NATRAS
LSVA · RPLP · TTPCP

Vehicle recording system (VRS)
Operating instructions

VRS operating instructions

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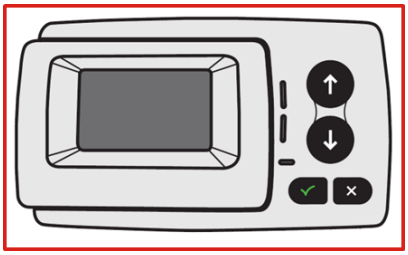
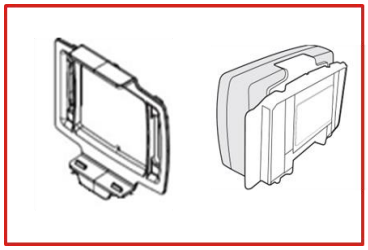
1 Assembly and commissioning

1.1 Scope of delivery VRS

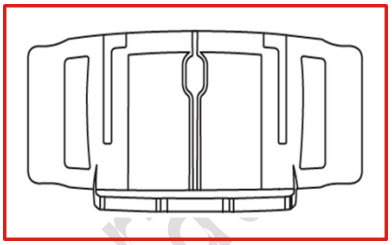


Vehicle recording system VRS

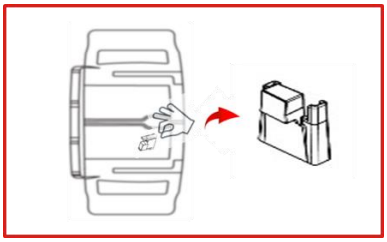


VRS bracket:

is pre-assembled on the VRS

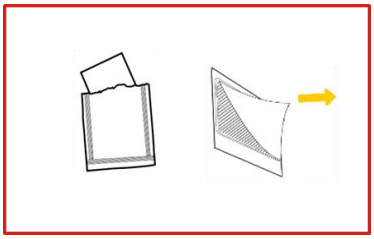


Bracket for installation in existing emotach mounting rails or directly on the windscreen.



Cable fixing (supplied loose with the bracket).

Connection cable for connection to an existing emotach supply cable or a pre-installed cable "open-end vehicle to adapter HVCIII (multiple use)".

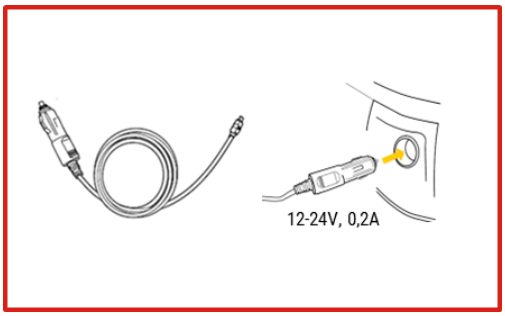


Cleaning cloth and

Adhesive strip for bracket (may already be pre-assembled).

1.2 Further optional accessories (subject to a charge)

1.2.1 Cable for connection to the on-board power supply (order number NAT-A010)



Cable for connection to the on-board power supply and connection information

When selecting "cable for connection to the on-board power supply", the vehicle owner expressly accepts that the VRS may not function correctly due to mechanical wear or tampering with the connection, which may impair the transmission of data. The possible consequences range from a subsequent manual declaration effort for the vehicle owner to official measures. NATRAS recommends a fixed installation with the cable set provided by the vehicle supplier instead.

1.3 Information - HVC - cabling options

1.3.1 Vehicles with existing cabling (emotach)

On vehicles with a built-in emotach, the existing emotach wiring and emotach holder rails can continue to be used. Rewiring is not necessary.

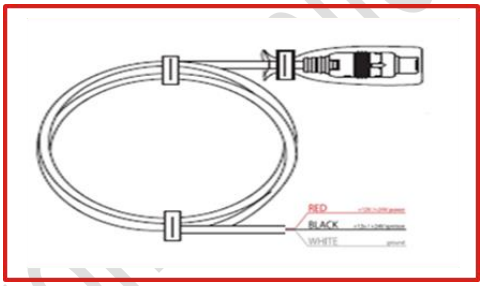
The scope of delivery of the VRS (HVC III/NATRAS vehicle recording system) includes both a connection cable for connection to the existing emotach supply cable and a bracket for attachment to the existing emotach holder rails.

1.3.2 New vehicles (delivery from 1 January 2025)

NATRAS offers all vehicle manufacturers and interested parties the following HVC cabling options (https://natras.ch/shop):

1.3.2.1 Connection cable "open-end vehicle to NATRAS VRS" (order number NAT-A0104)

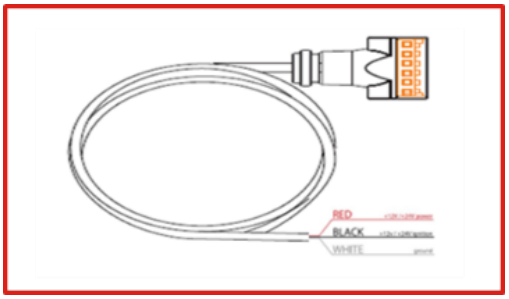
The standard cabling variant offers direct (adapterless) access to the NATRAS VRS and is intended for vehicle owners who have opted for the HVC basic supply and wish to work exclusively with NATRAS AG.



