDSS Interface:

Materials:

- ☑ The GMDSS Interface (included);
- ☑ A 500Amp/50mV shunt (included) for the current measurement of the battery bank;
- ☐ A 6-wire modular communications cable (RJ12, cross wired) to connect the GMDSS-interface to the Mass series battery charger;
- ☐ 2x0.25mm² twisted pair wire, long enough to reach from the shunt to the GMDSS Interface;
- ☐ Wires 0.25mm² for voltage sensing of the battery bank and for the DC power supply of the GMDSS Interface
- ☐ Fuse holders with 2 A-T fuses to be integrated in the voltage sensing lines and the DC power supply;
- ☐ As short as possible heavy duty battery cable, finished with cable lugs, to run from the minus pole of the battery to the shunt. Cable thickness must be in accordance with the electrical installation. Refer to the installation manual of the Mass Battery charger for recommendations on DC-wiring;

We recommend as a minimum tool kit:

- ☐ A saw to make a cut-out in the instrument panel (part nos. 70400050 and 70400060 only);
- ☐ A wire cutter / stripper;
- ☐ A crimping tool for cable terminals;
- ☐ A cross-head screw driver;
- ☐ 2 mm and 5 mm flat blade screwdrivers.

A complete set of spanners, pliers and wrenches may be helpful during the installation of the GMDSS Interface

4.2 DIRECTIONS FOR INSTALLATION

Obey the following stipulations during installation:

- The GMDSS-Interface is designed for indoor use only;
- Ambient temperature: 0 … 60°C / 32°F … 140°F;
- Humidity: 0-95% non condensing;
- The GMDSS Interface can be mounted into the enclosure of the Mastervolt Mass series battery charger or as remote panel (refer to specifications for ordering information);
- Do not install the GMDSS Interface straight above the batteries because of possible corrosive sulphur fumes;
- According to the regulations for GMDSS systems the panel must be installed at a position which is visible from where the ship is normally navigated;
- For good visibility avoid installing the GMDSS Interface in direct sunlight;
- The audible alarm and LED indicators, voltage and current meters can be powered by an independent DC power supply with operating voltage ranging from 8 to 32 VDC;
- Keep all wires as short as possible;
- Keep the voltage and current sensing wiring away from other noise producing conductors;
- Take adequate measures to avoid corrosion of the wires and connections.

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4.3 CONNECTION

WARNING
Disconnect the electrical power:
- Switch off all consumers;
- Switch off all charging systems;
- Remove all battery fuses;
- Check with a suitable voltmeter whether the entire DC installation is voltage free.

1 Depending on the model of the GMDSS Interface:
- Make 168 x 53 mm cut out in the instrumentation panel, or
- Integrate the GMDSS Interface in your Mastervision panel, or
- Replace the existing the front cover plate of the battery charger by the GMDSS Interface

2 Install the shunt of the GMDSS Interface as close as possible to the battery bank.

3 Disconnect the wiring from the negative battery pole.

4 See figure 4. Place the shunt between the negative wires and the negative battery pole using the heavy duty battery cable.

Do not exchange the DC wiring of the load side with the battery side.

5 Run the 6 pole modular communication cable between the battery charger and the GMDSS Interface.

6 Insert the RJ12 connector into modular socket at the rear side of the GMDSS Panel.

7 Insert the RJ12 connector on the other side of the communication cable into the RS232 port inside the connection compartment of the Mass series battery charger. Refer to the user's manual of the Mass battery charger, section "Connection of accessories" for details.

8 Connect the other wiring of the GMDSS Interface as indicated in figure 4 but do not place the fuses yet!

Do not exchange the twisted wires: the load side must be connected to terminal 5, the battery side must be connected to terminal 6.

