MEDIROL.

Vivera Application
Instruction Manual

Rev X, 13.10.2021

Table of Contents

Introduction

Thank you for purchasing the Vivera service application. To take full advantage of the product's features, please read the entire application manual thoroughly to set up particular features.

This manual contains general instructions for use. The instructions provided in this manual cannot cover all details, so the safe and correct use of this product is entirely up to the user. Safety information is provided as a service to the user. All other precautions taken by the user should be within the applicable regulations. We recommend to carry out training about the correct use of the product before using it in a specific situation.

No part of the manuals included with this product may be reproduced, copied, distributed, stored in backup systems, or translated into any language in any form whatsoever without the prior written permission of MEDIROL s.r.o.

Meaning of Special Symbols

ⓘ **NOTE**
Provides information for easier maintenance and explanation of important instructions.

Application Installation

Conditions for Installation

- Device with Android OS 4.0 or later
- 35 MB of free space in the device memory
- Access to Internet

Installation Procedure – ANDROID OS

1. Open the Google Play Store.
2. Search for the application "Vivera Nosítka Medirol".
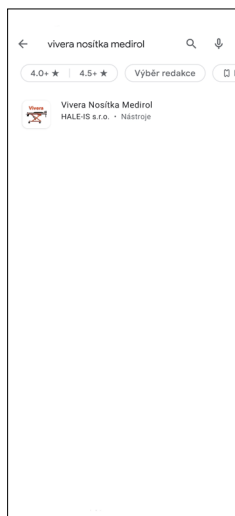3. Install this application on your device.
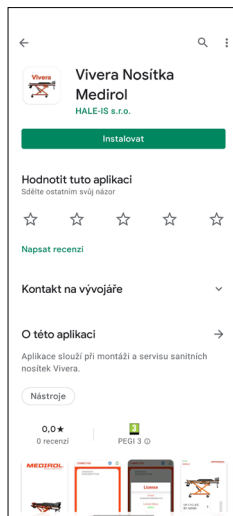
Fig. 1

Searching for the application

Fig. 2

Application installation
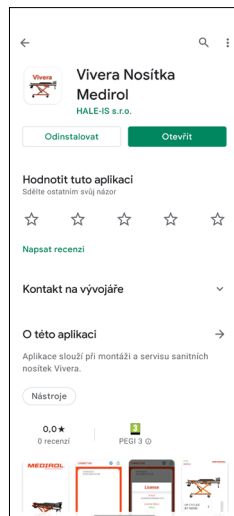
Fig. 3

Completing the application installation

Activating the Application

To activate the application, you must obtain a license key. To obtain it, please contact Medirol s.r.o. support.

Activation procedure:

1) Open the application and check the license status (Fig. 1).
2) Open the received email and follow the instructions (Fig. 2).
3) Verify the active status of the license (Fig. 3).

Inactive license

Activation link

Active license

Fig. 2
Email with instructions

Fig. 1
Page with an inactive license

Fig. 3
Page with an active license

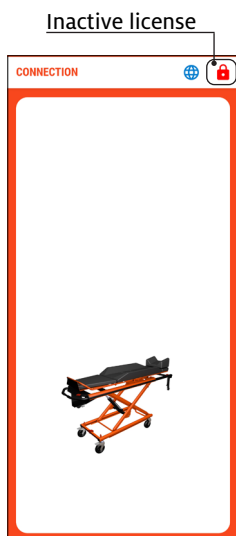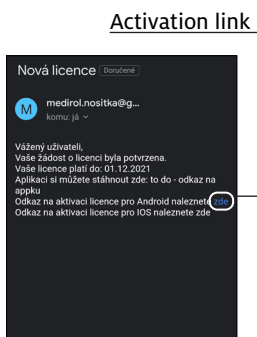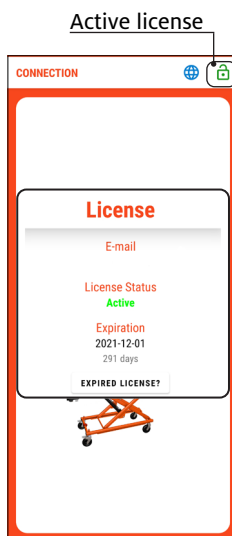# Connecting Your Smartphone to the Vivera Stretcher Trolley

Conditions for Connection

The following points must be observed to connect to the stretcher trolley:

• Turn on Bluetooth on your device.
• Break the Bluetooth connection with other devices.
• Shut down all applications running in the background.
• Keep your device close to the stretcher trolley.