Connection cable "open-end vehicle to NATRAS VRS" (order number NAT-A0104)

1.3.2.2 Connection cable "open-end vehicle to adapter HVCIII (multiple use)" (order number NAT-A0102)

This cable corresponds to the plug variant of the existing HVC cabling and only needs to be connected to the vehicle's power supply in future. This variant enables the vehicle owner to use devices from authorised providers (e.g. EETS, ZNA, NATRAS) in addition to the NATRAS VRS if required.



Connection cable "open-end vehicle to HVCIII adapter (multiple use)"
(order number NAT-A0102)

1.4 Assignment of the VRS to a vehicle

On delivery, the VRS is not yet assigned to a vehicle. As the barcode / QR code on the back of the VRS is required for assignment, this step must be carried out first, **before** the VRS is installed in the vehicle.

An VRS can only be assigned to a vehicle registered with NATRAS.

The **NATRAS app** can be used to easily assign the VRS to the vehicle. The NATRAS app is available to download from the Google Store and Apple Store. Please follow the instructions in this app to complete the assignment correctly.

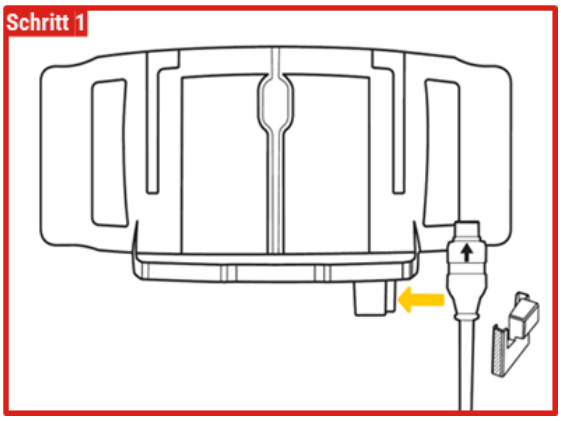
Assignment via the online-service-desk (OSD) is also possible.

1.5 Assembly of the VRS

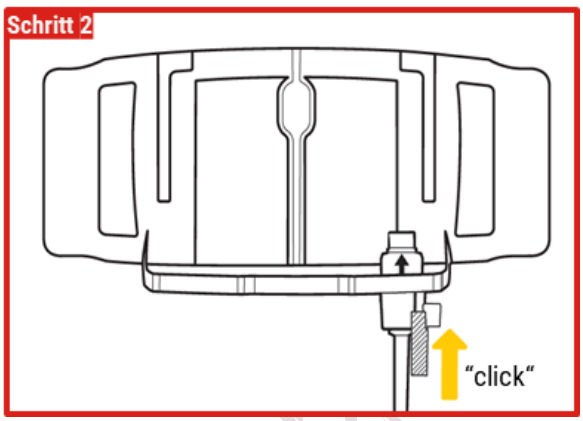
1.5.1 Installation in the vehicle with existing emotach mounting rails

This variant can be carried out under the following conditions:

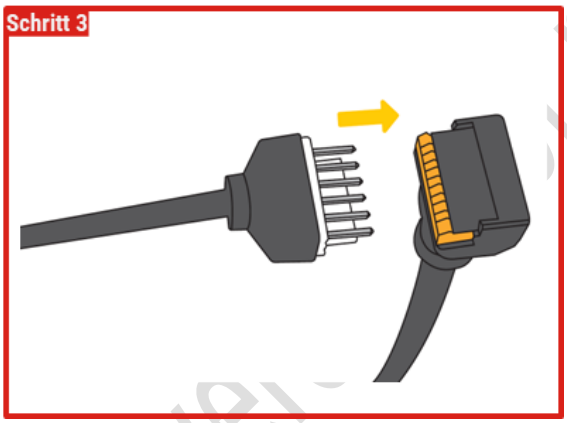
- There is a holding device for an emotach (HVC II VRS) on the windscreen of the vehicle. The emotach must first be removed and disposed of in accordance with the law (see chapter 4).



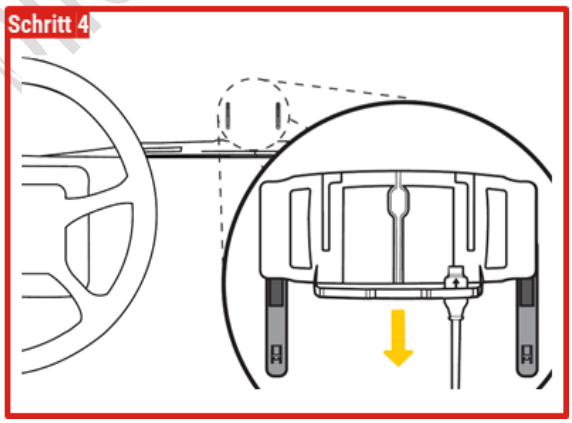
The connection cable is fed into the cable opening on the side of the VRS holder.



