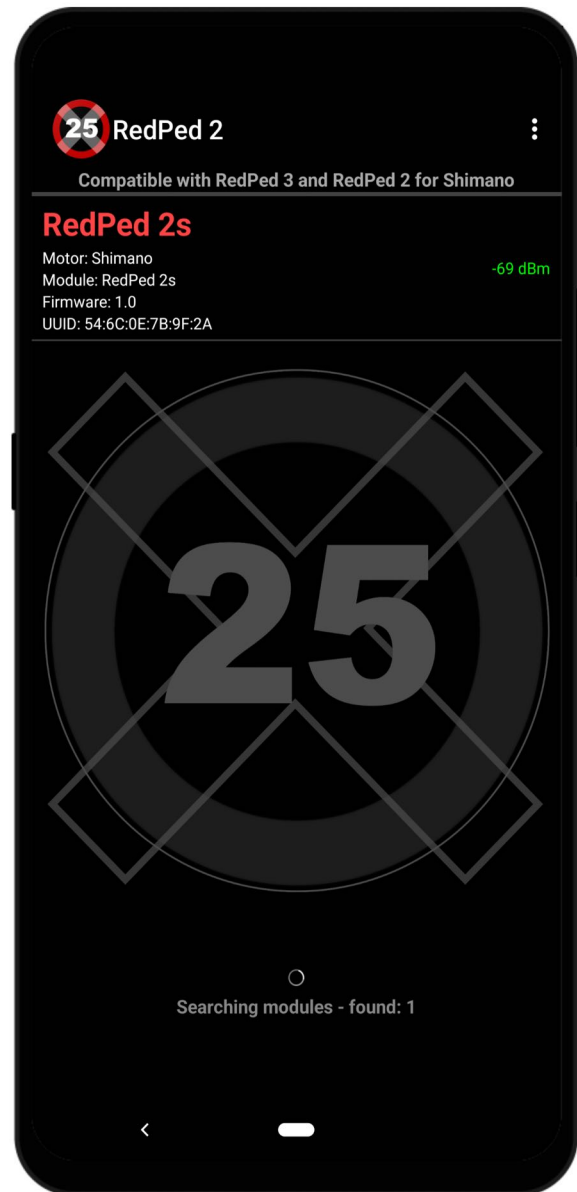


# OPERATING MANUAL

CREATION DATE - FEBRUARY 2024



REDPED 2 APP  
WITH  
REDPED 2S FOR SHIMANO E8000  
REDPED 2S FOR SHIMANO EP8

Tuning module for Pedelec-  
Mountainbikes with

- Shimano Steps E5000
- Shimano Steps E6000
- Shimano Steps E6100
- Shimano Steps E7000
- Shimano Steps E8000
- Shimano Steps DU-EP800

Production date: from March 2024

Hardware Version: 1.0

Firmware Version: 1.0

# TABLE OF CONTENTS

1. Important safety instructions	3
2. Comply with the requirements for safe use	3
2.1. Know the intended use	3
2.2. Know and comply with operating restrictions	4
2.3. Know and follow the installation requirements	5
2.4. Owner's obligation	7
2.5. Obligation of every user	7
3. Warranty and liability	7
3.1. Personal injury - further that to be considered disclaimers	8
3.2. Property damage - further exclusions of liability to be considered	8
4. Functional description	9
4.1. Functional diagram	9
5. Technical data	10
5.1. RedPed 2s for Shimano E8000	10
5.2. RedPed 2s for Shimano EP8	11
6. Install	12
6.1. Know the installation example	12
6.2. Know the tools required	12
6.3. Remove motor protection cover	12
6.4. Disconnect and cables	13
6.5. Plug in the tuning module	13
6.6. Perform initialization	15
6.7. Complete installation	15
7. RedPed 2 App	16
7.1. Module search	16
7.1. Database	16
7.2. Main screen - optical settings	17
7.3. Speedo, tuning, settings, security	18
8. Explanations and notes	20
8.1. Pairing	20
8.2. Max speed	20
8.3. Tuning activation with app	20
8.4. Tuning activation with ebike	20
8.5. Tuning timer	20
8.6. Divide speed at	20
8.7. Show real speed in display	20
8.8. Combination for visibility	21
8.9. Visibility	21
8.10. Wheel size	21
8.11. Afterrun	21
8.12. Mountain mode	21
8.13. PIN	21
8.14. Reset	21
9. Firmware update	22
10. Check before each use	23
11. Ride a tuned Pedelec-Mountainbike	23
12. Disposal	23
13. EG-/ EU-declaration of conformity	24

# 1. IMPORTANT SAFETY INSTRUCTIONS

Only use the interchangeable equipment "tuning module" for the purpose described in these instructions. Otherwise you will endanger yourself or damage parts of your Pedelec-Mountainbike. You endanger yourself and others if you install or operate the interchangeable equipment incorrectly or if you do not observe the safety or warning instructions. Serious injuries or considerable damage to property may result.

## 2. COMPLY WITH THE REQUIREMENTS FOR SAFE USE

For safe use of the tuning module in your Pedelec-Mountainbike, it is first essential to read and understand these operating instructions in full.

### These operating instructions

- informs you about the intended use,
- the installation and use requirements,
- important usage restrictions,
- obligations of the owner and the user,
- warranty and liability conditions and
- guides you step by step for correct installation and safe use
- warns you of potentially unsafe or dangerous situations with conspicuous safety and warning notices and uses.

### Know and observe all contents of the operating instructions

- It is essential that you take the time to read these operating instructions carefully before you start by installing the tuning module.
- Keep this operating manual in a safe place and yet to hand so that you can access it at any time even after installation to have the important and safety information for use.
- Make these operating instructions available to anyone else who uses your tuned Pedelec-Mountainbike.
- Make sure that everyone who is allowed to ride your tuned Pedelec-Mountainbike has read and understood the operating instructions before any use.
- Instruct the user in the safe use of the tuned Pedelec-Mountainbike on the basis of this, before you hand over your tuned Pedelec-Mountainbike to other people
- It is imperative that you pass these operating instructions on to the future owner if you use the tuning module or you want to sell a tuned Pedelec-Mountainbike.

## 2.1. KNOW THE INTENDED USE

The tuning module shifts the cut-off threshold of the motor support of your Pedelec-Mountainbike. Thus, with the installation of the tuning module higher speeds can be achieved with electric motor support. However, intended use also includes compliance with all of the following without exception

- Use restrictions and
- Installation requirements and the
- Obligations of the owner and the user.

### Intended use of the "exchangeable equipment"

According to the product regulations of the European Union, the tuning module is classified as "interchangeable equipment" in the sense of Directive 2006/42/EC for machinery, Article 2b).