For the application to work properly, never pair the stretcher trolley using the Bluetooth settings on your device.

Connecting to the Stretcher Trolley

1. Activate the stretcher trolley (display panel lights up – battery status indicators).
2. Launch the "Vivera Nosítka" app (Fig. 1).
3. After loading the application, the initial screen is displayed (Fig. 2).
4. The application will automatically start searching for stretcher trolleys in the vicinity. All found stretcher trolleys will be displayed in sequence on the page, e.g. VIVERA20001 (Fig. 3).
5. Select the stretcher trolley you want to connect to from the list.

Fig. 1
Starting the application

Fig. 2
Connection screen

Fig. 3
Found stretcher trolleys

6. After a successful connection, the "BT ON" indicator in the top left corner lights up green (Fig. 4) and the display on the stretcher trolley lights up yellow (Fig. 6). The connection may take up to several tens of seconds.

Bluetooth ON
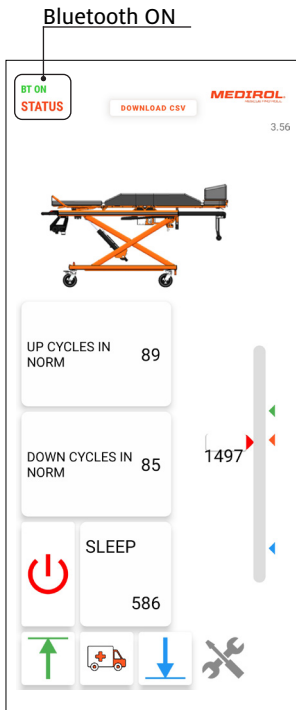
Fig. 4
Home screen

Fig. 5
Unconnected device

Fig. 6
Connected device

Troubleshooting the Connection Problems

Procedure after an unsuccessful connection to the stretcher trolley:

1) Restart your device.

2) Make sure that all connection conditions are met (p. 7).

3) Launch the application and retry the connection.

If you experience repeated connection problems, contact your service partner or the manufacturer.

Application Description

The application is divided into individual pages, which are used to set up and diagnose important functions of the stretcher trolley.

Connection
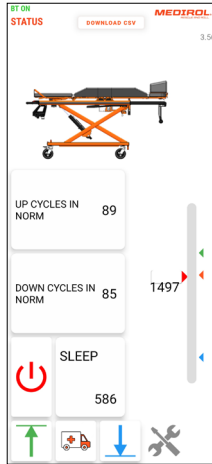
Home screen
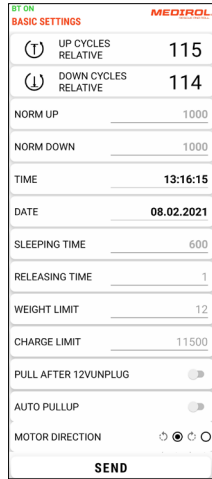
Basic settings
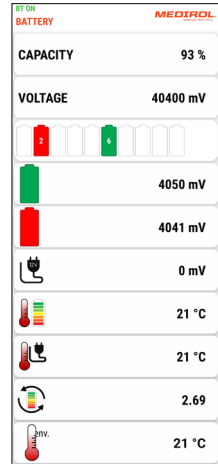
Battery and temperatures
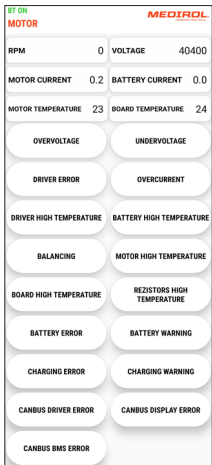
Parameters and error indicators
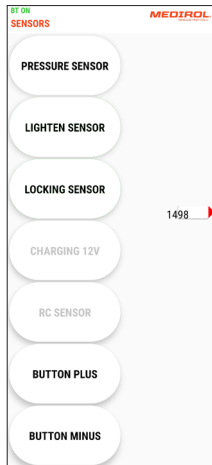
Sensors
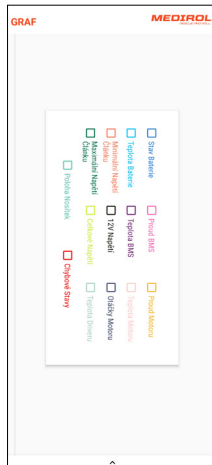
Chart