The connection cable is secured with the cable fixation. You will hear a clicking sound.

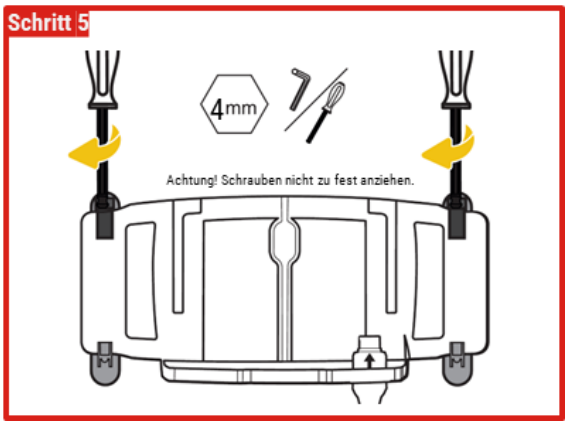


The connection cable is connected to the existing emotach cabling.



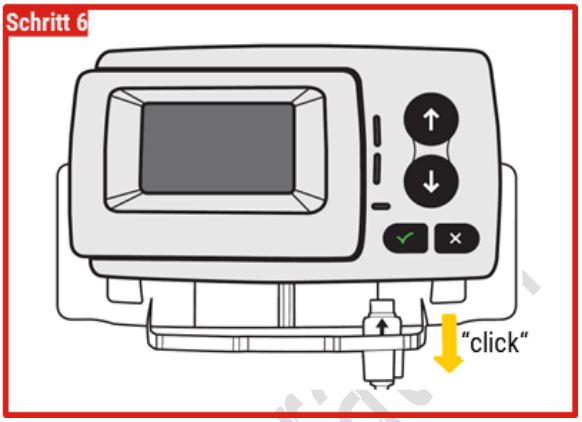
The screws on the two emotach retaining rails are loosened using a suitable tool (4 mm hexagon).

The VRS bracket is inserted into the existing emotach mounting rails.



Tighten the screws on the two retaining rails.

Caution: do not overtighten the screws.



VRS is inserted into the VRS holder from above. You will hear a click.

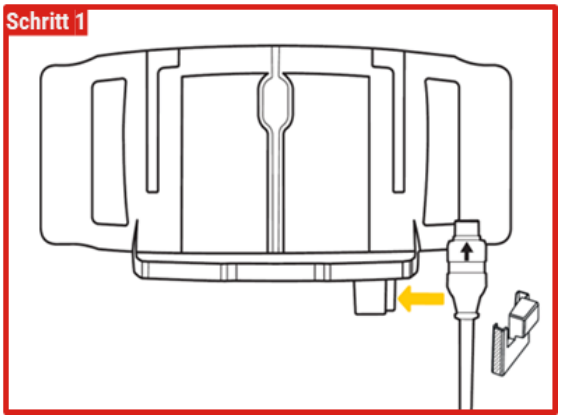
1.5.2 Installation in the vehicle without emotach mounting rails

If there are no emotach mounting rails in the vehicle or the existing mounting rails are not suitable for mounting the VRS, the VRS must be attached directly to the windscreen.

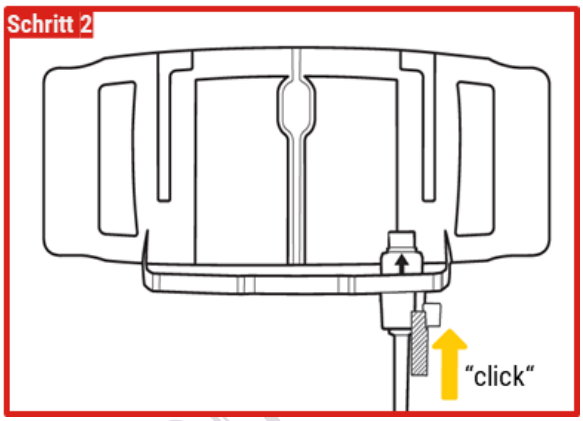
On vehicles with a metal-coated windscreen, the VRS must be fitted in an uncoated area.

The VRS must be installed in an area where the driver's visibility is not impaired.

