DISPLAY BUS

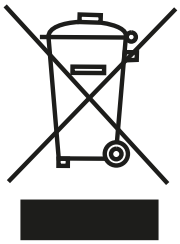
User Manual

ENGLISH

VALID FOR THE MODEL

DTB01

INSTRUCTIONS FOR THE PROPER DISPOSAL



This electronic product is subject to the European Directive 2012/19 / EU. Comply with local waste disposal regulations, do not dispose of old products with normal household waste. The proper disposal of products that can no longer be used prevents potential negative consequences for the environment and for the population.

CE

INDEX

1. SAFETY INSTRUCTIONS

- Child Safety: Keep the device Out of Reach.
- Carefully check the integrity of the device and connectors.
- To avoid overheating and possible fires do not install the device in a sealed environment, Always choose a well ventilated area.
- Do not place the device on highly flammable surfaces or environments (eg: paper, cloth, etc.).
- Do not cover the cooling slits on the side and the fan on the top.
- Do not install the device near flooded batteries: they produce flammable, corrosive and explosive gas while working, and it can damage the product.
- Protect the device from sunlight or direct sources of heat.
- To avoid malfunctions, DO NOT install and use the device in very humid environments, in contact with water splashes, various liquids, or exposed to rain.
- To avoid risk of electric shock and/or fire, the vehicle's fuel system must be in good condition.
- In case of damaged connecting cables or inadequate section, immediately replace them with suitable cables as specified by this manual or by a qualified electrician.
- In case of anomalies in the conformity of the product do not use it! it is strictly forbidden to open the device. Repairs may only be carried out by qualified technical personnel using original spare parts.
- Keep the instruction manual near the device for easy access to the essential safety, use and maintenance information.
- The information contained in this manual may be changed without notice. NDS Energy s.r.l. reserves the right to make changes and improvements to the product at any time without notice and without obligation to apply these changes to the devices previously distributed.

- The images of the products are purely indicative and may therefore not be fully representative of the characteristics of the product, differing in color, size or accessories.

2. PACKAGE CONTENTS

Check the package content:

- 1x **DTB01** display bus Controller
- 1x Connection cable
- 1x Frame for wall mounting
- 4x Mounting screws

3. DESCRIPTION

DTB01 is the optional controller with new user interface for NDS devices with N-BUS communication protocol.
Connect N-BUS devices to each other with the data cable, connect the **DTB01** Display Bus to the network, and you have the full power of the NDS power system at your fingertips.
With the **DTB01** you can control all N-BUS equipped devices, such as: Tempra Lithium Battery, Power Service PSB DC-DC, Suncontrol2 SCE.
In addition to the **DTB01** display you can also use the App for iOS and Android smartphones, if there is an NDS device with Bluetooth in the N-BUS network.

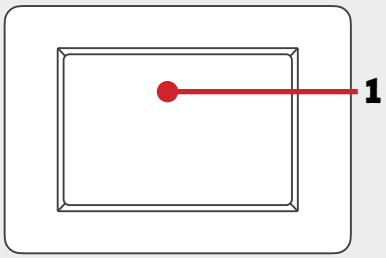
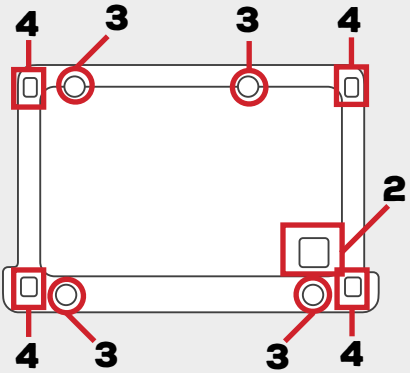
NOTE

- NDS devices of the previous generation are not compatible with DTB01.
- Only NDS devices with N-BUS can be monitored and controlled by DTB01.

4. MAIN FEATURES

- N-BUS device energy parameter monitoring: State of Charge (SoC) of Tempra battery, Solar Energy, DC-DC charge when vehicle is in motion.
- Accurate, real-time consumption monitoring.
- Control of all N-BUS devices to activate or deactivate a device, choose charge curve, select settings in general.
- Voltage and ampere charge display Date and time.

