Afficheur intégré
Integrated display

Afficheur déporté
Remote display

Manuel utilisateur de l'afficheur tactile couleur
User manual for Tactile colour display

HPO BATTERY CHARGERS

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CONTENTS

1 INTRODUCTION

This document applies to the HPOWER Remote Display compatible with battery chargers from the HPOWER range as well as the display integrated to the HPOWER range. This document is available on our website www.cristec.fr. **Refer to sections 5 to 8 only for integrated display.**

The manual is intended for users, installers and equipment maintenance staff. Please read this manual carefully before working on the Remote display.

This manual should be kept safely and consulted before attempting any repairs because it contains all the information required to use the appliance.

This document is the property of CRISTEC; all the information it contains applies to the accompanying product. CRISTEC reserves the right to modify the specifications without notice.

2 PRECAUTIONS – WARRANTY

The CRISTEC equipment includes the following :

- A box containing the Remote Display
- A 7 meters cable, two 3-pole connectors and six crimp wire terminals
- This user manual
- Specific packaging

2.1 PRECAUTIONS (WARNING) – PROVISIONS RELATING TO SAFETY

The requirements for installation are contained in the NFC 15-100 standards and in the specific standard “for pleasure boats – electrical systems – Extra-low-voltage d.c. installations” ISO10133 reference.

The installation must be carried out by an electrician or a professional installer.

The DC network must be disconnected before starting any maintenance work on the equipment.

This equipment is not intended to be used by children.

Main precaution

Before handling the Remote Display, please read carefully this manual.

Precautions regarding dust, seepage and falling water

The Remote Display should be located so as to prevent penetration of damp, liquid, salt and dust, any of which could cause irreparable damage to the equipment.

The appliance should be installed in a dry and well-ventilated place.

Never attempt to drill or to machine the case of the Remote Display : this may damage components or cause metal chips or filings to fall on the Remote Display board.

Do not do anything that is not explicitly stated in this manual.

2.2 WARRANTY

CRISTEC waives all liability if the installation rules and instructions for use are not observed.

The warranty is valid for 24 months. It covers parts and labour for equipment returned to the Quimper plant (France). Only original parts recognized as being defective will be replaced under the warranty.

Our warranty does not cover :

1. Failure to abide by this manual
2. Any mechanical, electrical or electronic alterations to the appliance
3. Improper use
4. Presence of moisture
5. Failure to comply with DC power-supply tolerances (i.e. overvoltage)
6. Incorrect connections
7. Falls or impacts during transportation, installation or use
8. Repairs carried out by anyone unauthorized by CRISTEC
9. The maintenance made by a non-authorized person by CRISTEC
10. Connection of any interface not supplied by CRISTEC
11. The cost of packaging and carriage
12. Apparent or latent damage sustained during shipment and/or handling (any such claims should be sent to the haulier)

Our warranty on no account provides for any form of compensation. CRISTEC shall not be held liable for damage incurred as a result of using the Remote Display.

3 OPERATING-PRESENTATION-INTERFACES

3.1 OPERATING PRINCIPLE

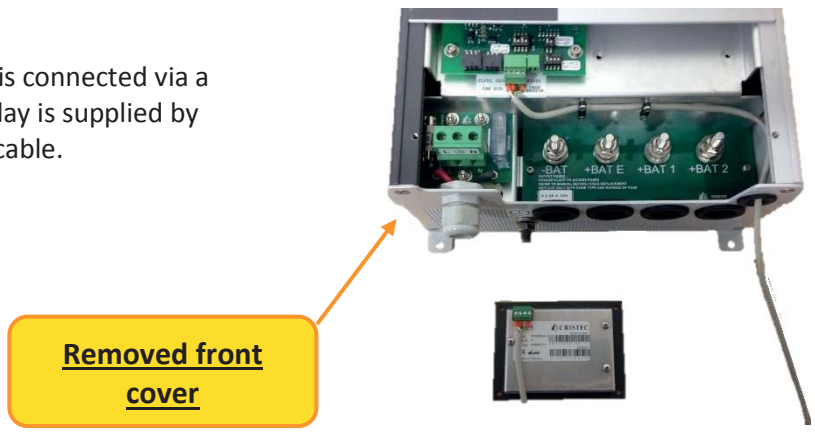
The Remote Display is designed to offer all available information about the charging process while the charger is running. It is possible to use an external power supply in order to supervise batteries when AC network is off.

If a battery is employed to power the display externally in order to supervise batteries when AC network is off:

In case this battery remains uncharged during min. 4 weeks (wintering), please disconnect the battery in order to avoid discharging due to continuous consumption.

3.2 OVERVIEW PRESENTATION

The full colour touch screen Remote Display is connected via a 3 pole cable to the battery charger. The Display is supplied by the battery charger through the connection cable.



4 INSTALLATION

This paragraph deals with installation of the equipment.

Installation and initial commissioning should be carried out by an electrician or professional installer in accordance with the standards currently in force (for pleasure boats the applicable international standard is ISO10133).

a. Remove the front cover

b. Open the rubber grommet and pass the wire through the opening

c. Secure the cable with the strain relief clamps

4.1 WIRING – SEE APPENDIX

Make sure the battery charger is disconnected from AC mains and DC outlet is disconnected before you plug the interface board.