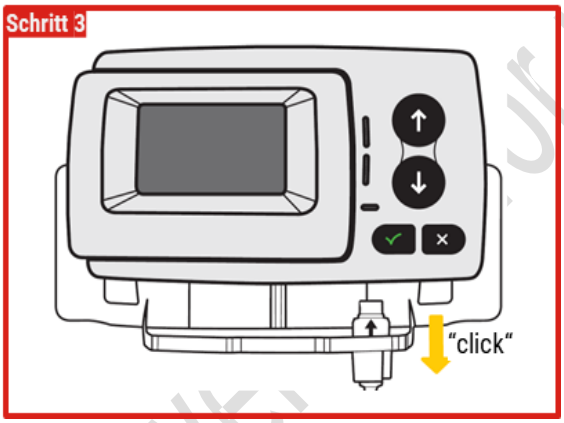
1.5.2.1 Installation in the vehicle with "open-end vehicle to NATRAS VRS" cabling



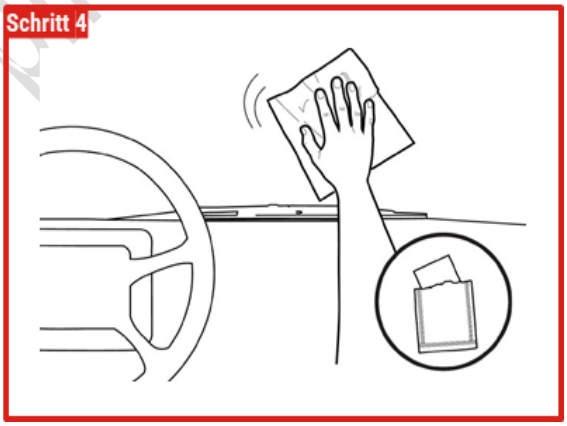
The existing cable for option 1 is fed into the cable opening on the side of the VRS bracket.



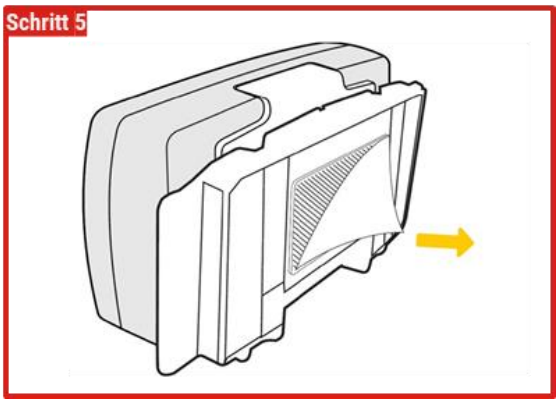
The existing cable of option 1 is fastened with the cable fixation. You will hear a click.



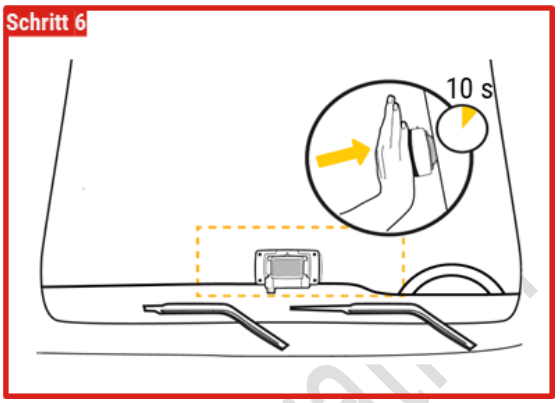
VRS is inserted into the VRS holder from above. You will hear a click.



The windscreen is cleaned in the intended mounting area using the cleaning cloth supplied. The installation area must be clean, dry and free of grease.

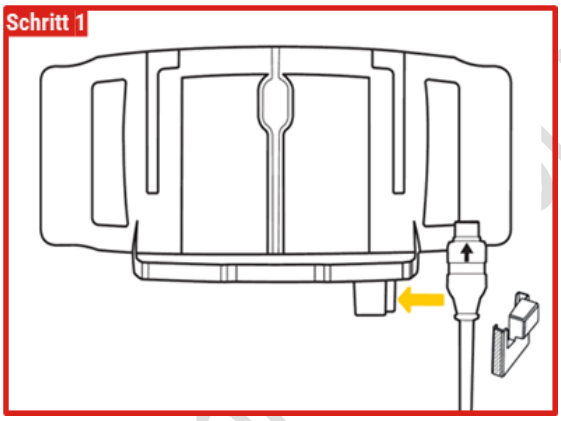


Remove the protective film from the adhesive device.

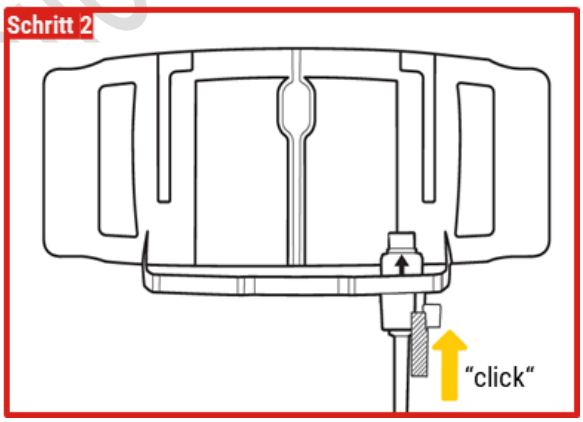


Press the VRS together with the bracket firmly into the intended installation position. Maintain the pressure for at least 10 seconds.