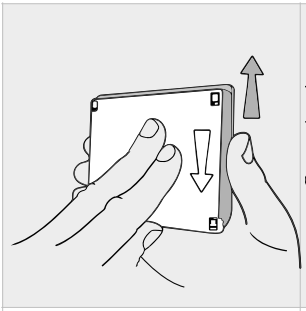
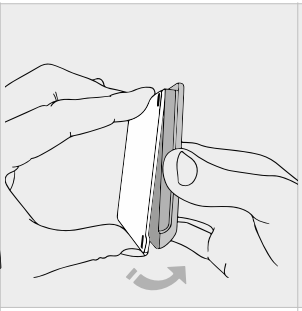
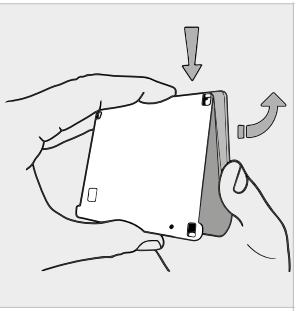
5. DISPLAY STRUCTURE

DISPLAY	MOUNTING FRAME
	

N°	FUNCTION
1	Touch screen Display
2	Communication cable hole
3	4 holes for wall fixing
4	Display cover plate to mounting frame fixing holes

6. INSTALLAZIONE

1. Remove the DBT01 mounting frame

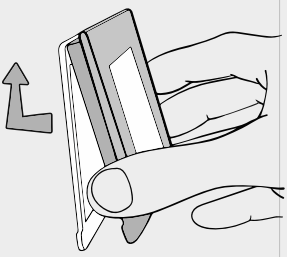
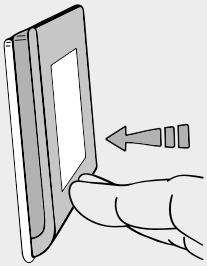
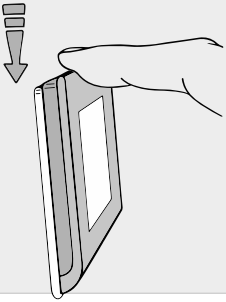
		
a. Slide the display cover plate upwards in relation to the rear mounting frame	b. Lift up the lower part of the display cover plate	c. Slide the display cover plate downwards, in relation to the mounting frame, and release it

2. Place the mounting frame on the wall chosen for installation and take marks for:
   - holes for the fixing screws (diameter 3mm);
   - hole for the communication cable pass through (minimum diameter 7.2mm).
3. Drill the holes and screw mounting frame to the wall, using the screws provided, be sure that they do not protrude once screwed in.
4. Pass the communication cable (white connector) through the hole previously made and insert it gently onto the display board.

CAUTION

Do not force the connector into the housing: the right direction is unique!

5. Fasten the display to the anchor bracket as required.

		
a. Insert the display cover plate fixing tabs into the appropriate housing of the mounting frame	b. Lower the bottom side of the display cover plate by making it stick to the mounting frame	c. Slide the display cover plate downwards in relation to the mounting frame

6. Connect the DTB01 display to an NDS device with N-BUS.

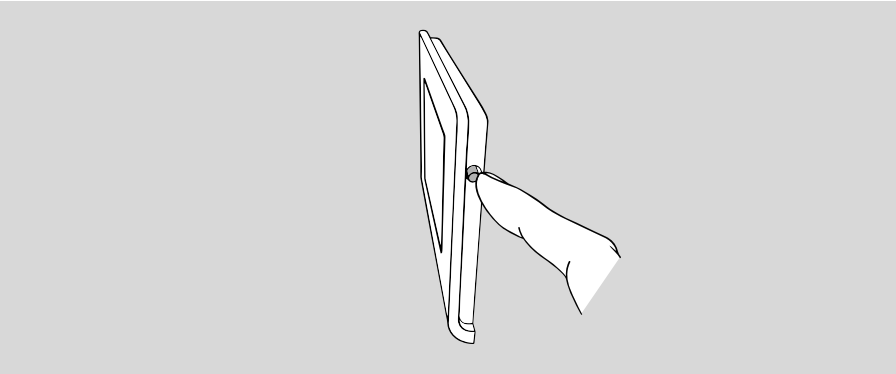
7. SETUP INIZIALE

The **DTB01** Bus Display allows you to set up and control all networked N-BUS devices. When the display is started for the first time, it searches for all connected devices and displays the setup menus of all devices (e.g. Suncontrol2 SCE, Lithium Battery Tempra) in succession.