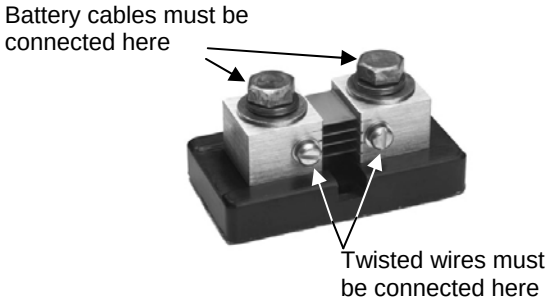
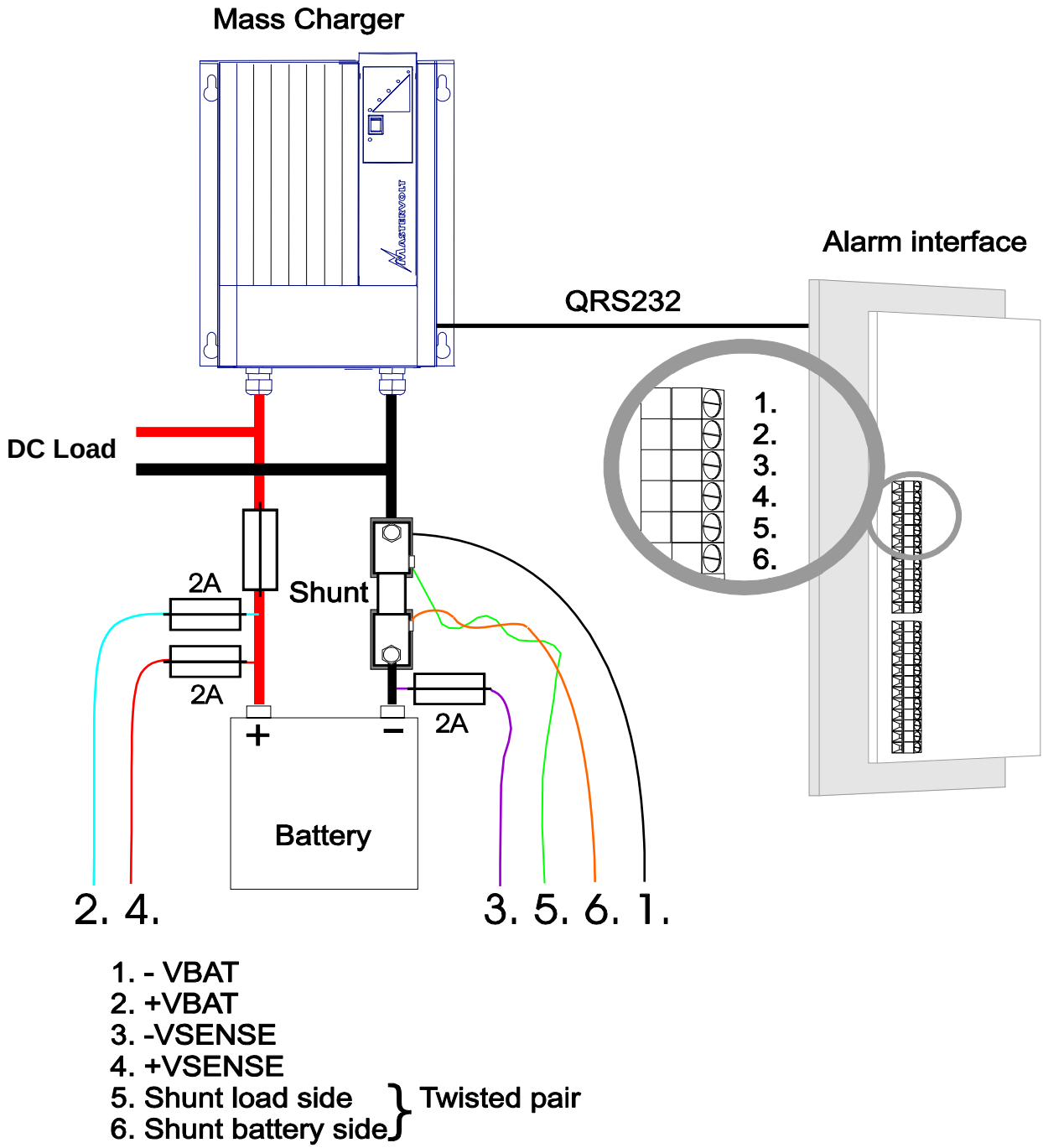


Figure 3: Shunt connections.