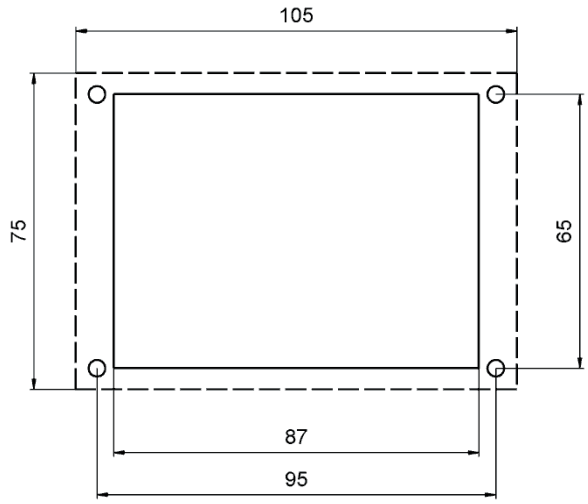
The Remote Display shall be connected to the interface board via a 3 pole cable. The cable can be shortened or you can use a cable up to 15m. The 3 pole cable provides the power supply of the monitor as well as LIN-Bus communication.
When assembling the connectors to the wires, please use the pigtails and the 3 pole cable which is part of the delivery.
Both LIN Terminals are connected in parallel, so only one has to be used. The second one is dedicated for further applications.

-	+	L	L

X1200
LIN
BUS

4.2 DISPLAY MONITOR

Place the monitor on a dry place where it is easily accessible. The minimum cut-out is 87 x 65 mm
On the top side, a Micro SD-card can be inserted to update the firmware if necessary.



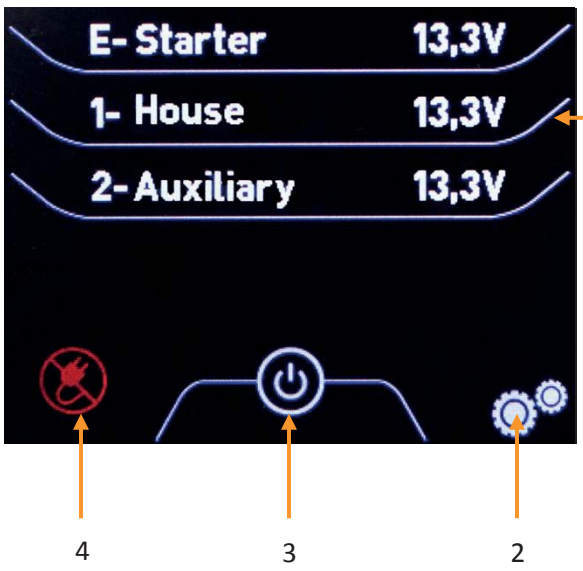
5 OPERATION

5.1 OVERVIEW

Brightness can be switched between NIGHT and DAY modes by pressing the centre part of the screen.
The brightness of DAY-mode can be adjusted in the setup while NIGHT-mode is fixed.

5.2 AC NETWORK OFF

The battery charger is off and the battery voltages can be read.
Charger's output is unavailable in this mode, so the ON/OFF charger output press-button [3] is neutral.

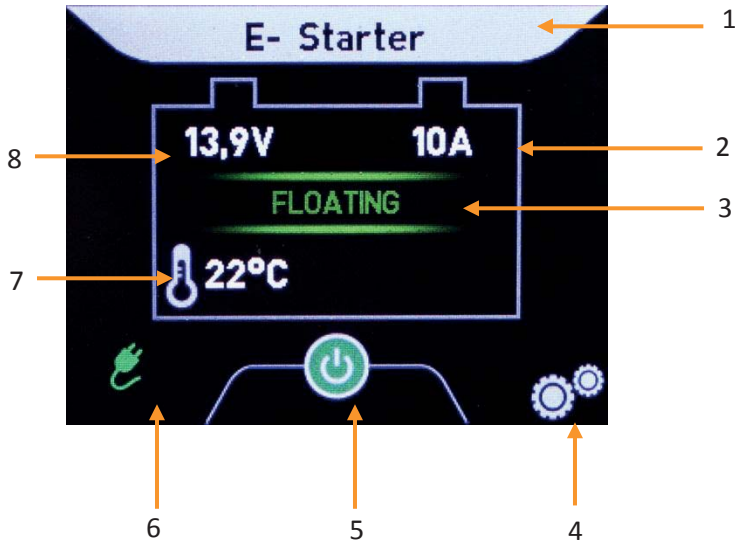


1 : Battery voltages
2 : Access to parameters
3 : ON/OFF charger output
4 : AC network status