### Know meaning

The tuned Pedelec-Mountainbike remains within the scope of the European Machinery Directive even after the tuning module has been installed. **If the intended use is strictly observed, a „non-essential change“** of the „machine“ can be assumed. This means that the applicable safety requirements of the „machine“ Pedelec-Mountainbike by the manufacturer of the tuning module checked within a risk assessment and also with the use of the tuning module as continued have been assessed as complied with.

### Safety and protection devices

The safety and protection devices of the Pedelec-Mountainbike remain unaffected by the installation of the tuning module.

## 2.2. KNOW AND COMPLY WITH OPERATING RESTRICTIONS

### **Strictly adhere to the usage restrictions**

The installation of the tuning module in your Pedelec-Mountainbike is associated with usage restrictions. The "machine" bicycle with electric motor assistance is being changed. Although there is no increase in performance, however, the achievable speed of more than 25 km/h means that

- use on public roads or on public roads is no longer permitted,
- use without appropriate protective clothing and a crash helmet after an accident has occurred can relieve you of your obligation to pay benefits if you fall with the consequences of injury,
- the permissible circle of users must be further restricted by the owner of the vehicle, taking into account the physical and mental suitability, before the Pedelec-Mountainbike is handed over to other persons,
- the owner of the tuned Pedelec-Mountainbike must always prevent misuse and misapplication, also by other persons, as well as
- necessary maintenance and inspection intervals according to the original manufacturer's specifications and usual battery charging cycles or those specified by the manufacturer may be considerably shortened.

### 2.2.1. DO NOT USE IN PUBLIC AREAS ANY MORE

Pedelec-Mountainbikes for use on public roads or public ways with a permissible speed of > 25 km/h are subject in Europe to Regulation 168/2013/EU, the Vehicle Regulation. Further approval requirements in non-European countries may apply. The purchase of the tuning module does not entail any approval for operation in public areas. Therefore, participation in public road traffic and driving on public roads is prohibited after installation of the tuning module.

This also applies and in spite of the "non-substantial change" of the "machine" Pedelec-Mountainbike recognized by the tuning module manufacturer when used as intended.

#### **Prevent misuse and abuse**

Due to the higher speeds with electric motor assistance, you will lose your license to drive the tuned Pedelec-Mountainbike to use on public roads or on public roads without any further legal authorization.

### 2.2.2. USE ONLY WITH PROTECTIVE CLOTHING AND HELMET

After installing the tuning module, a Pedelec-Mountainbike can reach speeds of up to reach 45 km/h.

#### **Reduce the increased risk of accidents**

Reaching such speeds increases the risk of a fall even with suitable strength and design of the vehicle. The use of the tuned Pedelec-Mountainbike without appropriate protective clothing and crash helmet can release accident insurers from their obligation to pay benefits after a fall has occurred with injury consequences.

- Always wear suitable protective clothing and a crash helmet while using your tuned Pedelec-Mountainbike to protect yourself from increased accident risks.
- Insist that every user of your tuned Pedelec-Mountainbike always wears appropriate protective clothing and a crash helmet during use.

### 2.2.3. RESTRICT CIRCLE OF USERS

A Pedelec-Mountainbike can reach electric motor-assisted speeds of up to 45 km/h after installation of the tuning module. Reaching such speeds can lead to the fact that the permissible circle of users determined by the Pedelec-Mountainbike manufacturer must be further restricted. Such a restriction must be determined by the owner of the tuned Pedelec-Mountainbike on his own responsibility, taking into account the physical and mental fitness of the persons to whom the tuned Pedelec-Mountainbike is given for use.

#### **Also consider the terrain to be traveled**

A significant factor in determining the permissible users should also take into account the

- of the terrain to be traveled.  
Clearly define the permission for use before giving it to other people.
- Always lock your tuned Pedelec-Mountainbike when you park it.

This is how you prevent misuse and abuse by other people.

## 2.2.4.PREVENT ABUSE AND MISUSE

### **Use in public traffic means abuse**

Due to the higher speeds with electric motor support, you lose the permission to use the tuned Pedelec-Mountainbike in public road traffic or on public paths without further legal approval.

- Only use your tuned Pedelec-Mountainbike on private, secured property or race tracks.
- Never drive on public paths or areas that you have not previously been able to securely block off from being entered by others.
- Also prevent another person from using your tuned Pedelec-Mountainbike in public traffic or on public roads used.
- Always lock your tuned Pedelec-Mountainbike when you park it. This will prevent misuse and abuse, even by other people.

## 2.2.5.OBSERVE SHORTENED MAINTENANCE AND INSPECTION INTERVALS

Due to the higher speeds with electromotive assistance, higher loads and forces are placed on everyone Act on vehicle parts. Reaching higher speeds increases the wear and tear on all vehicle parts, especially the brake system and all Parts of the drive system, even if the vehicle is of suitable strength and construction.

### **Define and carry out shortened inspection and maintenance cycles**

Shortened inspection and maintenance cycles must be determined by the owner of the tuned Pedelec-Mountainbike on his own responsibility, taking into account the conditions of use.

- Before each use of your tuned Pedelec-Mountainbike, perform a comprehensive inspection of the vehicle.
- Check the condition and function imperatively
- the brakes and their functional components,
- the vehicle frame,
- the steering and its functional components,
- the drive and its functional components as well as
- the saddle and its functional components.
- Also observe all inspections not mentioned here that are carried out by the manufacturer of your Pedelec-Mountainbike are prescribed for every use. This list does not replace the original operating instructions for the Pedelec-Mountainbike manufacturer.
- Determine further inspection and maintenance cycles in accordance with the manufacturer's instructions for your Pedelec-Mountainbike
- Shorten this time according to your application conditions.
- If necessary, coordinate this with your specialist company that will carry out the inspection and maintenance work becomes.

This ensures that the shortened inspection and maintenance intervals are adhered to.

## 2.2.6.OBSERVE SHORTENED BATTERY CHARGING CYCLES

The "machine" bicycle with electric motor assistance is changed. Although there is no increase in power, the achievable speed of more than 25 km/h leads to the fact that the maximum possible power from the battery is taken regularly and over longer time(s). This leads to an earlier discharge of the available battery capacity than you know from your Pedelec-Mountainbike or was specified by the manufacturer of the Pedelec-Mountainbike in the operating instructions. Take this into account during your planned rides.

## 2.3. KNOW AND FOLLOW THE INSTALLATION REQUIREMENTS

### **Meet requirements for strength and design as well as for the drive system**

For a safe use of the tuning module in your Pedelec-Mountainbike, your vehicle must also meet some requirements.

### **City or Trekking bikes are usually not equipable**

City or Trekking bikes often do not meet the requirements for strength and construction, or the requirements cannot be tested due to a lack of manufacturer specifications.