9 Option: Connect the wiring of the auxiliary components such as potential free relay contacts. Refer to section 6.1.

4.4 INSTALLATION DRAWING



This schematic is to illustrate the general placement of the GMDSS Interface in a circuit. It is not meant to provide detailed wiring instructions for any particular electrical installation.

Figure 4: Installation drawing of the GMDSS Interface

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4.5 SETTINGS ON THE BATTERY CHARGER

To communicate correctly with the GMDSS interface, the continuous monitoring mode should be enabled on the Mass series battery charger:

To do so, DIP-switches 1 + 2 of the Mass battery charger must be adjusted to the ON position

Please note that when the Continuous monitoring mode is enabled, the micro processor in the battery charger will stay active and drain a very small current of ±25mA when the charger has no AC supply

If the continuous monitoring mode is not enabled, the GMDSS Interface may show incorrect alarms!

Refer to the user's manual of the Mass battery charger for details about adjustment of the DIP switches. Adjust the DIP-switches prior to commissioning of the battery charger!

CAUTION!
Invalid settings of the Mass Charger can cause serious damage to your batteries and/or the connected load! Adjustments of settings may be undertaken by authorised personnel only.

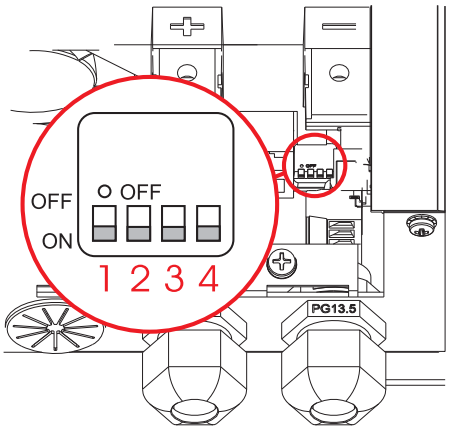

Figure 5: Location of the DIP-switches at battery charger model Mass 24/25-2 (DNV)

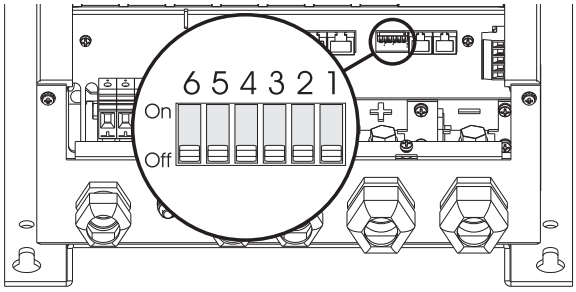

Figure 6: Location of the DIP-switches at battery charger models Mass 12/60-2, Mass 12/80-2 and Mass 24/50-2

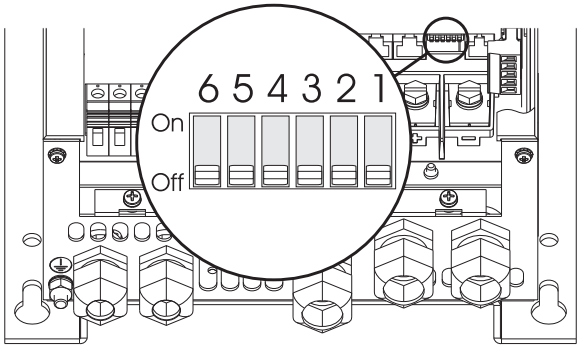

Figure 7: Location of the DIP-switches at battery charger models Mass 24/75 and Mass 24/100

4.6 COMMISSIONING

CAUTION!
Check the polarity of all wiring before commissioning: plus connected to plus (red cables), minus connected to minus (black cables)

Follow the steps described below to switch on the GMDSS Interface.