5.3 AC NETWORK ON

5.3.1 Main page

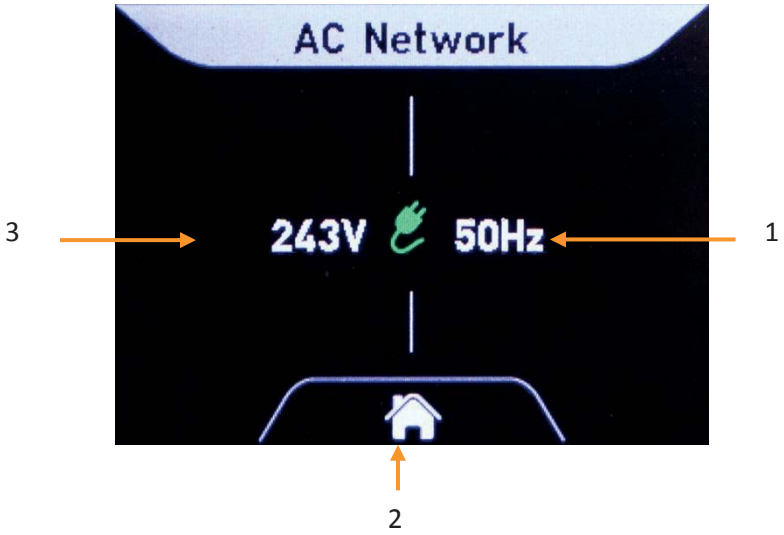
The battery charger starts up automatically when AC network is present.
Consequently, the display shifts to the main page shown below. It is possible to display channel E, 1 and 2 voltages by pressing [1].



1 : Battery channel and name
2 : Total charger's output current
3 : Charge status
4 : Access to parameters
5 : ON/OFF charger output
6 : AC network status
7 : Battery pack temperature (if probe connected)
8 : Battery channel voltage

5.3.2 AC Network page

AC Network voltage and frequency are available by pressing AC network status [6] onto main page.

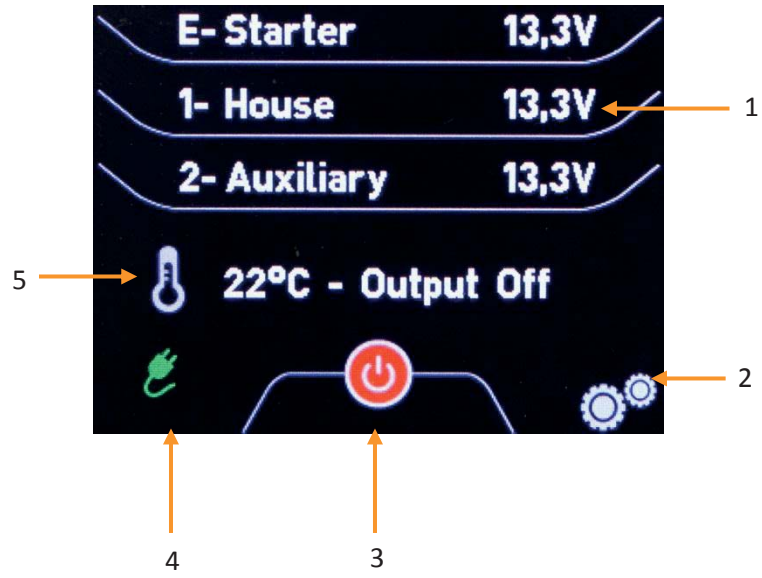


1 : AC Network frequency in Hertz
2 : Home (return to main page)
3 : AC Network voltage in Vac

Voltage waveform distortions caused by harmonics can impact the measurement.

5.3.3 ON/OFF charger output

Charger output can be switched ON and OFF by pressing ON/OFF charger output [3] onto main page.
In OFF mode, output current is 0A and therefore all battery voltages can be read.
AC Network voltage and frequency are available by pressing [4].
Press [3] to switch on the charger's output.

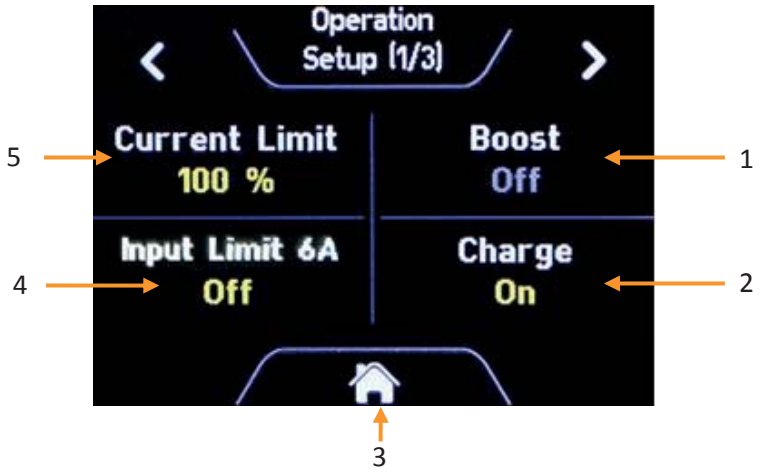


1 : Battery voltages
2 : Access to parameters
3 : ON/OFF charger output
4 : AC network status
5 : Battery pack temperature (if probe connected)

5.4 OPERATION SETUP (MENU)

Setup → Operation

By pressing the parameter access button [2] onto main page and next the OPERATION button, you can control all the main functions of the charger.