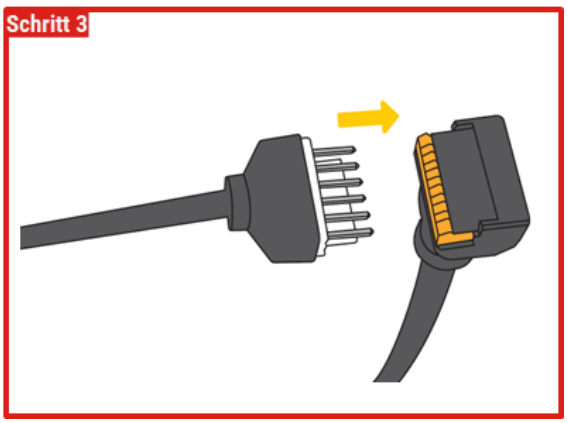
1.5.2.2 Installation in the vehicle with wiring "open-end vehicle to HVCIII adapter (multiple use)"



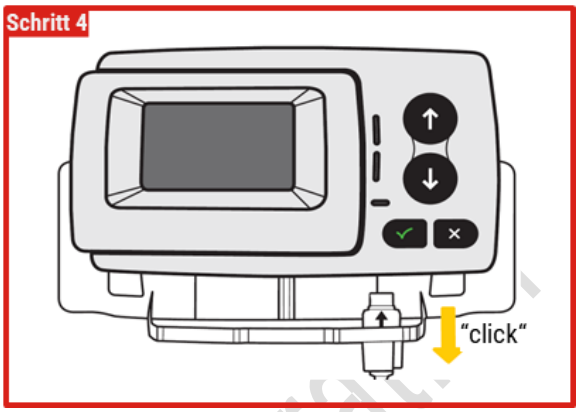
The supplied connection cable is fed into the cable opening on the side of the VRS holder.



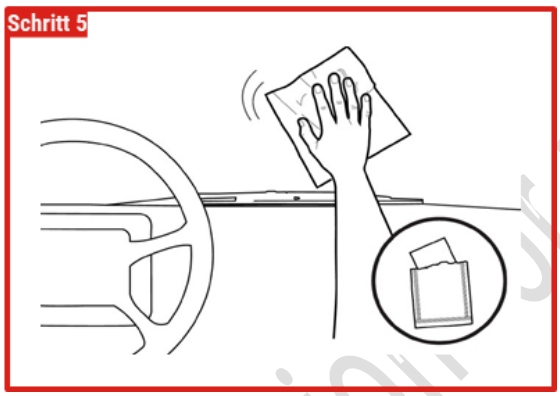
The connection cable is secured with the cable fixation. You will hear a clicking sound.



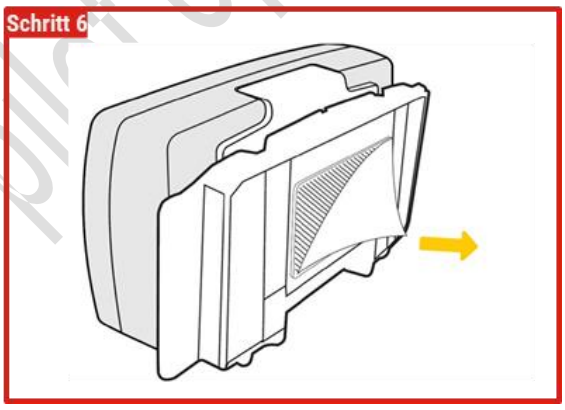
The connection cable is connected to the existing cabling.



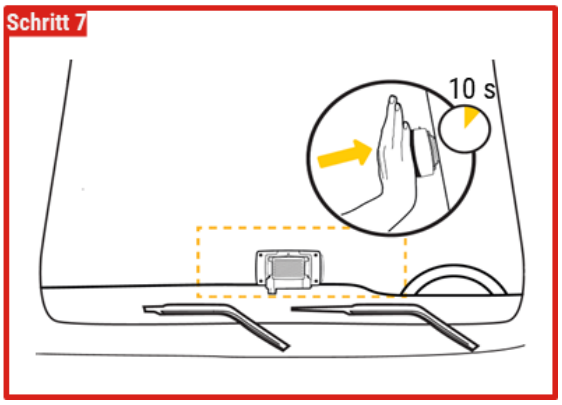
VRS is inserted into the VRS holder from above.



The windscreen is cleaned in the intended mounting area using the cleaning cloth supplied. The installation area must be clean, dry and free of grease.



Remove the protective film from the adhesive device.

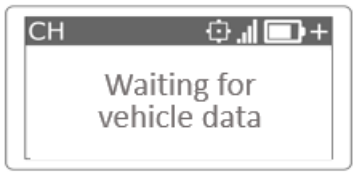


Press the VRS together with the bracket firmly into the intended installation position. Maintain the pressure for at least 10 seconds.

1.6 VRS Commissioning

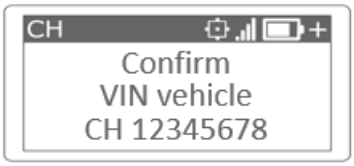
After **successful installation** in a **vehicle registered with NATRAS** and establishing the connection with the vehicle, the VRS must be put into operation. To do this, a few initialisation steps must be carried out **in the vehicle:**

1. Switch on the vehicle's ignition. If the VRS is correctly installed and connected to the power supply, it will become active.
2. The VRS then begins the initialisation sequence. It establishes a network connection and retrieves existing personalisation data:



This process can take up to 30 minutes during initial start-up and must not be interrupted.