Follow the steps below to best set up your N-BUS network using the DTB01 Display:

1. Connect the DTB01 display to an N-BUS device.

2. Press the button on the side of the display frame.



*A **short press** (1 second) of the side button switches on the display and all connected N-BUS devices.*
*A **long press** (5 seconds) of the side button switches off the display and all connected N-BUS devices.*

3. After the start-up screen, set the required data by moving through the various screens with the selection buttons. As shown in the figures below. Setup can also be completed later.

NOTE

When starting the DTB01, only the setting menus for the connected devices are shown in succession.

STEP 1 - POWERING UP

After pressing the power button, the loading screen is displayed and the N-BUS network is initialized.

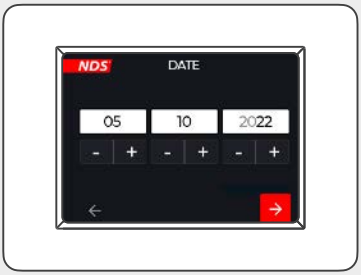
STEP 2 - LANGUAGE

Set the desired language. Press the red button at the bottom right to go to the next screen.

You can skip this step and go directly to the home page by clicking on the arrow at the bottom left.

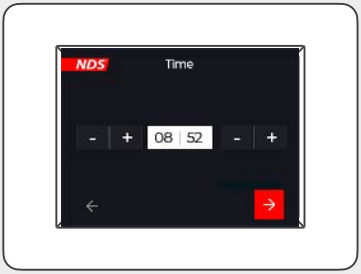
STEP 3 - DATE

Set the date by pressing the + and - buttons below the reference box. When finished, continue to the next screen by pressing the red button at the bottom right. Or go back with the bottom left button.



STEP 4 - TIME

Set the time with the + and - buttons.
When finished, continue to the next screen by pressing the red button at the bottom right. Or go back with the bottom left button.



STEP 5 - BATTERY SETTINGS

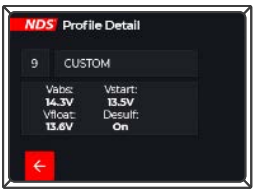
Set the capacity and technology of the leisure battery to be used.
When finished, continue to the next screen by pressing the red button at the bottom right. Or go back with the bottom left button.

STEP 6 - CHARGING CURVE

Set the correct charging curve in relation to the selection made in step 5. Click on the number at the side of the technology (technologies not suitable according to step 5 will not be selectable).

The number will be highlighted in green.
When finished, continue to the next screen by pressing the red button at the bottom right. Or go back with the bottom left button.

To get more information on the charge values, click on the arrow for the desired charge curve, the display screen for the technical charge data will open.

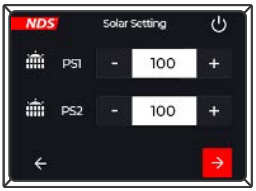


NOTE

When the Tempra Battery is connected to the N-BUS network, the values for technology and Ah will automatically be set and cannot be changed. The charging curve will automatically be set to $LiFePO_4$ (No. 5).

STEP 7 - SOLAR REGULATOR

Set the power (W) of the connected solar panels using the plus and minus buttons on the side.
When finished, continue to the next screen by pressing the red button at the bottom right. Or go back using the bottom left button.