1 : Boost ON/OFF (see 4.4.1)
2 : ON/OFF charger output
3 : Home (return to main page)
4 : Input current limit (see 4.4.3)
5 : Current limit (see 4.4.4)

5.4.1 ON/OFF Boost

Setup →Operation → Boost

The BOOST function enables a faster charge of the batteries. This function is timed controlled and is automatically switched off when the battery is fully charged : BOOST stops when batteries current < 20% of charger rated current. BOOST function can also be disabled by either a DIP switch **(E)** inside the battery charger or the BOOST press-button into Operation menu.

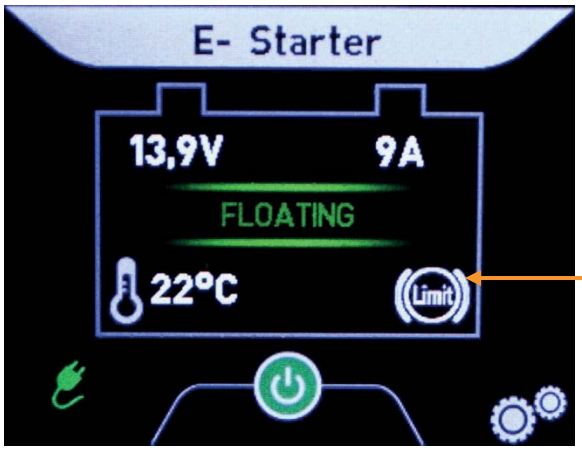
5.4.2 ON/OFF charger output

Setup →Operation → Charge

Indication if charge is ON or OFF

5.4.3 Input current 6A

Setup →Operation → Input current 6A



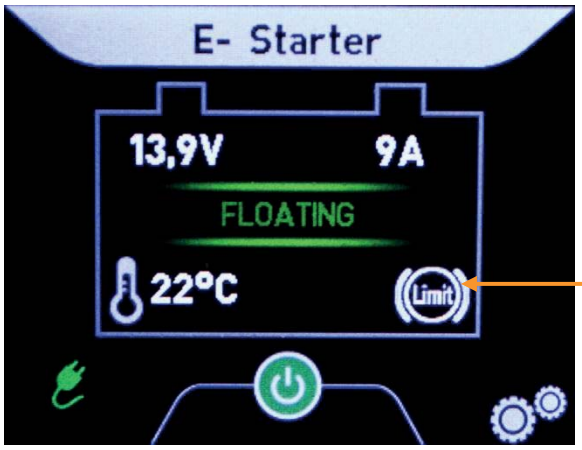
At 230Vac ±15% input, this mode limits the charger's output power in order to ensure the input current us below 6A. This may prevent the circuit breaker from tripping.

1 : Input current limit under operation

5.4.4 Current limit

Setup →Operation → Current limit

The remote display has the ability to limit the total output battery charger current from 100% to 30% rated output current. When activated, this limits runs during 8 hours before coming back to rated value.



This function enables the user :

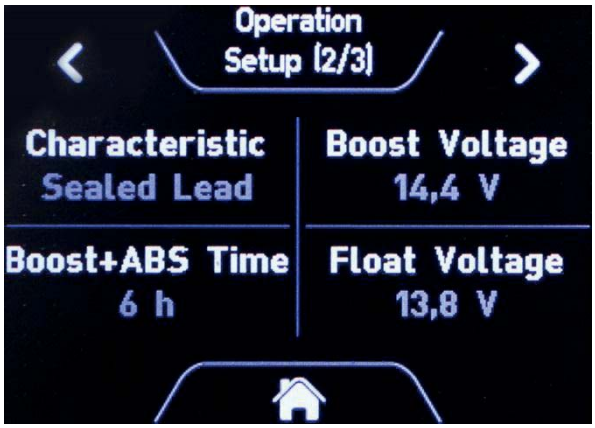
- To lower the charge current if required ;
- To control the input power consumption of the battery charger in case of dips or overcurrent nuisance tripping on AC network due to an excessive consumption on the boat overall electrical network.

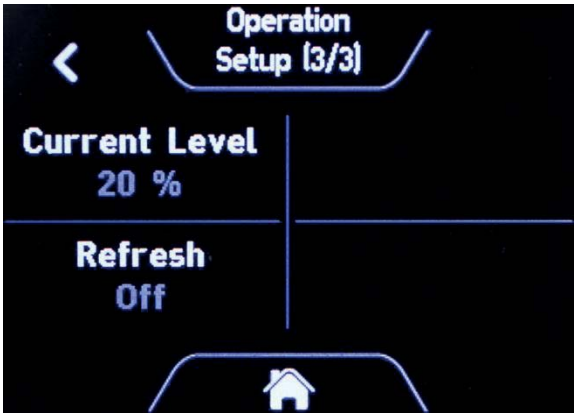
1 : Current limit under operation

5.4.5 Characteristic

Setup →Operation → Characteristic

The HPOWER chargers are equipped with DIP switches to configure the charger according to battery type and application. This setting is available in Operation menu second page:





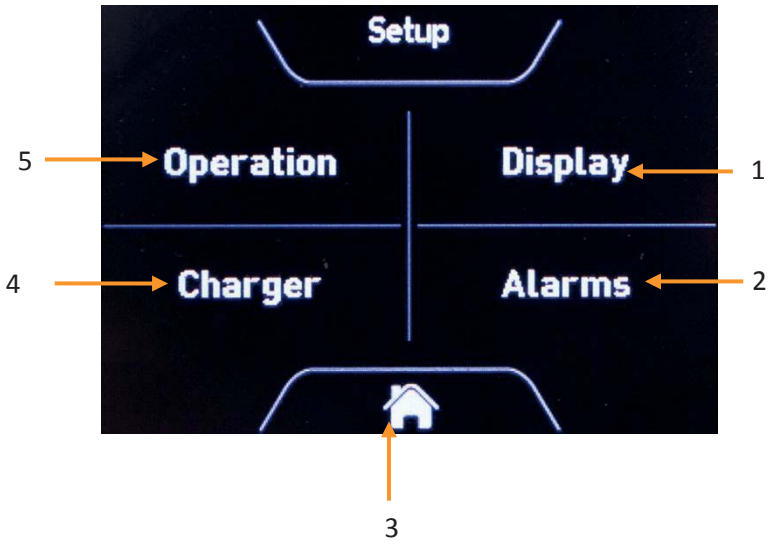
When the HPOWER charger DIP switches are set to A=1, B=1, C=1 and D=1, setting can be selected by the remote display itself.

1 = ON

0 = OFF

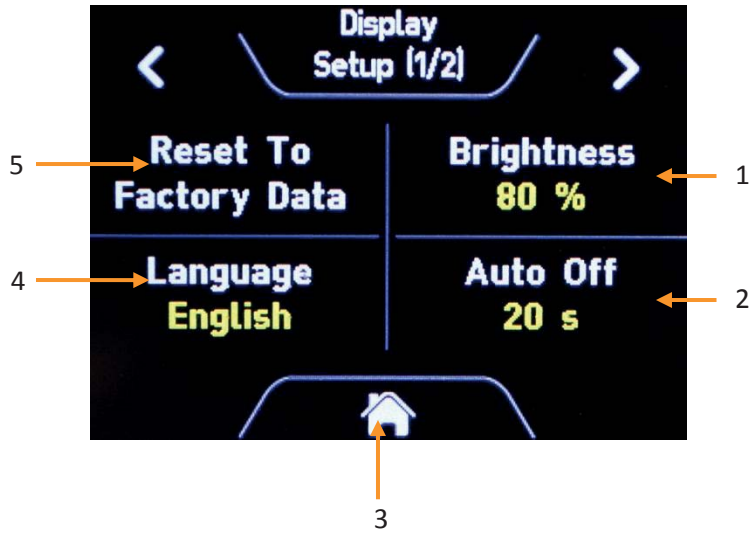
Refer to HPOWER charger user manual for details.

6 MENU



1 : Access to Display settings
2 : Access to Alarms settings
3 : Home (return to main page)
4 : Access to Charger settings
5 : Access to Operation settings (4.4)

6.1 DISPLAY SETUP

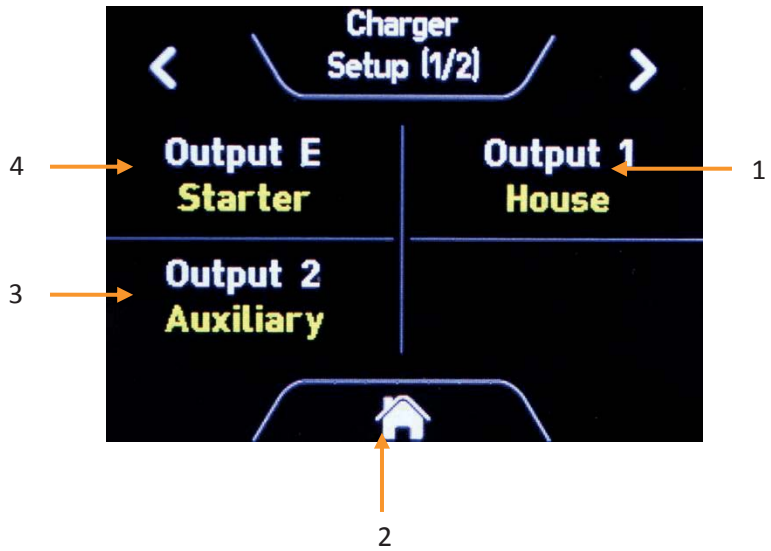


1 : Brightness Day
2 : Display Auto Off
3 : Home (return to main page)
4 : Language
5 : Reset to Factory Data

Auto Off is dedicated to reduce the load when an external power supply is used in order to supervise batteries when AC network is off.
The Remote Display will enter into sleep mode after the selected time interval. It will return into operation mode again by pressing the screen.