3. Once the data has been successfully transmitted, the last 8 digits of the vehicle identification number (VIN) are displayed so that it can be checked whether the VRS is assigned to the correct vehicle:



If the displayed vehicle identification is correct, i.e. the VRS is in the correct vehicle, please confirm by pressing the button  . Otherwise, please contact NATRAS Support.

4. Once you have ensured that the VRS is installed in the correct vehicle, you can select the language of the user interface. The following languages are available:
    - German (preset)
    - English
    - French
    - Italian

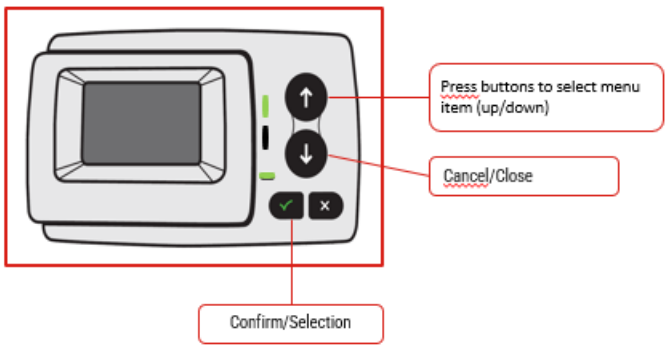
    Select the desired language using the buttons  or  and confirm your selection by pressing the button  . The language can easily be changed later (**see chapter 2.2.2**).
5. The VRS is now ready for operation.

2 Operation of the VRS

2.1 Operating and signalling elements

- Keys for data entry
- Display for showing important information and for controlling data input
- Light-emitting diodes (LED displays) that indicate the status of the VRS
- Buzzer for signalling tones

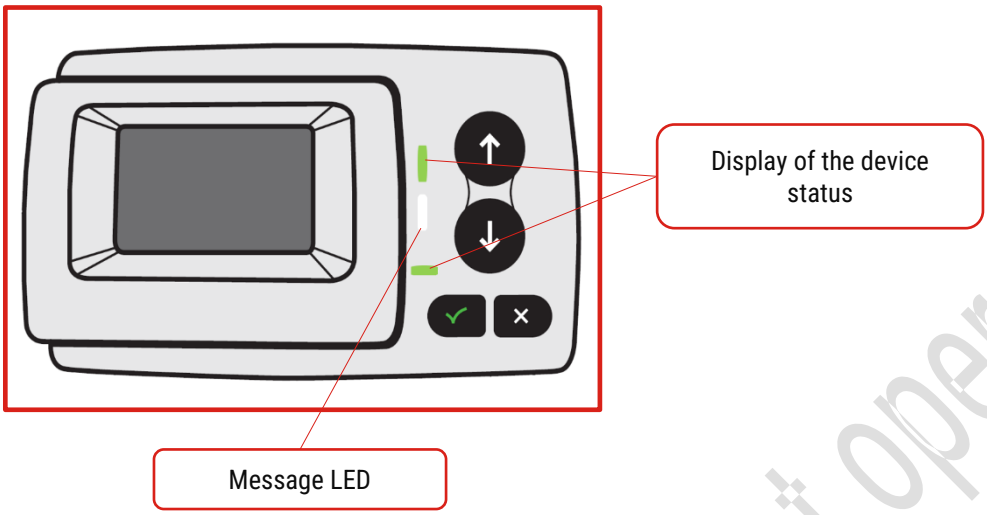
2.1.1 Keys



The buttons and are used to select entries in menus and submenus. The selection is confirmed with the button. The button is used to cancel the entry in a settings menu or to close an input menu.

For safety reasons, the buttons are blocked when the vehicle is travelling faster than 10 km/h.
For your own safety, please only make entries when the vehicle is stationary.

2.1.2 LED displays



The two LEDs for displaying the status of the VRS can indicate different states:

- LEDs are off:
  The VRS is inactive or the initialisation process is still running after a start.
- LEDs light up green:
  The VRS is active and fully functional.
- LEDs flash green:
  The VRS indicates a warning, a condition that is only a minor problem but could become a problem (see chapter 3).
- LEDs light up red:
  The VRS is active but not functional. Action by the driver is required (**see chapter 3**).

The message LED lights up white when a message is available for the driver.

2.1.3 Signal tones

The status of the VRS is also signalled acoustically each time a change is made by emitting one of the following beeps once:

- A medium-length tone: OK
  The VRS is active and functional.

  This signal is emitted when a warning or error status of the VRS is rectified and the VRS is functional again, e.g. when an interrupted power supply is restored or a data connection that has been interrupted for a longer period can be resumed.

- Four short beeps: Error signal
  The VRS is active but not functional. Action by the driver is required (**see chapter 3**).