Mount this assembly into the instrumentation panel

1 Tighten all cable glands of the battery charger to ensure the pull relief
2 Check all wiring and connections
3 Close the front cover plate of the battery charger. Beware that the wiring does not obstruct the cooling fans and air flow.
4 If all wiring is OK, place the DC-fuse(s) to connect the Interface to the DC power supply
5 The GMDSS Interface will switch on: an audible alarm can be heard, all LED's will illuminate for a few seconds and a welcome message is shown on the display.
6 If required, go to the *Install menu* to adjust the *GMDSS-Interface* in accordance with the electrical installation (refer to section 3.3.2)
7 Test the alarm functions of the GMDSS Interface; see function F17 of the *Install menu* (refer to section 3.3.2)

Now the GMDSS Interface is ready for operation.

4.7 DECOMMISSIONING

If it is necessary to put the GMDSS Interface out of operation, follow the instructions in order of succession as described below:

1 Switch off the battery charger
2 Remove the DC-fuse(s) of the DC-distribution and/or disconnect the batteries.
3 Remove the fuses from the DC power supply and the voltage sensing wires
4 Check with a suitable voltage meter whether the inputs and the outputs of the GMDSS Interface are voltage free.
5 Disconnect all the wiring

Now the GMDSS Interface can be demounted in a safe way.

4.8 STORAGE AND TRANSPORTATION

When not installed, store the Interface in the original packing, in a dry and dust free environment.

Always use the original packing for transportation. Contact your local Mastervolt Service Centre for further details if you want to return the apparatus for repair.

4.9 RE-INSTALLATION

To reinstall the GMDSS Interface, follow the instructions as described in this chapter (chapter 4).

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5 TROUBLE SHOOTING

If you cannot solve a problem with the aid of this table, contact your local Mastervolt Service Centre. See www.mastervolt.com. Make sure you have the Article and serial number (see section 1.6) as well as the Software version (see section 3.3.2) of the GMDSS-Interface present if you have to contact your local Mastervolt Service Centre to solve a problem.

Malfunction	Possible cause	What to do
No display function	Error in the wiring	Check wiring for errors especially the DC power supply (section 4.3, step 8)
No current measurement	Error in the wiring	Check wiring for errors especially the twisted wires between the shunt and the panel (section 4.3, step 8)
	No load connected or batteries are full.	Check the load.
Current measurement not accurate	Part of the load or charger is connected at the battery side of the shunt	Check whether all connections to the negative pole are connected at the load side of the shunt (section 4.3, step 4)
	Distortion on the shunt wiring	Replace wiring by twisted pair cable between the shunt and the panel (section 4.3, step 8). Keep this wiring away from other nois producing conductors!
	Corrosion on the shunt wiring	Replace wiring Take adequate measures to avoid corrosion of the wires and connections!
Voltage reading shows 0,00	Error in the wiring	Check wiring for errors especially the voltage sense wires (section 4.3, step 8)
	Fuse (2A) blown	Investigate the cause of the blown fuse. Then replace the fuse
	Battery voltage less than 8 Volt	Charge the battery
	Batteries have been left standing without being used for a longer period	Recharge the batteries up to 100%.
Parameter settings can not be changed at the install menu	Adjustment of settings is locked every time you enter the install menu.	Unlock the settings of the GMDSS Interface (see section 3.3.2, F0)
Back light and LED-bar switch off after 10 seconds	Setting for Backlight set to OFF	Press one of the buttons or refer to section 3.3.2, F7 to change the backlight settings.
The GMDSS Interface shows incorrect alarms	Wrong setting of the parameters	See section 3.3.2, F8 till F12 for the correct setting of the parameters.
	Wrong connection of relay contact	Connect the external relay to the correct terminals (see section 6.1)
	Communication between the GMDSS-panel and the Battery charger was interrupted	Enable the Continuous monitoring mode on the battery charger to keep alive the communication between the GMDSS-panel and the Battery charger (see section 4.5).
Alarm function is triggered by a short time voltage dip	Wrong setting of the alarm delay time.	Increase the delay time (see section 3.3.2, F12)
Audible alarm is not activated when an Alarm occurs.	Buzzer function deactivated.	Switch on buzzer function (see section 3.3.2, F4)