Serial numbers

Description of Individual Functions

Connection

License validity

Application language
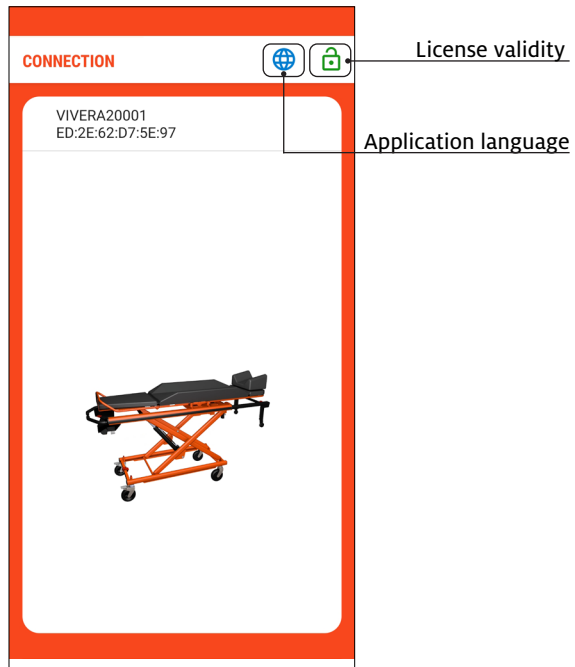
Application language

Allows you to set the language of the application interface. The interface can be switched to Czech, English or German.

License validity

When opened, more detailed license information is displayed.

Home Screen

Bluetooth connection status

BT ON

STATUS

DOWNLOAD CSV

MEDIROL
RESCUE PRO ROLL

3.56

Data download button

Firmware version

Cycle counter

UP CYCLES IN NORM 89

DOWN CYCLES IN NORM 85

1497

Graphical position indicator

SLEEP

586

Sleep button

Countdown to sleep

Adjusting the highest position

Service mode button

Adjusting the ambulance position

Adjusting the lowest position

Sleep button

When pressed, the stretcher trolley is put into the sleep mode.

Countdown to sleep

Displays the number of seconds to automatic sleep. After pressing any button on the stretcher trolley, the value is reset.

The timer value can be set on the "Basic Settings" screen under "Sleeping time" (p. 17).

Data download button

Downloads the data from the control unit. These data are needed for more accurate diagnostics and displaying the graphs; see chapter "Graphs" (p. 25).

The download procedure:

1) Select the download range:

       a) From date – downloads all data from the selected calendar day.

       b) From last download – downloads all data from the last download till now.

       c) Last 1000 records – downloads the last 1000 records.

2) Press the Download button.

3) After downloading, select how to save or send the data.

The download range options
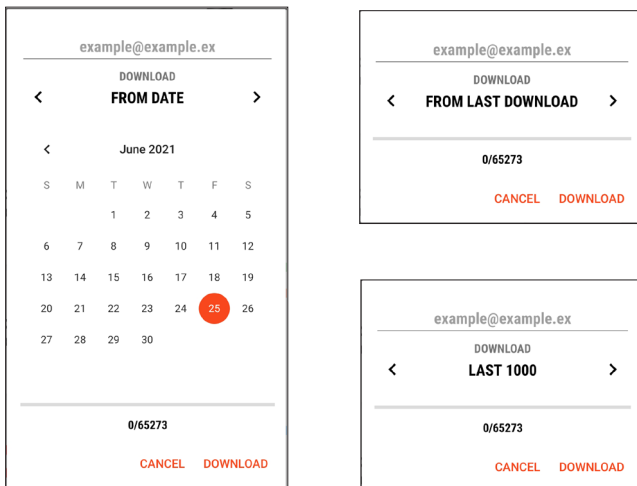
Adjusting the Stretcher Positions

Adjusting the three basic height positions is essential for the correct and safe operation of the stretcher trolley.

After adjustment, always check that all positions are set correctly. Do this without and with a load.