  This signal is output when the VRS detects an error, e.g. an interrupted power supply that leads to a critically low battery charge level or a prolonged interruption in the data connection.

- Two long beeps: Warning
  The VRS has detected a condition (e.g. interruption of the power supply) that may require action by the driver. The driver is required to pay increased attention.

Details on the error states and the respective acoustic signals can be found in **chapter 3** are shown.

2.1.4 Status indication on the display

When the VRS is active, the first line of the display shows important statuses:

Symbol	Description of the
CH	Indicates that the VRS is recording data for the HVC. Is displayed within the customs territory (Switzerland and Liechtenstein).
	The VRS battery is fully charged. The battery charge level is displayed in 20% increments.
	The VRS battery is flat.
	Shows the availability of the connection to the mobile network. The number of bars represents signal strength.
	Position data acquisition is active and provides data with the required accuracy.
	It indicates that the external power supply is connected.
	A new message is available (**see chapter 2.3**)

2.2 Changing settings

The VRS buttons are deactivated when the vehicle is travelling faster than 10 km/h.

For your own safety, please only make entries when the vehicle is stationary.

2.2.1 Register trailer

For vehicles within the Swiss customs territory (including Liechtenstein):

Before starting each journey, it must be checked whether the trailer is correctly declared at the VRS. If necessary, a declaration must be made.

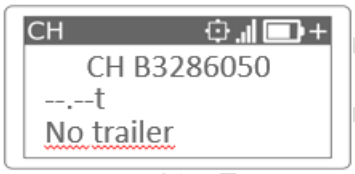
After each trailer change, the current trailer must be correctly declared at the VRS before continuing the journey.

For vehicles outside the Swiss customs territory:

Before entering Swiss customs territory, it must be checked whether an existing trailer is correctly declared in the VRS and must be declared if necessary.

When carrying trailers that are not subject to duty, the vehicle type trailer or semi-trailer and the weight must be declared as 00.00 tonnes.

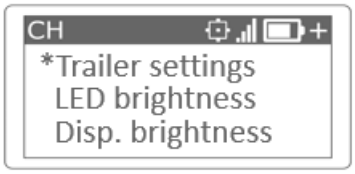
On the active VRS, the currently declared trailer is always shown on the display. The following illustration shows the status of the display if no trailer is registered:



The registration of a trailer takes place in two steps:

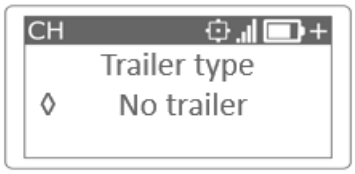
1. selection of the trailer type.
2. enter the trailer weight (total weight according to the vehicle license).

To start the login, the settings menu must be called up. To do this, press the button. 
In the settings menu, the last selection, usually the trailer registration, is selected (marked with *).

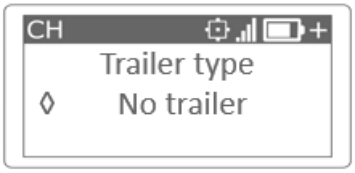
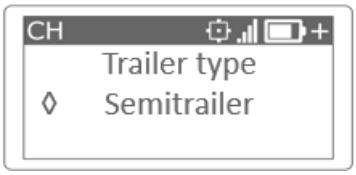


Use the push buttons ↑ and ↓ to navigate until the "Trailer" entry is selected. To start, press the button ✓.

The last selected trailer type is displayed:

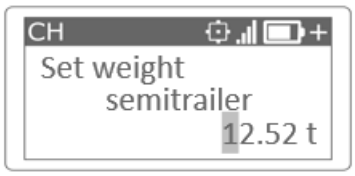


Starting with the "No trailer" option, the other options can be selected as follows:

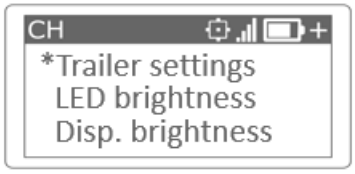
Trailer	Press the button ↑	
No trailer	Press the button ↓	
Semi-trailer	Press the button ↓	

Confirm your selection by pressing the button ✓. To exit the menu without changing the registered tag, press the button ✕.

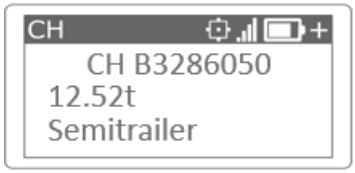
If one of the two options Trailer or Semi-trailer has been selected, the menu for entering the trailer weight is activated automatically:



The last weight entered is preset, the first digit of the number flashes. Press the arrow buttons or to increase or decrease the flashing digit by 1. The button confirms the entry, the flashing jumps one digit to the right.
After confirming the last digit of the weight, the entry is accepted as the weight and the settings menu is displayed:



Pressing the button exits the settings menu and the registered trailer type is displayed in the VRS overview screen:



Before starting each journey, please ensure that both the type of trailer you are carrying and the weight of the trailer are entered correctly on the VRS.

Incorrect or missing trailer registrations must be corrected or completed subsequently (within 10 days) in the outage solution, which is an integral part of the Online-Service-Desk (OSD).