6 TECHNICAL DATA

6.1 WIRING DETAILS GMDSS INTERFACE

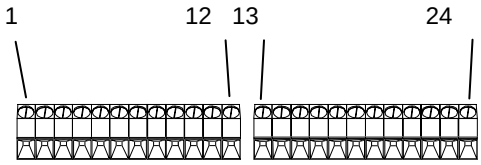

Figure 8: overview of the terminals

Terminal	Designation	Description
1	– SUPPLY	DC Power Supply input, 8-32 V DC
2	+ SUPPLY	
3	– VSENSE	Voltage Measurement 0..62V DC
4	+ VSENSE	
5	LOAD SHUNT	Current measurement 500A / 50mV
6	BAT SHUNT	
7	GND FAILURE REMOTE	Common GND for terminals 8 to 12
8	DC- FAILURE REMOTE	+5V / max 50mA output, active in case of DC Status alarm
9	CH- FAILURE REMOTE	+5V / max 50mA output, active in case of Charger alarm
10	AC FAILURE REMOTE	+5V / max 50mA output, active in case of AC Mains
11	RST FAILURE REMOTE	Input external mute button
12	+BZ FAILURE REMOTE	+5V output for external mute button
13	NO - DC ALARM	This contact is closed to *C - DC ALARM* (terminal 14) when the DC is in range (status: OK)
14	C - DC ALARM C	Common
15	NC - DC ALARM	This contact is closed to *C - DC ALARM* (terminal 14) when the DC is out of range (status: Alarm)
16	NO – CHARGE ALARM	This contact is closed to *C – Charger* (terminal 17) when the battery charger is working properly (status: OK)
17	C - CHARGE ALARM	Common
18	NC - CHARGE ALARM	This contact is closed to *C – Charger* (terminal 17) when the battery charger is not working properly (status: Alarm)
19	NO - AC ALARM	This contact is closed to *C – AC mains* (terminal 20) when the AC voltage is in range (status: OK)
20	C - AC ALARM	Common
21	NC - AC ALARM	This contact is closed to *C – AC mains* (terminal 20) when the AC voltage is out of range (status: Alarm)
22	X - NA	Not connected
23	EXT – 5V. /50mA	GND Aux. Power supply
24	EXT + 5V. /50mA	+5V / max 50mA output Aux. Power supply (short circuit protected)
RJ12	Mass Charger QRS 232	QRS. 232 communication to Mass Charger, 6 pole, RJ12, cross wired

See section 3.4 for an overview of conditions for the alarm functions

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6.2 TECHNICAL SPECIFICATIONS