The height positioning is described in more detail in the manual of the stretcher trolley or monoblock.

Adjusting the lowest position

Adjustment procedure:

1) Lower the stretcher as low as possible.

2) Press the corresponding button on the home screen to adjust the lowest position.

ⓘ **NOTE**

If the stretcher trolley does not brake properly when moving downwards, set the lowest position approximately 2–3 cm higher than the mechanical lowest position.

Adjusting the ambulance position

Adjustment procedure:

1) Move the stretcher to the required height for comfortable loading into the ambulance (2–3 cm above the slider that is part of the loading system).

2) Press the corresponding button on the home screen to adjust the ambulance position.

Adjusting the highest position

Adjustment procedure:

1) Raise the stretcher to the desired height. If the height range is unsatisfactory, use the Service mode function to increase the range.

2) Press the corresponding button on the home screen to adjust the highest position.

Service mode button

Adjustment procedure:

1) Activate the service mode (button is green) and carefully move the stretcher to the desired height. Pay attention to the mechanical capabilities of the stretcher trolley.

2) Deactivate the Service mode (button is grey) and follow step 2 in "Adjusting the highest position".

Graphical position indicator

The coloured markers on the right side show the set height positions.

Blue marker – the lowest set position

Red marker – the ambulance set position

Green marker – the highest set position

The indicator on the left side shows the current stretcher position and the exact value in units of angular points.
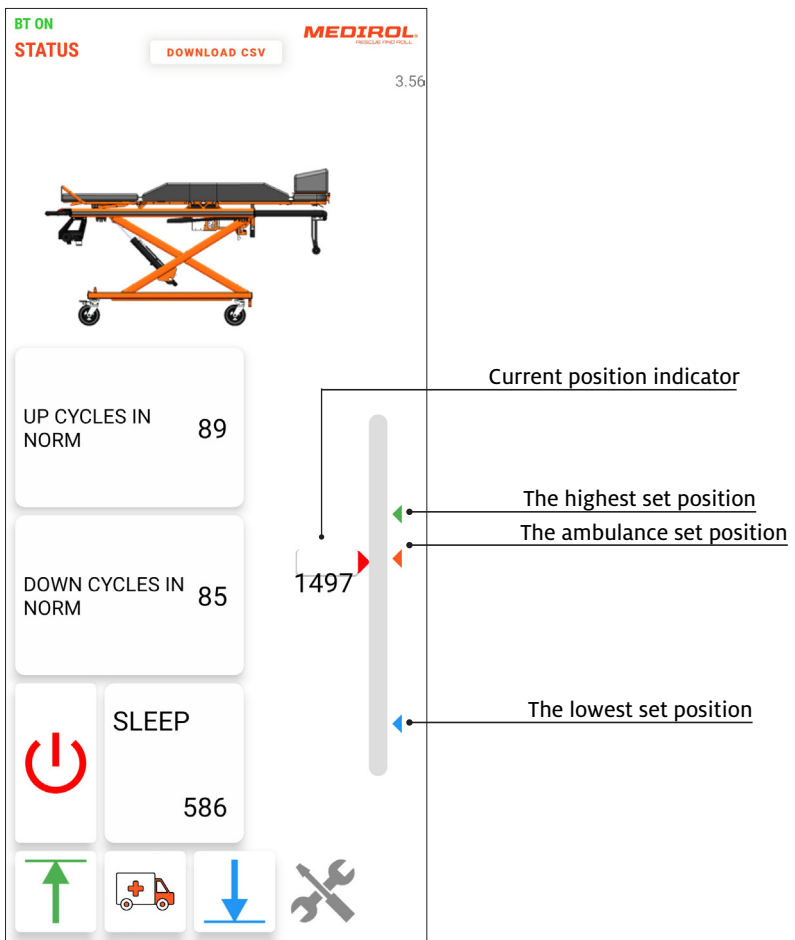
Basic Settings

The application allows you to change the settings of some system functions. Always fill in all the values of the adjustable functions before pressing the Send button.