### **Prevent abuse and misuse**

Furthermore, in the case of tuned City or Trekking bikes, it cannot be assumed that these will actually only be used on private, secured properties or race tracks. Misuse and misapplication contrary to the intended use and restrictions mentioned under point 2.1 would have to be feared. For these reasons, the installation of the tuning module is only permitted for Pedelec-Mountainbikes that demonstrably meet the following requirements according to their manufacturer's specifications.

## 2.3.1.REQUIREMENTS FOR STRENGTH AND DESIGN AND CONFIRM

Strength and construction requirements are governed by EN 15194 and EN ISO 4210-2 and must be confirmed as applied by the manufacturer of your Pedelec-Mountainbike.

### Prevent increased risk of accidents due to insufficient strength

Due to the higher speeds with electric motor assistance, higher loads and forces will act on all vehicle parts. Increased accident risks due to part breakage and part failure on the entire vehicle can only be largely ruled out for vehicles that have been demonstrably designed and built in accordance with **both** product standards.

- Check the EC declaration of conformity from the manufacturer of your Pedelec-Mountainbike.
- **Only** use the tuning module in your Pedelec-Mountainbike if the manufacturer of your Pedelec-Mountainbike mentions the **two** product standards EN 15194 and EN ISO 4210-2 as applied.

In this way you ensure that the necessary requirements for strength and design are met.

### Normative requirements met?

Before installation, confirm the references in the EC declaration of conformity from the manufacturer of your Pedelec-Mountainbike:

- Is the EC declaration of conformity verifiably valid for the vehicle to be equipped?
  - EN 15194 ..... mentioned in the declaration of conformity?
  - EN ISO 4210-2 ..... mentioned in the declaration of conformity?
- ➔ Only if **both standards** are named as applied, the requirements for strength and construction are met to go out.
- ➔ **Never** use the tuning module in vehicles for which you cannot clearly determine these requirements and prove them by means of the EC declaration of conformity of the Pedelec-Mountainbike manufacturer.

## 2.3.1.CHECK AND CONFIRM REQUIREMENTS FOR THE DRIVE SYSTEM AND DISPLAY

### Prevent damage and malfunctions

The tuning module is adapted to certain drive systems and display types. Use in vehicles with unsuitable drive systems and/or display types will lead to malfunctions or damage to the Pedelec-Mountainbike or the tuning module.

- Check the equipment on your Pedelec-Mountainbike.
- Only use the tuning module in your Pedelec-Mountainbike if you are sure that your Pedelec-Mountainbike equipment matches the identify the drive systems and display types listed below.

MODULE	MODUL VERSION	MOTOR - SHIMANO STEPS	DISPLAY	MOTOR FIRMWARE
RedPed 2s for Shimano E8000	Hardware: 1.0 Firmware: 1.0	E5000, E6000, E6100, E7000, E8000	all	E8000: v4.9.5
RedPed 2s for Shimano EP8	Hardware: 1.0 Firmware: 1.0	DU-EP800	all	EP8: v4.1.11

The tuning function of the RedPed module can only be guaranteed up to the motor firmware versions specified above. If the Shimano motor is **updated to a higher firmware version after the purchase** of the module, then the tuning **function** can **no** longer be **guaranteed**.

**Compatible with Di2 Shifting**

### Requirements for the drive system and display met?

Confirm the equipment of your Pedelec-Mountainbike **before** installation . The Pedelec-Mountainbike to be equipped comes with a

- Equipped with the above drive systems as well
  - Equipped with a display type suitable for the drive system?
- ➔ A functioning and safe operation can only be assumed if you can confirm **both** prerequisites.
- ➔ Never use the tuning module in vehicles for which you cannot clearly determine and prove the two requirements.

## 2.4. OWNER'S OBLIGATION

Any user must be instructed accordingly by the owner of the tuned Pedelec-Mountainbike on the basis of these operating instructions, as well as informed about the special restrictions of use and risk increases due to the increased speed.

### **The owner of the tuned Pedelec-Mountainbike ensures that**

- all requirements for safe use
- as well as for the intended use are complied with and
- these operating instructions are always available to every user.

### **The owner of the tuned Pedelec-Mountainbike undertakes,**

to make the tuned Pedelec-Mountainbike available only to persons who

- have read and understood these operating instructions and
- have been instructed in the safe and proper use of the tuned Pedelec-Mountainbike.

## 2.5. OBLIGATION OF EVERY USER

### **Every user is obliged**

- to read these operating instructions completely and to observe them as well as
- to follow all safety and warning notices without exception,
- to use the tuned Pedelec-Mountainbike only in technically perfect condition and in accordance with the intended purpose, in a safety-conscious and hazard-conscious manner, observing these operating instructions, and
- to immediately repair any damage or malfunctions detected which could impair safety, or have them repaired if necessary.

## 3. WARRANTY AND LIABILITY

### **Warranty and liability of the manufacturer of the tuning module**

Warranty and liability claims are excluded by the manufacturer of the tuning module in the event of direct or indirect personal injury or property damage if they are attributable to one or more of the following causes:

- Increased wear or breakage of components of the Pedelec-Mountainbike, especially parts of the brake system and/or the drive,
- Non-compliance with these operating instructions or
- improper use of the tuning module or the Pedelec-Mountainbike with integrated tuning module or
- Failure to observe the restrictions on use in these operating instructions or
- Use or operation with operating conditions that do not comply with these operating instructions, or
- improper installation, commissioning, maintenance or repair not specified in these operating instructions or
- after unauthorized structural, hardware or software modifications to the tuning module itself or to the Pedelec-Mountainbike approved for the tuning module or its equipment.

### **The installation and operation of the tuning module is at your own risk**

The manufacturer of the tuning module assumes no liability for damage caused by operation or related to the installation of the tuning module.

### **The technical and legal consequences mentioned may be incomplete**

In addition to the technical and legal consequences mentioned in these operating instructions, further requirements may apply depending on the place of operation.

- ➔ Before installing the device yourself, inform yourself about possible further technical and legal consequences and requirements that you must comply with for the operation of the tuned Pedelec-Mountainbike.

### **Warranty, guarantee and liability by the manufacturer Pedelec-Mountainbike**

Due to the higher speeds with electric motor assistance, higher loads and forces will act on all vehicle parts.

Reaching higher speeds increases the wear of all vehicle parts, especially the brake system and all parts of the drive system, even with suitable strength and design of the vehicle.

For this reason, liability, warranty and guarantee claims against the dealer or manufacturer of the Pedelec-Mountainbike will expire or be severely limited with the use of the tuning module.

### 3.1. PERSONAL INJURY - FURTHER THAT TO BE CONSIDERED DISCLAIMERS

A Pedelec-Mountainbike can reach electric motor-assisted speeds of up to 45 km/h after the tuning module has been installed.