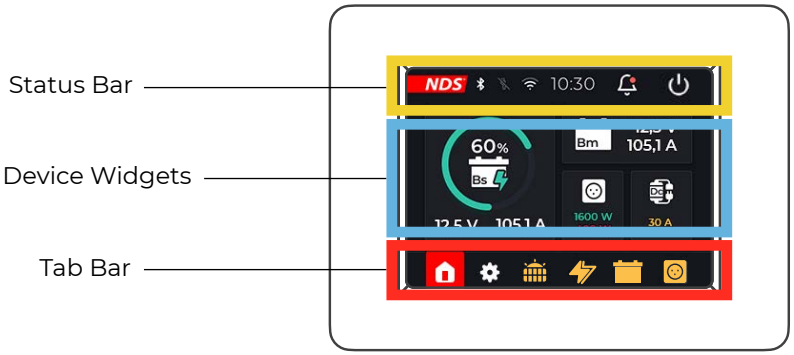


HOME SCREEN

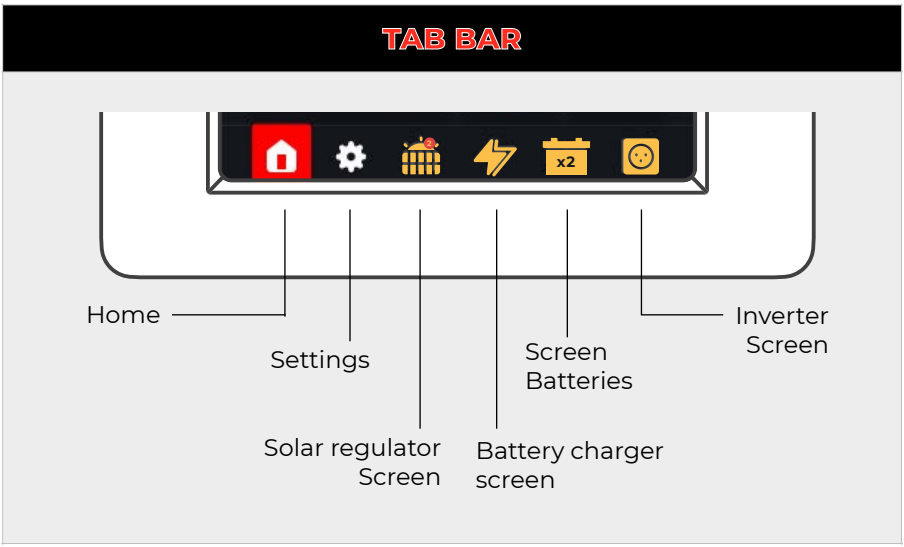
After finishing the setting screens, you arrive at the Home Screen.

8. SCREEN STRUCTURE

The Home screen consists of an upper status bar (Status Bar), a central part dedicated to device widgets, and a lower navigation bar (Tab Bar).

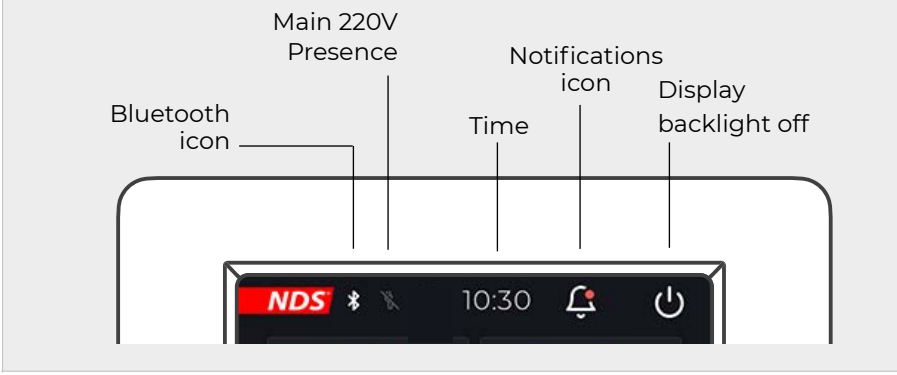


The tab bar shows the icons of the active devices connected to the N-BUS network, the setting icon (Settings) and the return button to the Home Screen are also shown.



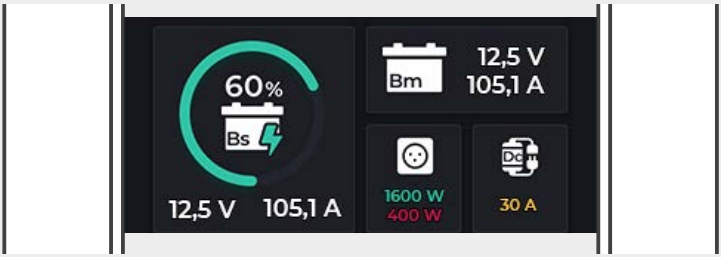
The Status Bar displays icons relating to Bluetooth connectivity and 220V mains presence.
The time, alarm notifications and the display standby button are also shown.