Relative cycle counter

Setting the norms

Current date and time

Adjustable system functions

BT ON	**MEDIROL**
BASIC SETTINGS	
UP CYCLES RELATIVE	115
DOWN CYCLES RELATIVE	114
NORM UP	1000
NORM DOWN	1000
TIME	**13:16:15**
DATE	**08.02.2021**
SLEEPING TIME	600
RELEASING TIME	1
WEIGHT LIMIT	12
CHARGE LIMIT	11500
PULL AFTER 12VUNPLUG	
AUTO PULLUP	
MOTOR DIRECTION	
SEND	

Sending the data

Relative cycle counter

The relative cycle is related to the difference between the set values for the highest and lowest positions (see "Adjusting the stretcher positions" on p. 14). One cycle is added when the difference between the highest and lowest position is reached. The value of this difference therefore varies according to the current settings of the limit positions.

The values for recording a cycle are added regardless of whether the direction of movement changes.

	UP CYCLES RELATIVE	115
	DOWN CYCLES RELATIVE	114

Setting the norms

The norm determines the value of the angular points (see chapter "Graphical position indicator" on p. 15). To record one cycle, the norm value must be reached by continuous or step-by-step movement in one direction. If the direction of movement changes before the norm is reached, the calculation is interrupted and the cycle is not counted.

NORM UP	1000
NORM DOWN	1000

Current date and time

Display of the current date and time.

TIME	13:16:15
DATE	08.02.2021

Adjustable system functions

Sleeping time

Setting the countdown time to sleep; see chapter "Home screen" on p. 12.

Releasing time

Setting the time for the reverse movement to release the pressure in the system.

SLEEPING TIME	600
RELEASING TIME	1
WEIGHT LIMIT	12
CHARGE LIMIT	11500
PULL AFTER 12VUNPLUG	
AUTO PULLUP	
MOTOR DIRECTION	↺ ◉ ↻ ○
SEND	

Weight limit

Setting the limit of angular velocity at which the motor braking will be activated when lowering the stretcher.

Set a lower value for braking at lower loads and vice versa.

Charge limit

Setting the voltage value [mV] at which charging in the loading device (12V circuit) is initiated.

Pull after 12V unplug

Function for automatic retraction of the undercarriage after disconnection from the charging connectors in the loading device (12V circuit).

Auto pull up

Function for automatic retraction of the undercarriage when the monoblock/chassis rests on the sliding arm of the loading device.

Motor direction

Setting the direction of motor rotation.

Battery and Temperatures

Battery status

Cell status

Charging voltage

Battery temperature

Inverter temperature

Number of battery cycles

Overall internal temperature

BT ON
BATTERY

MEDIROL

CAPACITY	93 %
VOLTAGE	40400 mV

| 2 | | | 6 | | | | |

	4050 mV
	4041 mV
12V	0 mV
	21 °C
	21 °C
	2.69
env.	21 °C

18
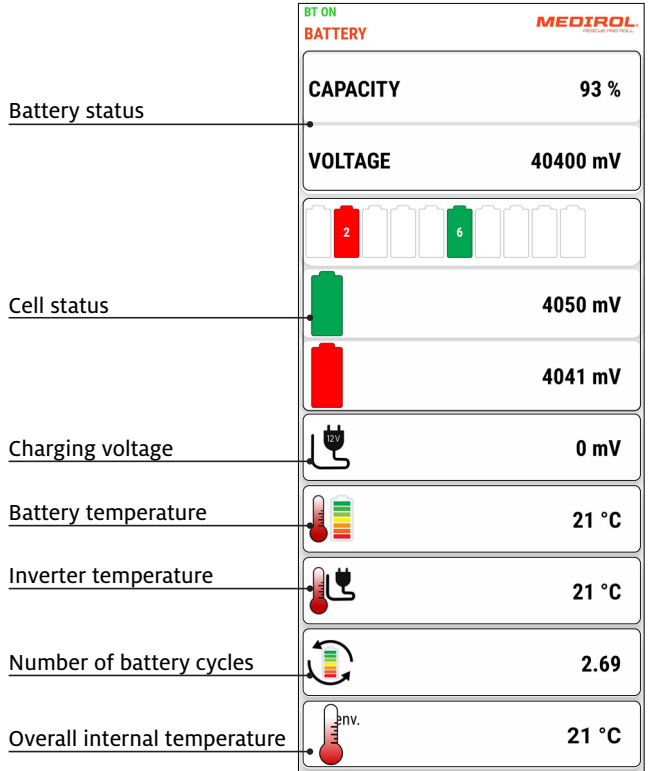
Battery status

Displays the current capacity [%] and voltage [mV] of the battery.