1 : Display status : Monitor or Read-only (see 6.2)
2 : Home (return to main page)
3 : Remote display hardware version
4 : Remote display software version

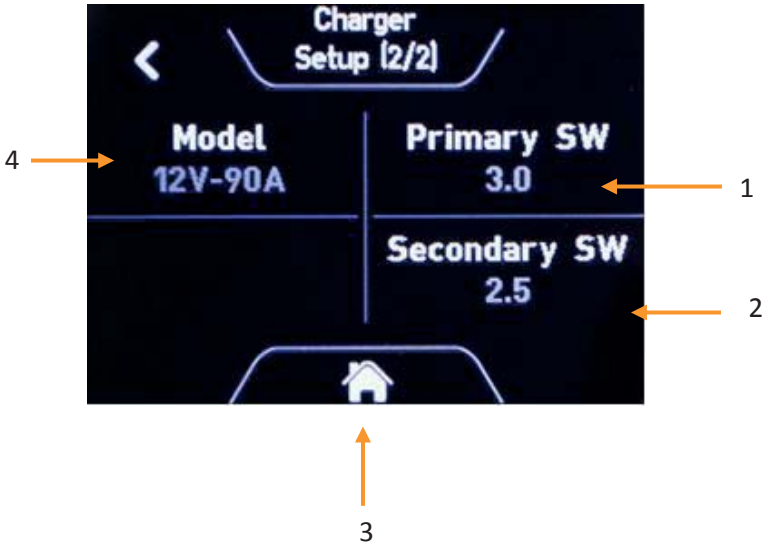
6.2 CHARGER SETUP



1 : Output 1 label selection
2 : Home (return to main page)
3 : Output 2 label selection
4 : Output E label selection

Label is set according to installation:

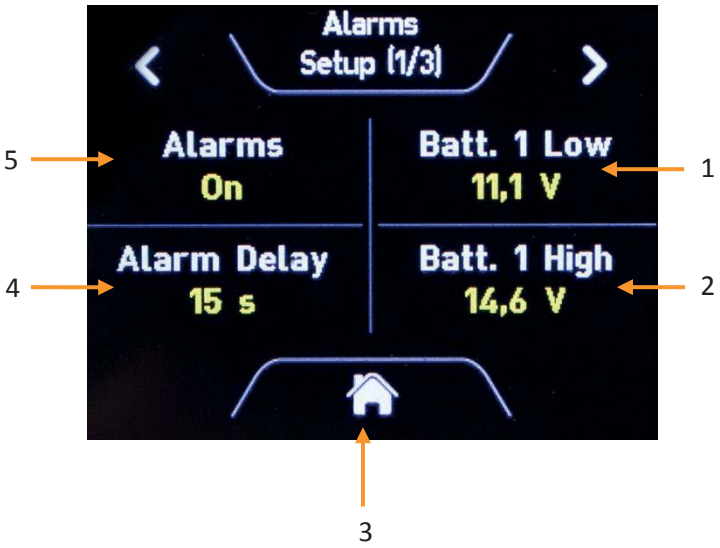
- Not Active
- Starter
- Start PORT
- Start STB
- House
- House 1
- House 2
- Bow thruster
- Gen Set Start
- Navigation
- Auxiliary
- Other



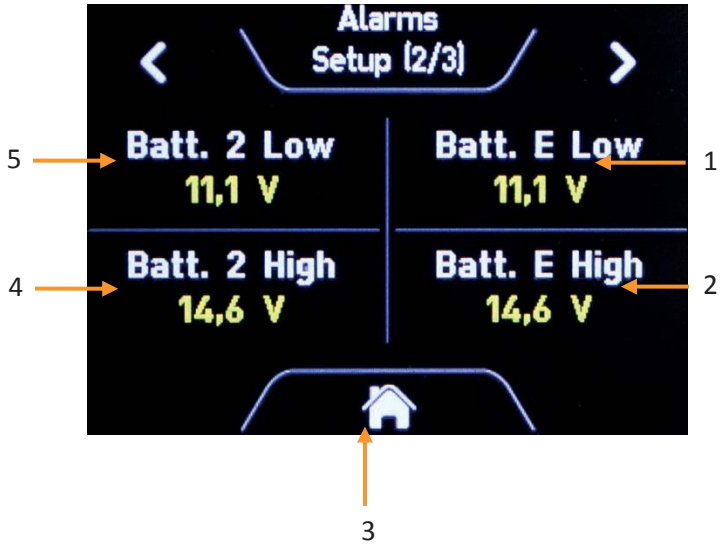
1 : Primary software version (Battery charger)
2 : Secondary software version (Battery charger)
3 : Home (return to main page)
4 : Charger model (ex. 12V – 90A)

6.3 ALARMS SETUP

6.3.1 Alarms settings



1 : Batt. 1 Low : under voltage alarm can be set from 8.0V to 13.0V (from 16V to 26V for a 24V charger)
2 : Batt. 1 High : overvoltage alarm can be set from 14.0V to 16.0V (from 28V to 32V for a 24V charger). **
3 : Home (return to main page)
4 : Alarm Delay : can be adjusted from 0 to 60 seconds
5 : Alarm ON/OFF : enables all alarms including over temperature alarm which is factory set to 50°C (available if temperature probe connected only).