2.2.2 Changing the language

To set the language, start the settings menu by pressing the button. Press the button until the option to select the language is highlighted:

Press the button to display the currently set language. Use the arrow buttons and to navigate until the desired language is displayed. The following languages are available for selection:

- German
- English
- French
- Italian

Press to confirm the selected language and to return to the menu settings.

2.3 Retrieving messages

The VRS can display messages to the driver, e.g. if the status of the VRS changes. In this case, the message LED lights up white and the message is shown on the display for approx. 15 seconds.

The last message can then be called up and shown on the display by selecting the "**last message**" submenu. To do this, press the button to open the settings menu. Use the arrow buttons and to select the "last message" submenu and press to display the message.

3 Operation and monitoring of functionality

The VRS signals its status and therefore its functionality using the display, the status LEDs (**see chapter 2.1.2**) and, if the status changes, by means of an acoustic signal (**see chapter 2.1.3**).

The VRS is in idle mode before the vehicle is put into operation:

- status LEDs are off
- display is off

The VRS wakes up from sleep mode when any button is pressed or the vehicle is set in motion. In many cases, the vibration when getting into the vehicle or closing the doors is sufficient.

Outside the customs territory (Switzerland and Liechtenstein), the status LEDs light up red. The information shown on the display (symbols in the status display) does not have to be observed. Any change to the signalled status (status LEDs flash or light up red) **outside the customs territory** is meaningless and can be ignored.

The following list of conditions applies to VRS in moving vehicles within the customs territory:

Status LEDs	Acoustic signal	Display (status display)	Condition	Action
Green light	---	The following symbols are displayed:  Battery charge level at least 60%.	Functional	---
Flashing green	Warning (2 beeps)	The symbol  is not displayed. The battery charge level shows 80% or less.	Functional, but the power supply is not guaranteed	Check that the plug in the VRS is inserted correctly. If using a connection cable with an emotach plug, also check this connection.
Flashing green	Warning (2 beeps)	The symbol  is not displayed. Battery charge level: 	Still functional, but the power supply has not been guaranteed for some time. Failure of the device is imminent.	Check that the plug in the VRS is inserted correctly. If using a connection cable with an emotach plug, also check this connection. When using a cable for the on-board connection, check that the plug is fully inserted.
Red light	Error (4 Beep)	At least one of the following symbols is not displayed: 	Not functional	Contact NATRAS Support and register the journey in the failure solution manually.

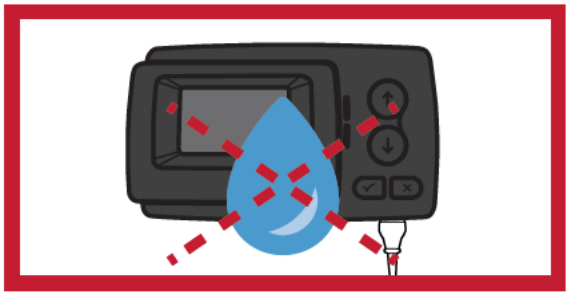
After reporting a failure of the VRS to NATRAS Support, the journey can be continued but must be manually logged into the failure solution within 10 days.

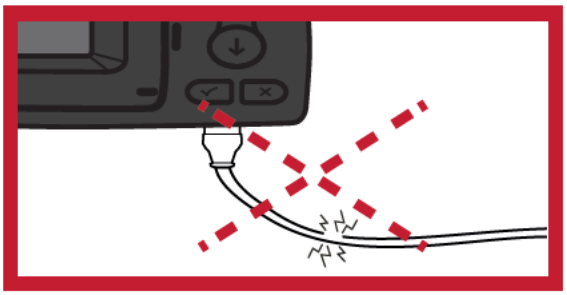
This applies to all further journeys made by the vehicle until a replacement for the defective VRS has arrived and been installed in the vehicle.

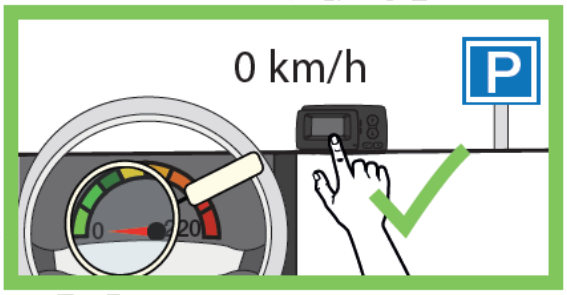
4 Instructions for dismantling and disposing of the emotach

Removal guide Emotach

5 Safety instructions







6 Frequently asked questions (FAQ)

- **Question:** what should I do if I encounter a problem that is not covered in this manual?
- **Answer:** *if a problem occurs that is not described here, please send an e-mail to support@natras.ch*

- **Question: h**ow can I submit feedback or suggestions for improving the application?
- **Answer:** *we welcome feedback and suggestions. These can be sent directly by e-mail to improvements@natras.ch. Please note that suggestions for improvement must be approved by the client (FOCBS).*