Cell status

Displays the current voltage values of the most and least charged cells of the battery.

Position of the most (green)
and least (red) charged cell

Highest cell voltage — 4050 mV

Lowest cell voltage — 4041 mV
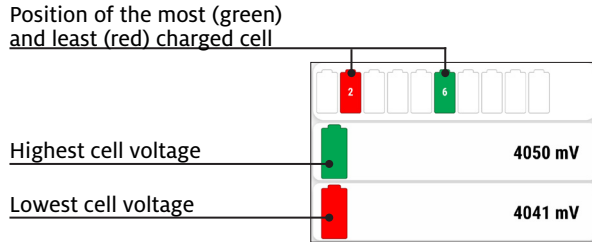
Voltage at charging

Displays the current voltage value on the charger when connected to the 12V circuit on the loading device.

0 mV

Battery temperature

Displays the current battery temperature.

21 °C

BMS Temperature

Displays the current temperature on the BMS control board.

21 °C

Number of battery cycles

One cycle corresponds to a full charge and discharge of the battery to 100% capacity.

2.69

Overall internal temperature

Displays the current temperature inside the electrical box.

21 °C

Parameters and Error Indications

Motor parameters			Battery parameters

BT ON
MOTOR

RPM	0	VOLTAGE	40400
MOTOR CURRENT	0.2	BATTERY CURRENT	0.0
MOTOR TEMPERATURE	23	BOARD TEMPERATURE	24

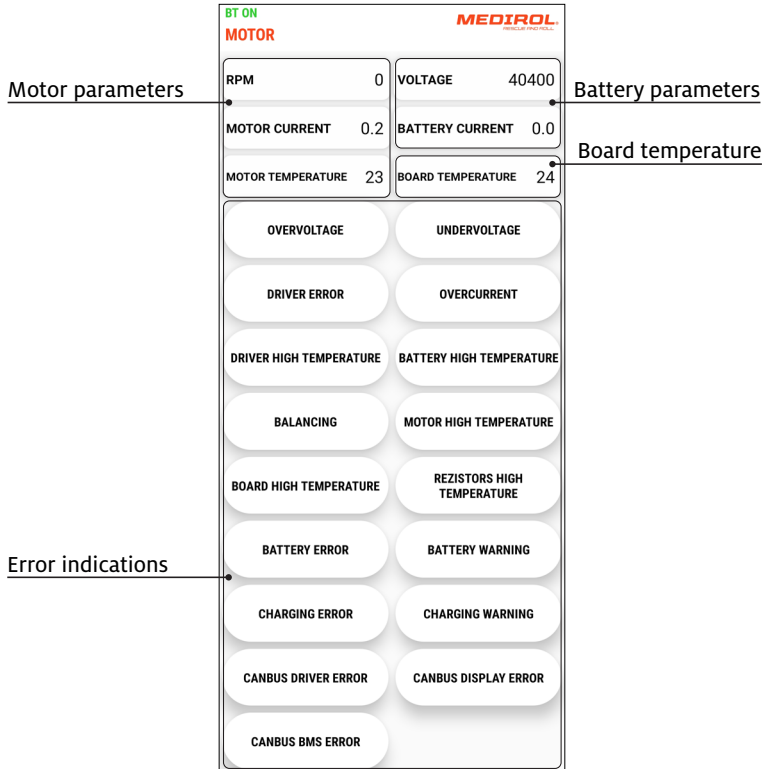| OVERVOLTAGE | UNDERVOLTAGE |
DRIVER ERROR	OVERCURRENT
DRIVER HIGH TEMPERATURE	BATTERY HIGH TEMPERATURE
BALANCING	MOTOR HIGH TEMPERATURE
BOARD HIGH TEMPERATURE	REZISTORS HIGH TEMPERATURE
BATTERY ERROR	BATTERY WARNING
CHARGING ERROR	CHARGING WARNING
CANBUS DRIVER ERROR	CANBUS DISPLAY ERROR
CANBUS BMS ERROR	

Motor parameters — (label pointing to RPM block)
Battery parameters — (label pointing to VOLTAGE block)
Board temperature — (label pointing to BOARD TEMPERATURE block)
Error indications — (label pointing to error block)