#### **Reduce increased hazard risks**

Reaching such speeds increases the risk of a fall and resulting injury to persons even with suitable strength and design of the vehicle. The use of the tuned Pedelec-Mountainbike without appropriate protective clothing and crash helmet can release accident insurance companies from their obligation to pay benefits after a fall has occurred with injury consequences or reduce them considerably.

- Always wear suitable protective clothing and a crash helmet while using your tuned Pedelec-Mountainbike to protect yourself from increased accident risks.
- Insist that every user of your tuned Pedelec-Mountainbike always wears suitable protective clothing and a crash helmet during the entire period of use.

#### **Reduce accident risk in monetary terms**

- Precisely define your conditions of use and user groups to be insured.
- Take out insurance appropriate to the conditions of use and the user group for the use of your tuned Pedelec-Mountainbike.

How to prevent monetary risks from injuries caused by falls.

### 3.2. PROPERTY DAMAGE - FURTHER EXCLUSIONS OF LIABILITY TO BE CONSIDERED

A Pedelec-Mountainbike can reach electric motor-assisted speeds of up to 45 km/h after the tuning module has been installed. Damage caused in connection with the operation of the tuned Pedelec-Mountainbike may no longer be covered by private liability insurance. It is therefore advisable to take out coverage through a specially designed insurance policy.

#### **Reduce increased liability risks**

Reaching such speeds increases the risk of causing property damage.

#### **Reduce the risk of property damage in monetary terms**

- Precisely define your conditions of use and user groups to be insured.
- Take out liability insurance appropriate to the conditions of use and the user group for the use of your tuned Pedelec-Mountainbike.

In this way, you prevent monetary risks in the event of damage to other people's property during the operation of the tuned Pedelec-Mountainbike.



## 4. FUNCTIONAL DESCRIPTION

The tuning module offers the following functions after installation:

- Individual activation code can be set via the app
- Reduction speed freely adjustable via the app
- Correct display of speed and distance covered in the app
- Display of the real speed as a decimal number in the Pedelec-Mountainbike display
- Optional correct mileage after removal of the tuning module

### Setting options

All settings are made via the RedPed app for iOS or Android.

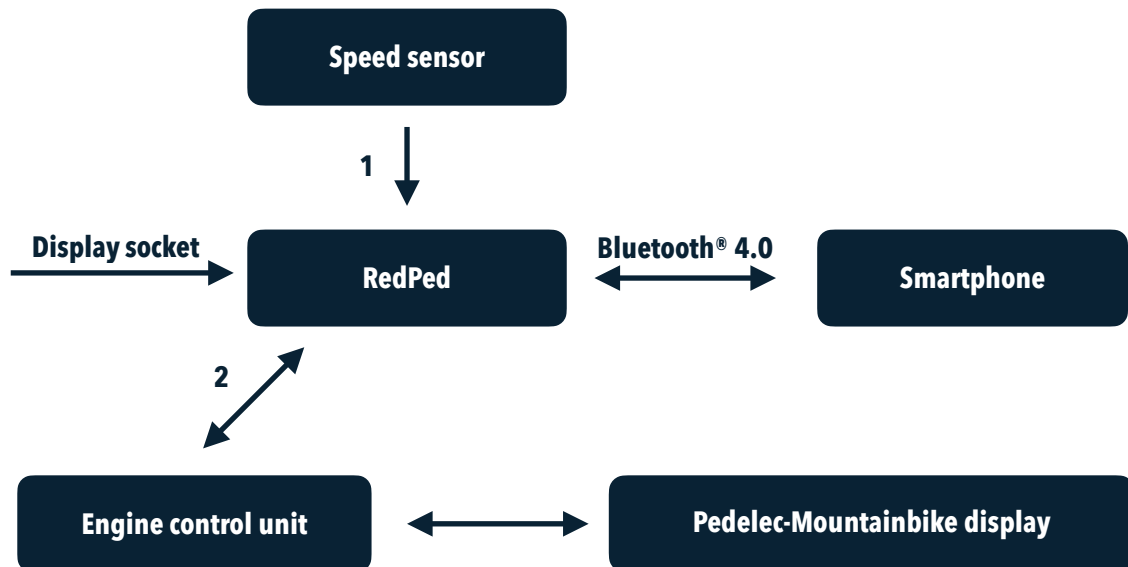
### Protected electronics

The electronics are covered with a layer of varnish and protected by a heat-shrinkable tube with internal adhesive.

### Safety and protection devices

Safety and protective devices of the Pedelec-Mountainbike remain untouched by the installation of the tuning module.

### 4.1. FUNCTIONAL DIAGRAM



The RedPed module is connected between the speed sensor and the motor. It measures the actual speed (1) and generates its own speed signal (2) for the motor control unit. The assistance limitation at 25 km/h is outsmarted by generating a lower speed (2). This causes various values, such as mileage, to be calculated incorrectly by the engine control unit, but the correct values can be read out via the smartphone using the RedPed app.

The RedPed is supplied with power via a free display socket and is always on.