1 : Batt. E Low : under voltage alarm can be set from 8.0V to 13.0V (from 16V to 26V for a 24V charger)
2 : Batt. E High : overvoltage alarm can be set from 14.0V to 16.0V (from 28V to 32V for a 24V charger). **
3 : Home (return to main page)
4 : Batt. 2 Low : under voltage alarm can be set from 8.0V to 13.0V (from 16V to 26V for a 24V charger)
5 : Batt. 2 High : overvoltage alarm can be set from 14.0V to 16.0V (from 28V to 32V for a 24V charger). **

1 : Auto Start : if AC is available and charge is OFF, this function automatically starts the charge if a battery low alarm occurs
2 : Home (return to main page)
3 : AC High : overvoltage alarm can be set down to 265V.
4 : AC Low : overvoltage alarm can be set up to 85V.

** The charge stops if this alarm occurs.

6.3.2 Battery charger alarms

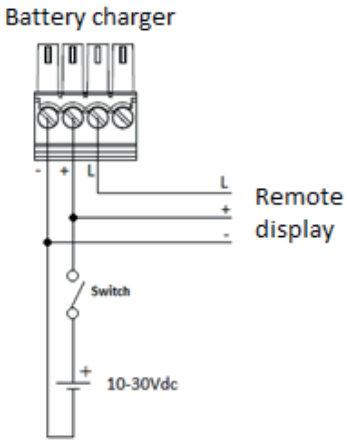
The remote display reports the following alarms:

- Fan failure
- Parallel fault (if enabled)
- Output fuse break-down
- Battery temperature out of range (if temperature probe <10°C or >50°C)
- Output short-circuit or overload
- The charger voltage (before distribution) is below 11V ± 5% (for 12V models) or 22V ± 5% (for 24V models) for more than 10 seconds. Hysteresis is approximately 0.5V.

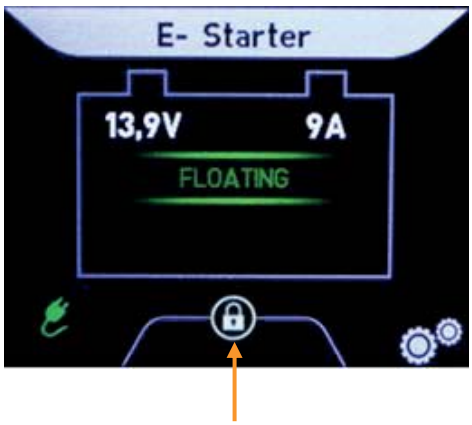
7 ADDITIONAL INFORMATION

7.1 EXTERNAL POWER SUPPLY

It is possible to use an external power supply in order to supervise batteries when AC network is off.



7.2 MONITOR AND READ ONLY MODE



1

When chargers are used in parallel, only a single display can operate into Monitor mode. All other displays shall be configured into Read only mode ; In this mode, the display cannot control the battery charger anymore. This mode is symbolized with a lock onto the main page [1].

When the monitor enters into stand-by, the Read-only displays will stop to emit information.

7.3 UPDATING THE SOFTWARE

In case a newer firmware is available for the display monitor, it can be easily updated. Therefore, the new firmware file has to be put on a Micro SD-card (Please use a micro SD-card with max. 4 GB). Then, the SD-card shall be inserted into the holder on the top side of the display monitor and the unit has to be restarted from DC power. The updating process will start automatically. After that, the SD-card shall be removed again.

7.4 LIMITED FUNCTIONS AVAILABLE

Depending on the model of charger and revision number, some functions like individual battery setting via the display may not be available.

7.5 EQUIPMENT REPAIRS

Disconnect the battery charger from the AC power network and disconnect the batteries before undertaking any repairs.

In case of fuses blowing, respect the calibre and type of fuse recommended in this manual.

Please contact CRISTEC or their distributor for any other repairs.

Any repair without CRISTEC prior agreement entails an exclusion of warranty.

8 TECHNICAL SPECIFICATIONS

Remote Display	
Dimensions	105 x 75 x 25 mm
Cut-out	87 x 65 mm
Ingress protection of front side	IP65, not for outdoor use
DC supply range	DC 10-30V

System DC consumption @ 12VDC*	
Display at full brightness	82 mA
Display in sleep mode	22 mA

*Measured with a single battery charger

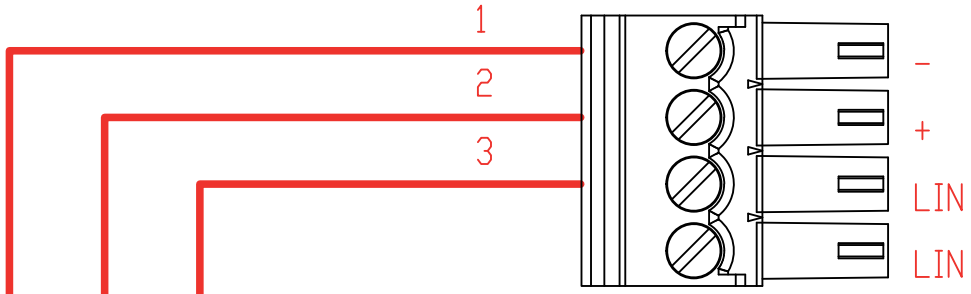
System DC consumption @ 24VDC*	
Display at full brightness	44 mA
Display in sleep mode	14 mA