Motor parameters

RPM – Current motor speed [rpm]

Motor current – Current motor current [A]

Motor temperature – Current motor temperature [°C]

Battery parameters

Voltage – Current battery voltage

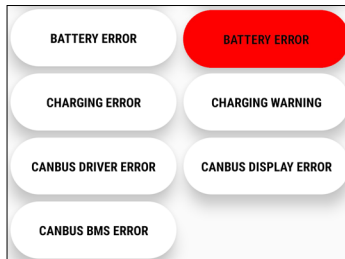Battery Current – Current battery current

a.   > 0 [A] battery is under load

b.   < 0 [A] battery is charging

Board temperature

The current temperature of the motor control board

Error indications

When a fault occurs, the corresponding indicator lights red. The list below describes the faults in more detail.

Example of battery error indication.

Overvoltage

System overvoltage – voltage value > 42.0 V.

Undervoltage

Undervoltage in the system – voltage value < 32.0 V.

Driver error

Motor driver error.

Overcurrent

System current limit exceeded – motor current > 105.0 A

Driver high temperature

Driver temperature > 90.0 °C.

Battery high temperature

Battery temperature > 65 °C.

Balancing

Indicator of the balancing process, when the voltage of each cell is being balanced.

Motor high temperature

Motor temperature > 110 °C.

Board high temperature

BMS temperature > 65°C.

Resistors high temperature

Resistor temperature > 85°C.

Battery error

Possible causes of the error message:

a.   Zero battery capacity.

b.   Lowest cell voltage less than 3.3 V

c.   Permitted discharge current exceeded (100 A)

d.   Permitted charging current exceeded (approx. 7 A)

e.   Permitted battery temperature exceeded (55 °C)

f.   Permitted BMS temperature exceeded (55 °C)

Battery warning

Warning, battery error. Possible causes:

a.   Lowest cell voltage less than 3.2 V.

b.   Critical battery temperature exceeded (65 °C).

c.   Critical ambient temperature exceeded (65 °C)

d.   Critical BMS temperature exceeded (65 °C)

e.   Critical balancer temperature exceeded (85 °C)

Canbus driver error

Control board communication error

Canbus display error
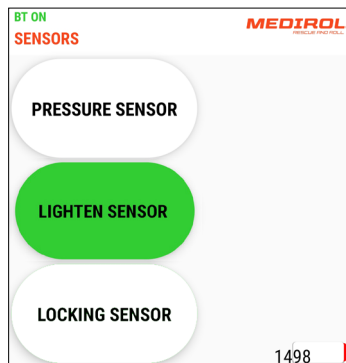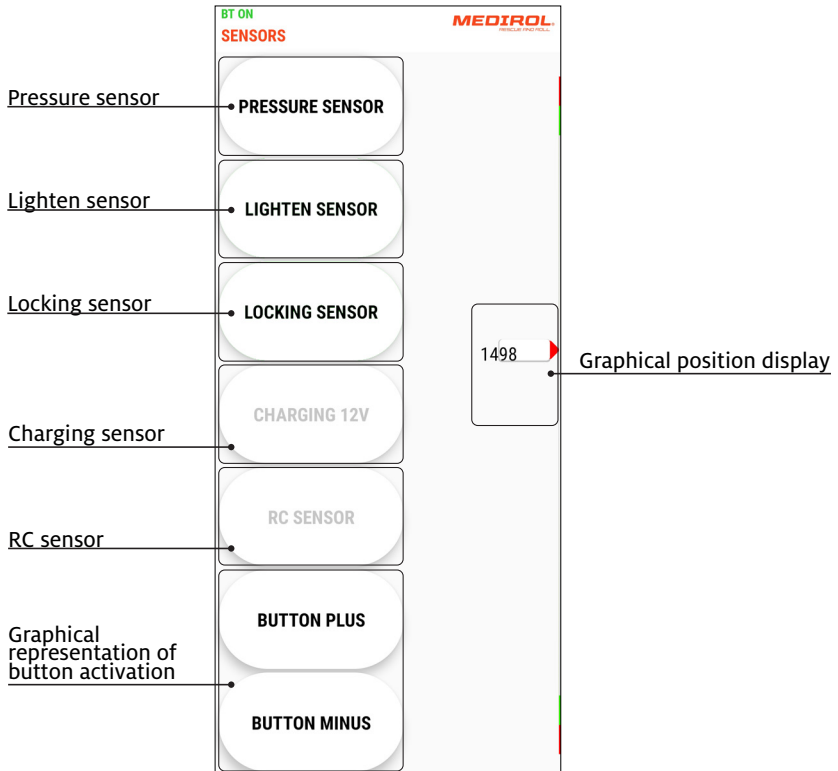
Display communication error

Canbus BMS error

Battery control communication error.