## 5. TECHNICAL DATA

### 5.1. REDPED 2S FOR SHIMANO E8000



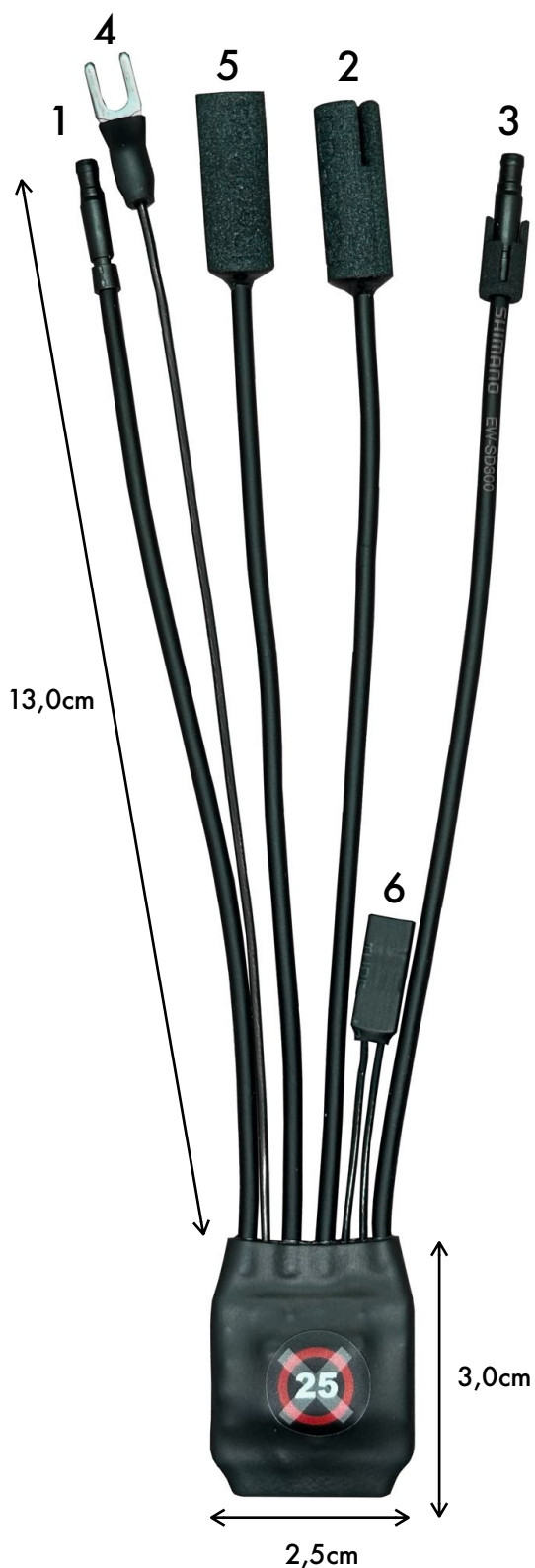
#### TECHNICAL SPECIFICATIONS

Dimensions	3,0 x 2,5 x 0,9 cm
Cable length	11cm, 7cm, 4cm
Weight	10g
Power	150mW
Transmission range	10m
Radio	Bluetooth® 4.0
Supply voltage	max 12 VDC

#### CONNECTOR CONNECTED TO...

1	with a free display socket
2	the speed sensor
3	the speed sensor socket
4	with the + pole of the light socket
5	with the display of the Pedelec-Mountainbike
6	not connected, reset plug

## 5.2. REDPED 2S FOR SHIMANO EP8



### TECHNICAL SPECIFICATIONS

Dimensions	3,0 x 2,5 x 0,9 cm
Cable length	11cm, 7cm, 4cm
Weight	10g
Power	150mW
Transmission range	10m
Radio	Bluetooth® 4.0
Supply voltage	max 12 VDC

### CONNECTOR CONNECTED TO...

1	with a free display socket
2	the speed sensor
3	the speed sensor socket
4	with the + pole of the light socket
5	with the display of the Pedelec-Mountainbike
6	not connected, reset plug

## 6. INSTALL

### Before you start the installation

- ➔ Confirm that you have read and understood all previous chapters of these operating instructions carefully and completely, **before** starting the installation.

This is the only way to ensure that you use the interchangeable equipment "tuning module" exclusively for the equipment described in these instructions Use for purpose and as intended.

### Have you read and understood all previous chapters and their sub-items?

- 1 Important safety information
- 2 Observe requirements for safe use
  - 2.1 Know the intended use
  - 2.2 Know and adhere to the restrictions on use
  - 2.3 Know and comply with the installation requirements
- 3 Warranty and Liability
- 4 Description of functions
- 5 Technical data

Do **not start** with the installation until you have read and understood all chapters and subsections.

### 6.1. KNOW THE INSTALLATION EXAMPLE

In these operating instructions, the installation can only be shown on an example vehicle and its equipment. The installation described below and all associated instructions refer to the installation example:

**Stevens E-Sledge+ 2018 mit Shimano Steps E8000**

**Centurion Country Tour F2600 mit Shimano Steps EP8**

### 6.2. KNOW THE TOOLS REQUIRED

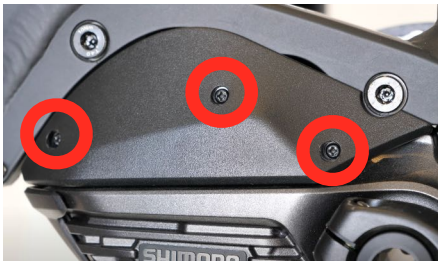
- ➔ **Hex key 2.5 mm** and **Phillips screwdriver** for the **E8000** motor
- ➔ **Phillips screwdriver** for the the **EP8** motor

**Additional tools may be required**

### 6.3. REMOVE MOTOR PROTECTION COVER



E8000 motor cover



EP8 motor cover

#### Prevent unexpected start-up

If the drive starts up unexpectedly, hands and fingers can shear, crush or move in

- ➔ Switch off the Pedelec-Mountainbike and **remove the battery**.

In this way you prevent any movement supported by an electric motor.

#### Parts can be sharp-edged, protective particles can splash out

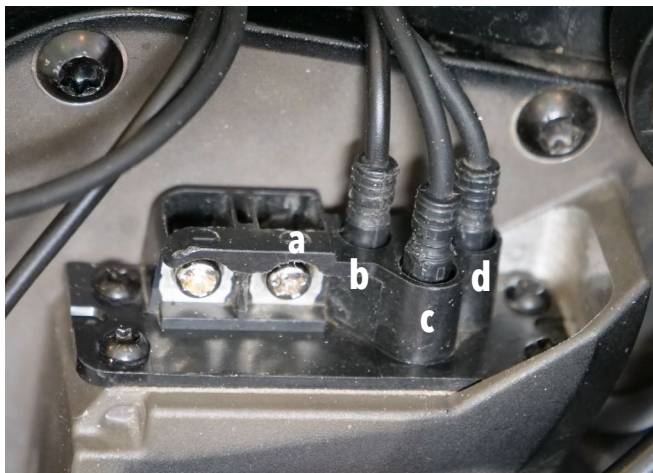
Wear protective gloves and goggles when using the protective motor cover remove

#### Remove the protective motor cover

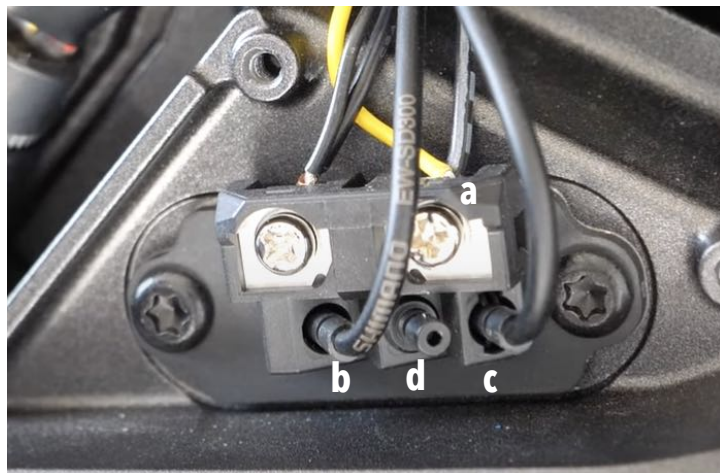
- Make sure that your Pedelec-Mountainbike is stable and secure.
- Remove the battery.
- Loosen the 3 screws on the motor cover.**
- Remove the engine cover

The cabling can be seen under the cover.