STATUS BAR



The widget section varies in order and form according to the connected devices.

DEVICE WIDGET



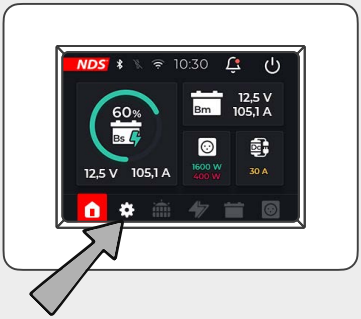
9. CUSTOM CHARGING CURVE

With the DTB01 you can set a customized charging curve for your batteries to match the manufacturer's requirements.

Follow the steps below to change the charging curve.

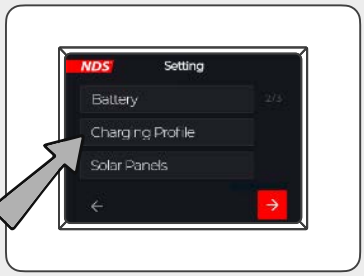
STEP 1

From the home screen, click on the gear symbol to enter the settings menu.

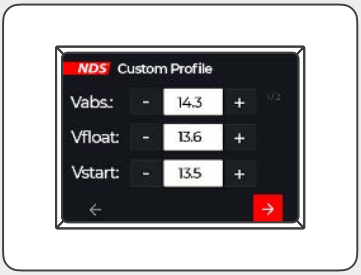


STEP 2

Move around the menu with the arrows at the bottom. Click on the red button at the bottom right to reach screen 2/3 and click on Charging Profile



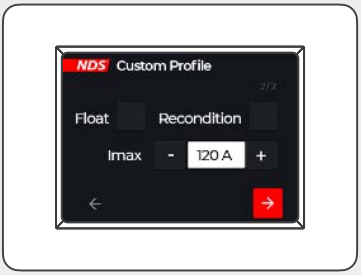
STEP 3



Set the desired values using the + and - buttons on the side, then proceed to the next screen using the red button at the bottom right.

The setting values correspond to the steps performed by modern battery chargers, these values are usually provided by the battery manufacturer:

Vabs. = Absorption voltage (absorption)
Vfloat = Float voltage (floating)
Vstart = Starting voltage (starting)



Select the desired options by marking the box, and set the required value with the + and - buttons on the side, then proceed to the next screen with the red button at the bottom right.

Float = Enables the float function. This function keeps the batteries always at the optimum state of charge.

Recondition = enables the desulphation function, ideal for Lead/Acid batteries (AGM, Gel, Wet)

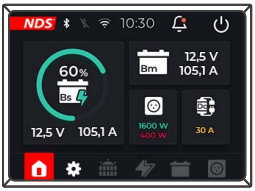
CAUTION

If you are not sure of the values to be set, return to a standard configuration.

10.OTHER SETTINGS

SETTING SCREEN SELECTION

From the home screen, click on the gear symbol to enter the settings menu.



SETTINGS SCREEN 1/3

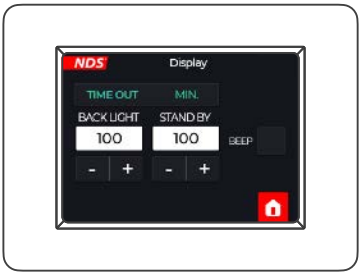
On page 1/3 of the settings menu you can select settings by ticking the box, e.g. for Activate/Deactivate Bluetooth.
Activate/Deactivate Silent mode: silent mode for Power Service PSB and SunControl2 SCE360.

It is also possible to enter sub-menus, such as for the Display.

The Display submenu allows you to:

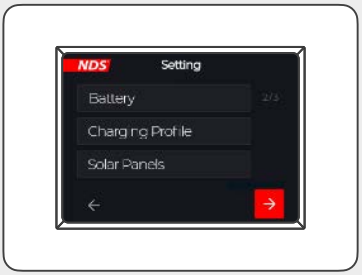
- Set the backlight activity time
- Set the time before display standby.
- Activate/deactivate audio feedback when touching the display.