Sensors

This page displays the switching of sensors to check their functionality and correct settings.

When a sensor is activated, the corresponding indicator lights green.

Pressure sensor — PRESSURE SENSOR

Lighten sensor — LIGHTEN SENSOR

Locking sensor — LOCKING SENSOR

Charging sensor — CHARGING 12V

RC sensor — RC SENSOR

Graphical representation of button activation — BUTTON PLUS / BUTTON MINUS

Graphical position display — 1498

Example of activation of the lighten sensor

Pressure sensor

Indicates whether the pressure sensor in the hydraulic circuit switches on when the stretcher is loaded. The sensor is even activated by the weight of the stretcher itself. It is deactivated when the stretcher rests on the arm of the loading device.

Lighten sensor

This sensor is located in the front of the stretcher. It is switched on when it is pressed or when the stretcher rests on the arm of the loading device. When both the lighten sensor and the locking sensor are switched on, the "+" button is deactivated.

Locking sensor

This sensor is located in the front of the stretcher. It indicates that the stretcher is locked with the loading device.

Charging sensor

Indicates active battery charging.

Graphical representation of button activation

Used to verify the correct functioning of the "+" and "−" control buttons on the control panel.

Graph

Used to display the recorded data needed for diagnostics.

Procedure to view the graph:
1. Download the CSV data and save it; see chapter "Home Screen" on p. 12.
2. Open the graph output values display.
3. Select the information you want to display.
4. Close the graph output values display.

Selection of the graph output values

Button to display the graph output values
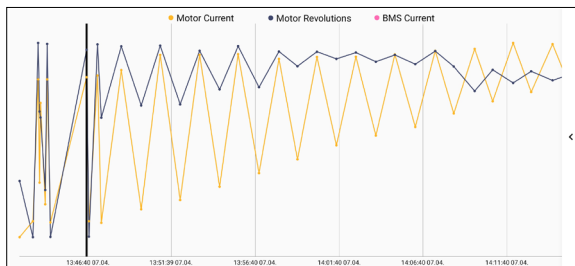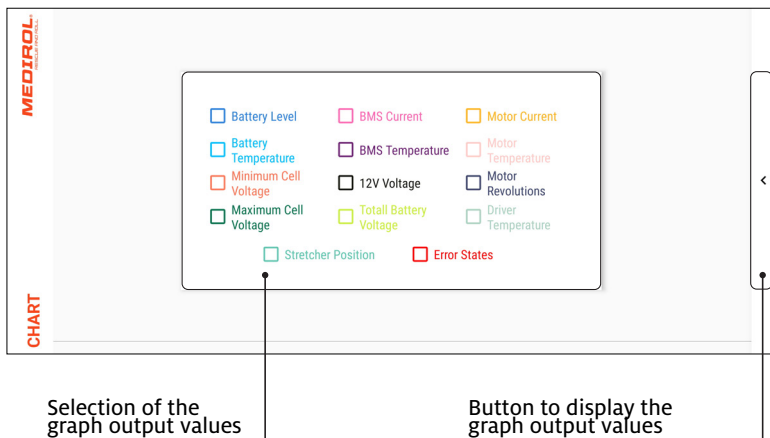
Example of a generated graph

Serial numbers

When replacing any of the key components, read and save the corresponding serial number located on the stretcher trolley structure.

Procedure to save the serial number:

1. Press the line of the component for which the serial number will be overwritten.
2. Aim the camera of your device so that the bar code is clearly visible on the display.
3. After a successful reading, the barcode will automatically appear on the appropriate line.
4. Press the "Safe" button.

To retrieve the serial numbers, press the Read button.

Thumbnail from the camera

Display of serial numbers

Saving

Reading