## 6.4. DISCONNECT AND CABLES



E8000 Anschlüsse mit Di2 Schaltung und ohne verbautem Licht



EP8 Anschlüsse ohne Di2 Schaltung und mit verbautem Licht

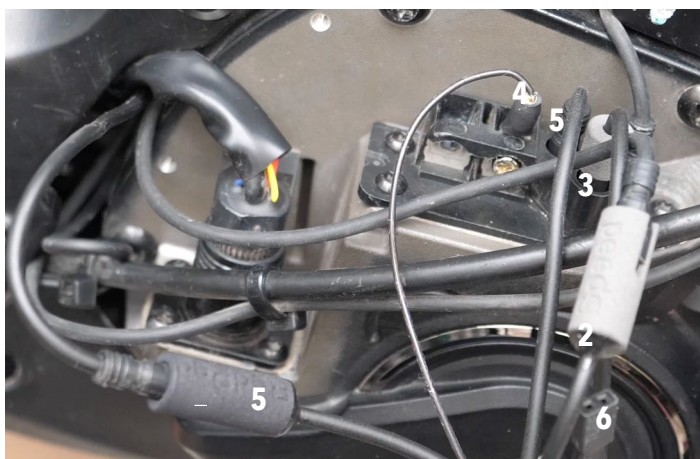
- ➔ Disconnect the plug in the socket **c** and loosen the screw **a**
- ➔ Disconnect the dummy plug **d**, if **available**
- ➔ If **b and d** are fitted with Di2 plugs, disconnect **one** of the plugs

### If other motors are installed:

- Use the following pictures as a guide.
- Remove the marked connectors.

## 6.5. PLUG IN THE TUNING MODULE

### 6.5.1. SHIMANO E8000



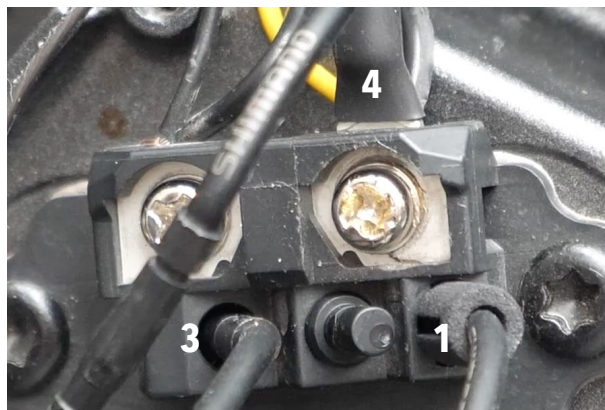
- Insert plug **3** into socket **c**
- Insert plug **5** into socket **b or d**, if both are occupied, then pull out one of the plugs
- Screw the cable lug **4** into the **+ pole** of the light connection **a**, even if the light connection is **not activated**
- Connect the plug from socket **c** to the "Speed" plug **2**
- If **b and d** were occupied, connect the plug from socket **b or d** to the "Display" plug **5**

### Check plugs

- Make sure that all connectors are plugged in **as far as they will go**. You should hear a **click** when you plug them in.



## 6.5.2.SHIMANO EP8



- Insert plug **3** into socket **c**
- Insert plug **5** into socket **b** or **d**, if both are occupied, then pull out one of the plugs
- Screw the cable lug **4** into the **+** pole of the light connection **a**, even if the light connection is **not activated**
- Connect the plug from socket **c** to the "Speed" plug **2**
- If **b** and **d** were occupied, connect the plug from socket **b** or **d** to the "Display" plug **5**

### Check plugs

- Make sure that all connectors are plugged in **as far as they will go**. You should hear a **click** when you plug them in.

## 6.6. PERFORM INITIALIZATION

### **Prevent unexpected start-up**

You must insert the battery for initialization.

If the drive starts up unexpectedly, hands and fingers can shear, crush or pull in.

- Make sure that no one can get to the driven parts of the Pedelec-Mountainbike during this time.

### **Immediately after initialization**

- Switch off the Pedelec-Mountainbike and remove the battery again.

In this way, you prevent any electromotor-assisted movement.

### **Perform initialization**

Wiring errors can be discovered during setup.

- Connect to the tuning module using the RedPed app
- Enter the PIN: **000000**
- Check whether all data is loaded in the app
- Turn the wheel and check if a speed is displayed in the app and in the Pedelec-Mountainbike display
- Please enter the mileage of the Pedelec-Mountainbike in the app

## 6.7. COMPLETE INSTALLATION

### **Prevent unexpected start-up**

If the drive starts up unexpectedly, hands and fingers may shear, crush or retract.

- Switch off the Pedelec-Mountainbike and remove the battery.

In this way you prevent any movement supported by an electric motor.

### **Parts can be sharp-edged, protective particles can splash out**

- Wear protective gloves and goggles when installing the protective motor cover.

### **Place the tuning module and lay the cables**

- a. Remove the battery.
- b. Place the tuning module in a place where no water can collect.
- c. Lay the cables in such a way that the motor protection cover can be reinstalled without hindrance.

In the picture, the module has been pushed into the down tube.

### **No uniform installation location can be defined**

Due to the large number of different drive systems and covers, it is not possible to define a uniform installation location.

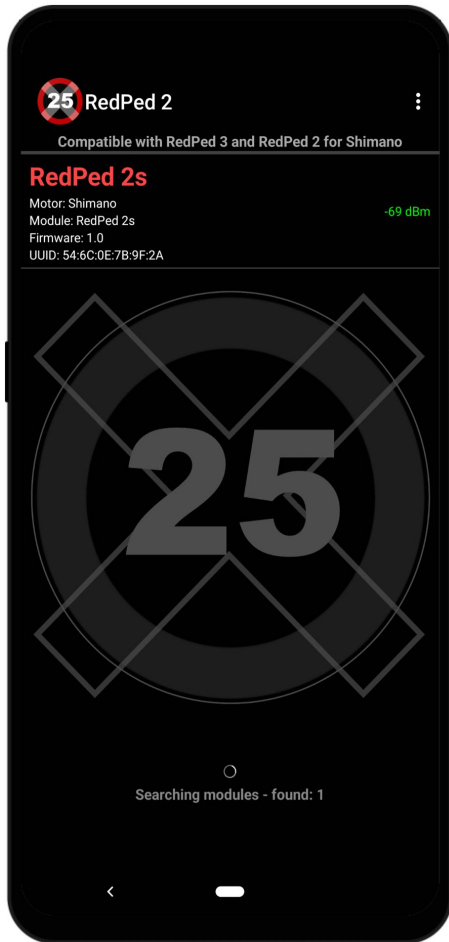
The module can often be placed directly in the connection area of the motor. It can also be accommodated in the frame tube, although this usually requires the motor to be detached from the frame.

- d. Refit the motor protection cover.
- e. Make sure that no cables chafe or get squashed.

Screw the motor protection cover back on.

## 7. REDPED 2 APP

### 7.1. MODULE SEARCH



After startup, the app scans for modules in the vicinity. If a module is found, the name, UUID, motor, module and firmware version are displayed. If the signal of a module is no longer received, it is removed from the list.