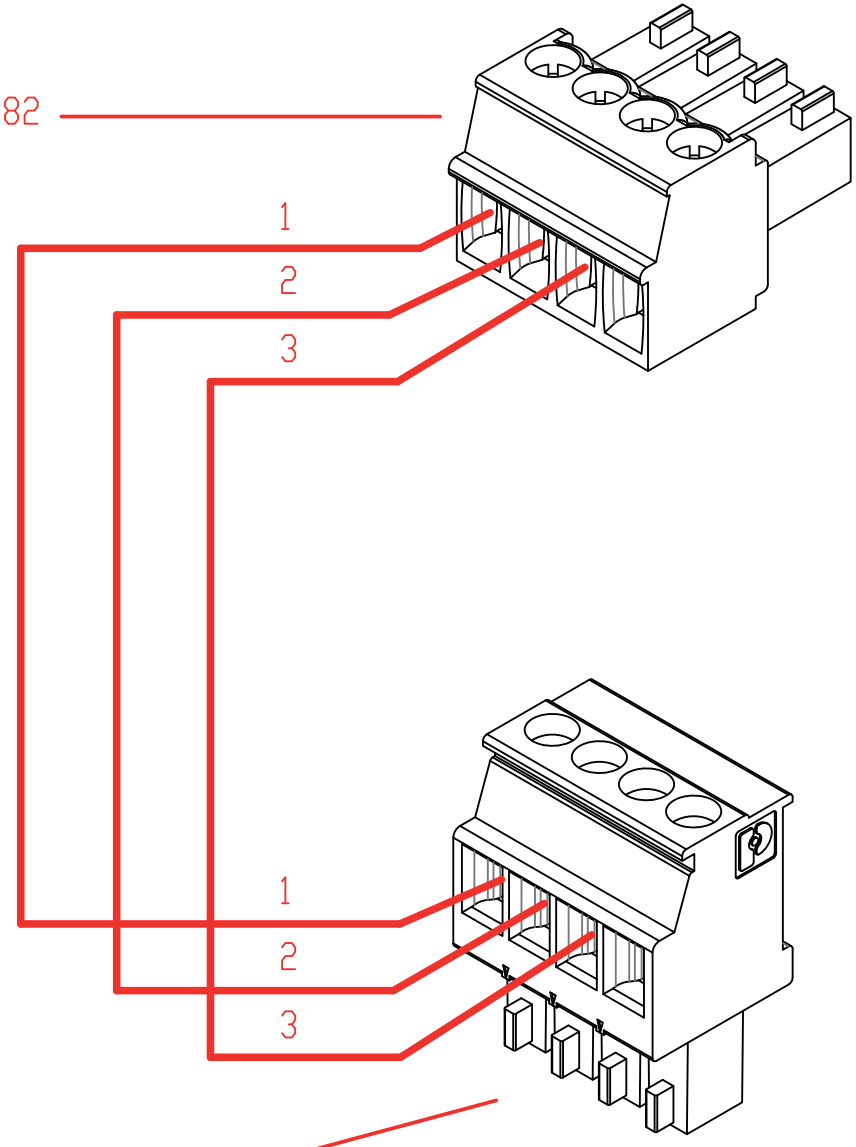
*Measured with a single battery charger

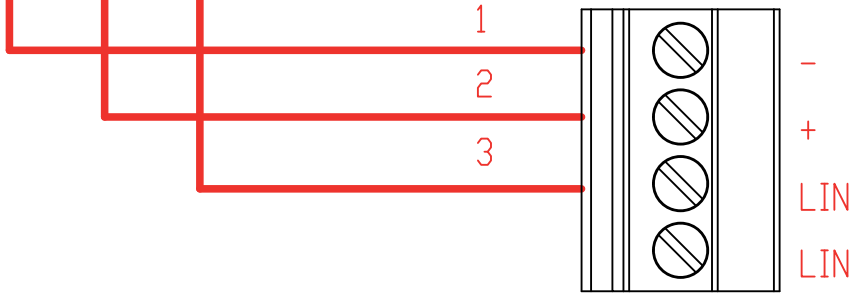
VERS CHARGEUR

TO BATTERY CHARGER

MC 1,5/4 ST-3,5 REF PHOENIX CONTACT : 1840382







VERS AFFICHEUR

TO REMOTE DISPLAY

MCVR 1,5/4 ST-3,5 REF PHOENIX CONTACT : 1863178

-	-	-	-	Etat de surface (NFE 05-016) : Ra
-	-	-	-	Matière : -
-	-	-	-	Finition : -
Date	Indice	Modifications	Visa	

REMOTE-DISPLAY-R
Cable d' interconnexion / Interconnection cable / VerbindungsKabel /
Cable de interconexión / Cavo di interconnessione / Arabağlantı:Kablosu

Ech. : -
Tol. générale : Ø,2
Usinage : ISO2768-mK
Dessiné : JMa
Le : 15/05/2018
Vérifié : GGi
F° : 1 / 1
N° 16841 01 A

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