Type:	**Mass Charger Alarm Interface - GMDSS Interface**			
Model	**MasterVision**	**C1-enlarged cabinet**	**C2**	**C3**
Article number	**70400050**	**21709150**	**21709200**	**21709300**
Fits in Battery charger:	n/a (flush mounted panel)	Mass 24/25-2 DNV	Mass 12/60-2 Mass 12/80-2 Mass 24/50-2	Mass 24/75, Mass 24/100
Panel Dimensions (w x h x d)	180 x 65 x 40 mm Cut-out: 168 x 53 mm	To be integrated in the battery charger	To be integrated in the battery charger	To be integrated in the battery charger
Dimensions shunt	84 x 44 x 44 mm - M8	84 x 44 x 44 mm - M8	84 x 44 x 44 mm - M8	84 x 44 x 44 mm - M8
Weight	400 gr (excl. shunt) 1000 gr (incl. shunt)	500 gr (excl. shunt); 1100 gr (incl. shunt)	500 gr (excl. shunt); 1100 gr (incl. shunt)	500 gr (excl. shunt); 1100 gr (incl. shunt)
Delivery includes:	Interface, shunt, user's manual			
Function of instrument	Monitoring of the status of the battery and battery charger (12/24V DC)			
Manufacturer	Mastervolt, Amsterdam, the Netherlands			
Number of battery sets	1			
Voltage Measurement	0 – 62.7V DC (0.1V resolution); a 12V or 24V system is detected automatically.			
Voltage accuracy	± 0.2V @ 12V, ± 0.4V @ 24V			
Current Measurement	- 500 … 500 Amp			
Current accuracy	± 2A (<45A), ± 4A (>45A)			
Readout	LCD display and status LED's for DC voltage alarm, Charger alarm and AC mains alarm			
Supply voltage	8-32 V DC			
Supply current	110mA(@12V) / 65mA(@24V), Normal operation mode without activated relays			
Safe compass distance	Standard 1 meter; Steering: 0.3mm			
Shunt	500 Amp / 50 mV (included with the delivery)			
Alarm contacts	Potential-free switch over contacts for DC voltage alarm, Charger alarm and AC mains alarm, Maximum switching current: 1 Amp			

6.3 ORDERING INFORMATION

Part number	**Description**
39019052	Single shunt 500A/50mV*
6801601100	Cable 3x2x0.25 mm² twisted stranded wires (per meter)
6801601200	Cable 4x2x0.25 mm² twisted stranded wires (per meter)
6801601300	Cable 5x2x0.25 mm² twisted stranded wires (per meter)
6502001030	Modular RJ 12/ cross wired communication cable (6 m. / 19 ft.)
6502100100	Modular RJ 12/ cross wired communication cable (10 m. / 33 ft.)
6502100150	Modular RJ 12/ cross wired communication cable (15 m. / 48 ft.)

* These parts are standard included with the delivery of the GMDSS Interface

Mastervolt can offer a wide range of products for your electrical installation, including AGM batteries, GEL batteries, DC distribution kits, battery switches, battery cables, battery terminals and Mastervision switchboards
See our website www.mastervolt.com for an extensive overview of all our products

7 EC DECLARATION OF CONFORMITY

We,

Manufacturer	Mastervolt
Address	Snijdersbergweg 93 1105 AN Amsterdam The Netherlands

Declare under our sole responsibility that
Product:

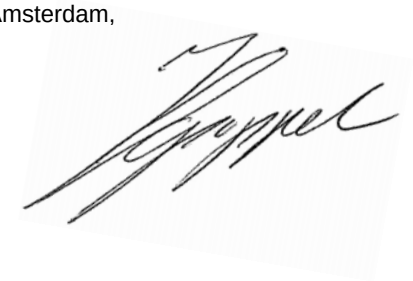
21709150*	GMDSS Interface incl. top cover C1 enlarged cabinet
21709200*	GMDSS Interface incl. top cover C2
21709300*	GMDSS Interface incl. top cover C3
70400050	MasterVision GMDSS Interface
70400060	MV GMDSS-Interface panel Front Mounting

Is in conformity with the provisions of the following EC directives:

- 2004/108/EC (EMC directive); the following harmonized standards have been applied:
  - EN 61000-6-3: 2007 Emission household equipment
  - EN 61000-6-2: 2007 Immunity industrial

- 2006/95/EC (Safety directive); the following harmonized standard has been applied:
  - EN 60950-1:2001+ A11:2004 (Low voltage standard)

Amsterdam,



H.A. Poppelier
Product Manager Marine & Mobile
Mastervolt

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NOTES

MASTERVOLT

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