The dBm value indicates the signal strength.

Each module has a unique UUID, the UUIDs in the iOS and Android app differ.

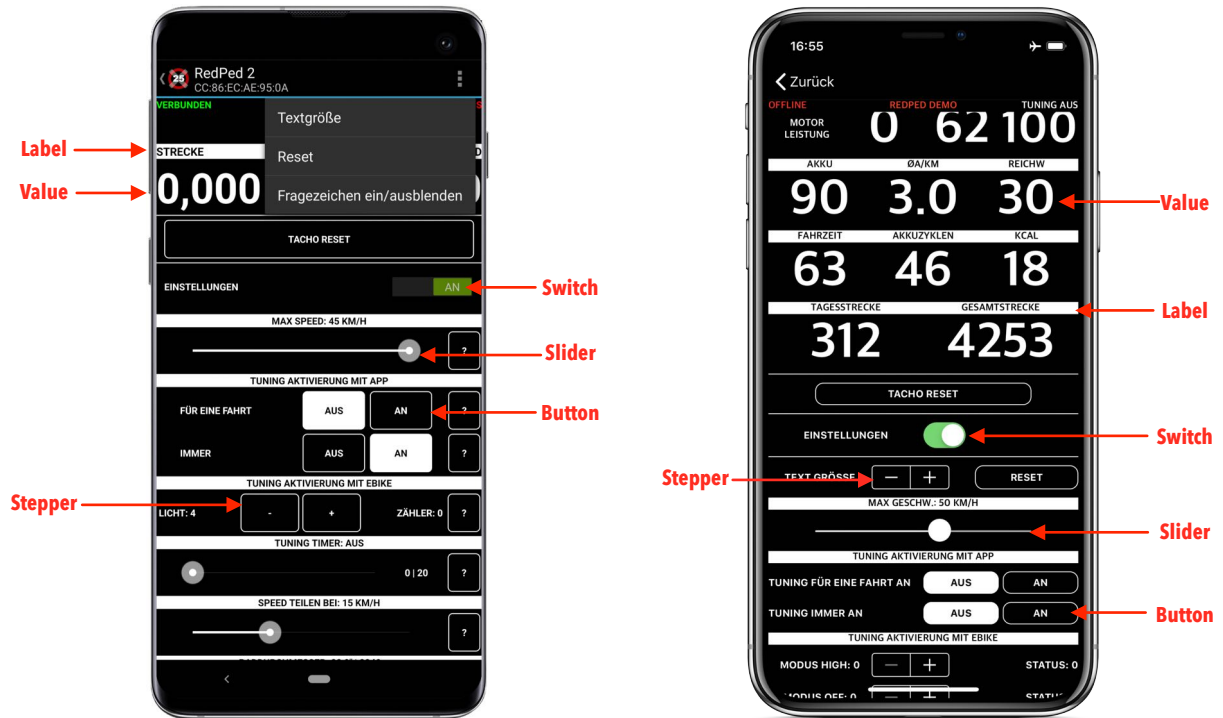
With a tap on a found module, the app connects to the module and opens the appropriate screen.

### 7.1. DATABASE

The app creates an image for each module it connects to and stores it in a database. The image is updated each time before the app is closed. When the app is reinstalled, demo modules are created that show the respective module's screen when the app is connected. Individual modules can be deleted by a long tap, in the options menu all modules can be deleted.



## 7.2. MAIN SCREEN - OPTICAL SETTINGS



### Change colors

A short tap on the label changes the color of the underlying value. A tap on "CURRENT", "AVERAGE" or "MAXIMUM" changes the color of the column below. A tap on "SPEED", "RPM", "TORQUE", "CYCLIST POWER" or "MOTOR POWER" changes the color of the row.

### Hide values

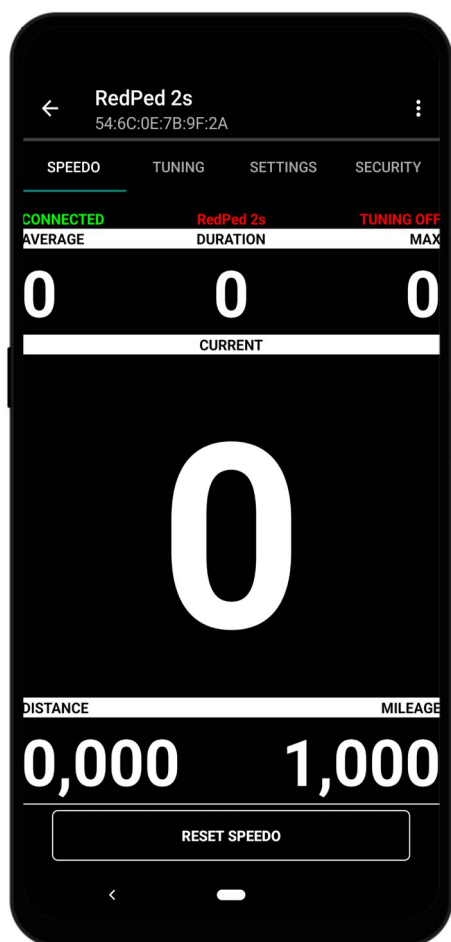
A long tap on the label makes the label and the corresponding value disappear. A long tap on "TURBO", "CURRENT", "AVERAGE" or "MAXIMUM" makes the label and the column below disappear. A long tap on "SPEED", "RPM", "TORQUE", "CYCLIST POWER" or "MOTOR POWER" will make the label and the row disappear.

All settings are saved permanently and can also be made offline in the database.

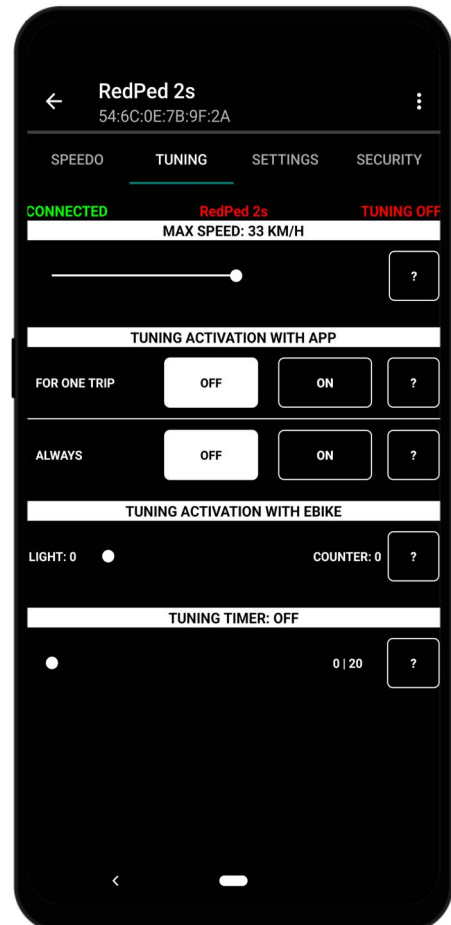
Android: The font size can be changed in the main screen in the settings.

iPhone: It is possible to **zoom** into the speedometer.