Act on the + and - selection buttons, and finally click on the red button at the bottom right.



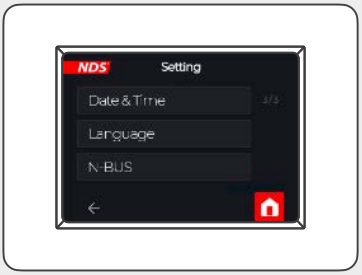
SCREEN SETTINGS 2/3

From this screen you can access sub-menus to set details concerning leisure battery, charging curve and solar panel power.



SCREEN SETTINGS 3/3

From this screen you can access sub-menus to set details regarding date and time, language and the list of connected N-BUS devices.



The screen shows all N-BUS devices connected in the same network.
The device highlighted in blue is the Master, i.e. the Master is the device that manages all others.

11. BATTERIES

BATTERY SCREEN

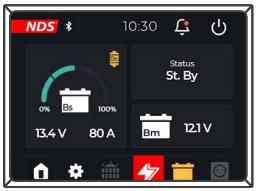
Clicking on the battery icon on the Tab Bar displays all data of the TEMPRA batteries connected with the N-BUS.

If two or more TEMPRA batteries are connected, this screen will be displayed.

12. BATTERY CHARGERS DC-DC

DC-DC SCREEN

If a battery charger or DC-DC with N-BUS is present in the N-BUS network, it will be possible to display the charging data of the leisure battery (voltage and current) and the voltage of the starter battery. The charging stage the charger is in is also shown.



13. SOLAR REGULATORS AND SOLAR PANELS

SOLAR SCREEN

If SunControl2 (SCE320, SCE360) is present in the N-BUS network, clicking on the solar panel icon on the Tab Bar displays all data concerning the solar panels and the controller. During charging, the charge status of the leisure batteries is also shown.

By clicking on the History icon, a history of the daily Ah and Wh values loaded by the SunControl2 is displayed.

12. TECHNICAL FEATURES

DISPLAY - DTB01	
Display Type	TFT 2,83" 262k full color Touch Screen
Average consumption	73mA @ MAX brightness 33mA @ Display OFF 8mA during the night time
Type of connection	NDS Bus with 8m cable
Operating temperature	-10°C / +70°C

UE DECLARATION OF CONFORMITY

Company:	**NDS ENERGY S.R.L.**
Address:	Via Giovanni Pascoli, 96/98 65010 - Cappelle sul Tavo (PE) Italy

Declare under our sole responsibility that the product:

Commercial name:	**DISPLAY N_BUS**
Models:	**DTB01**

To which this declaration applies complies with the provisions of the council of european union relating to electromagnetic compatibility (EMC) **DIRECTIVE 2014/30/EU**, conformity is proven by compliance with the following standards:

- ✓**EN55014-1:2017+A11:2020**
- ✓**EN55014-2:2015**
- ✓**EN IEC 61000-3-2:2019**
- ✓**EN61000-3-3:2013+A1:2019**
- ✓**EN IEC 61000-6-1:2019**
- ✓**EN IEC 61000-6-2:2019**
- ✓**EN IEC 61000-6-3:2021**

Conformity relating to the restriction of the use of certain hazardous substances is proven by compliance with the **DIRECTIVE 2011/65/EU (ROHS 2)**.

✓**EN 50581:2012**

CE

Cappelle sul Tavo,
14/06/2022

Administrator and legal representative

NDS ENERGY s.r.l.

WARRANTY COUPON

FIRST NAME_____

SURNAME_____

POSTCODE_____

E-MAIL _____

MODEL_____

SERIAL NUMBER_____

PURCHASE DATE_____

STAMP AND SIGNATURE OF THE SELLER

I CONSENT TO THE ACTIVITY DESCRIBED IN POINT 3.C OF THE INFORMATION NOTICE ON WWW.NDSENERGY.IT/PRIVACY-POLICY/

NDS ENERGY S.R.L.
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NOTES

NOTES

NOTES

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