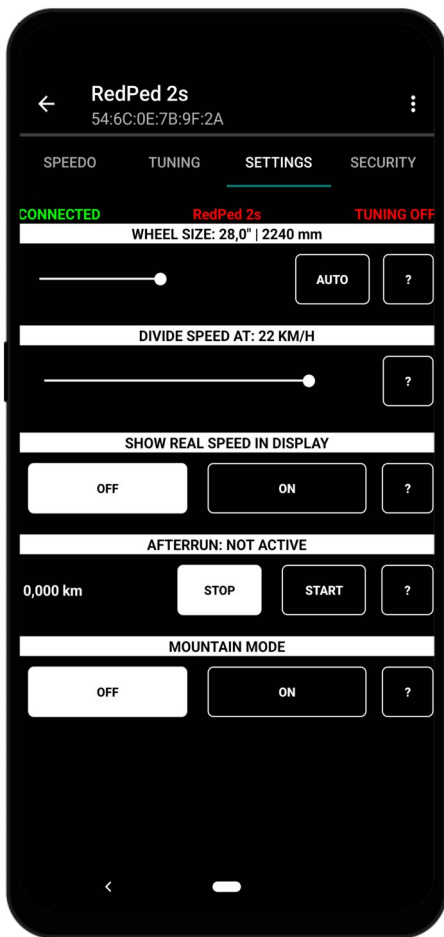
## 7.3. SPEEDO, TUNING, SETTINGS, SECURITY



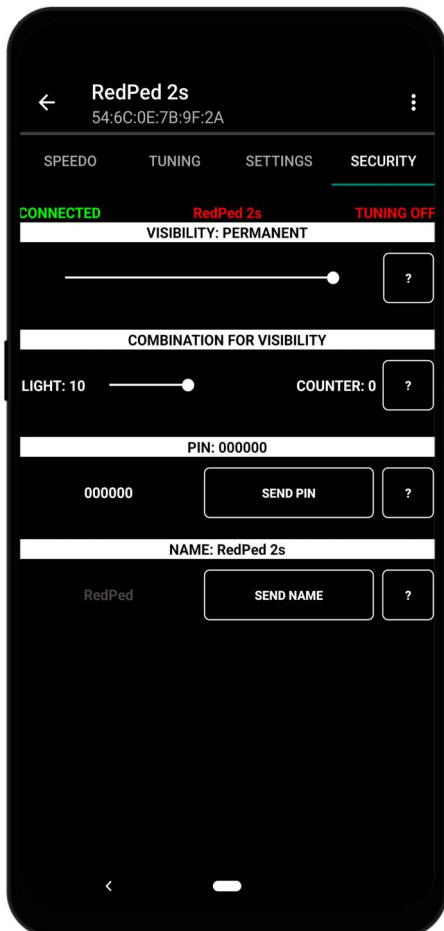
LABEL	UNIT	FUNCTION
BACK	-	Disconnects the connection to the module. Disables automatic connection to the module
RedPed 2	-	Name of the connected module
54:6C:0E:7B:9F:2A	-	Unique ID of the module.
CONNECTED	-	Current connection status
TUNING ON	-	Tuning status
<b>TUNING</b>		
MAX	km/h	Maximum speed
DURATION	Minutes	Duration
AVERAGE	km/h	Average speed
SPEED	km/h	Current speed
DISTANCE	km	Distance currently traveled
MILEAGE	km	Mileage, can be changed with a <b>long</b> tap.
RESET SPEEDO	-	Resets all values except MILEAGE



CONTROL	SCALE	FUNCTION
<a href="#">MAX SPEED</a>	15 - 45 km/h	Theoretical maximum possible speed
<b>TUNING ACTIVATION WITH APP</b>		
FOR ONE TRIP	OFF   ON	Activates tuning until the Pedelec-Mountainbike is switched off.
ALWAYS	OFF   ON	Activates tuning automatically when the Pedelec-Mountainbike is switched on. Is not activated when the TUNING TIMER is active.
<b>TUNING ACTIVATION WITH EBIKE</b>		
LIGHT	0 - 20	Sets how often the Pedelec-Mountainbike light must be turned on and off to activate tuning.
COUNTER	0 - 20	Counts how often the light of the Pedelec-Mountainbike was switched on or off.
<b>TUNING TIMER</b>		
Slider	10 - 180 sec	Timer duration
0   20	seconds	Countdowns for the activation of the timer



CONTROL	SCALE	FUNCTION
<u>WHEEL SIZE</u>		
Slider	16,2" - 37,5"	Please enter the wheel size here
AUTO	-	Generates a speed in the Pedelec-Mountainbike display, enter this to calculate the exact wheel size.
<u>DIVIDE SPEED AT</u>		
<u>DIVIDE SPEED AT</u>	10 - 24 km/h	Sets how the speed should be divided
<u>SHOW REAL SPEED IN DISPLAY</u>		
BUTTONS	ON   OFF	Shows the actual speed in the Pedelec-Mountainbike display as a decimal number.
<u>AFTERRUN</u>		
0,000 km		Displays a value if the mileage of the Pedelec-Mountainbike is less than that of the module
BUTTONS	START   STOP	Starts or stops the AFTERRUN.
<u>MOUNTAIN MODE</u>		
BUTTONS	AN   AUS	Switches the mountain mode on or off.



CONTROL	SCALE	FUNCTION
<u>VISIBILITY</u>	0 - 180 Sek Permanent	Sets how long the tuning module can be found in the app when the Pedelec-Mountainbike is switched on.
<u>COMBINATION FOR VISIBILITY</u>		
LIGHT	0 - 20	Defines how often the Pedelec-Mountainbike light must be switched on and off to make the module visible.
COUNTER	0 - 20	Counts how often the Pedelec-Mountainbike light was switched on or off.
SEND PIN	6 digits	The PIN can be set to any value
SEND NAME	9 digits	The name can be entered as desired

## 8. EXPLANATIONS AND NOTES

### 8.1. PAIRING

The PIN always has six digits and the factory setting is 000000.

#### **iPhone with RedPed App**

When connecting for the first time, the PIN must be entered once. The module is not visible in the Bluetooth® menu before it was paired. It must be found and linked in the RedPed app.

#### **Android with RedPed 2 App**

Find the module in the Bluetooth menu, click on it and enter the PIN. With some smartphones such as Huawei, the first click indicates that the module must be paired in the app, in which case click on the module again and enter the PIN.

➔ **After pairing, the Pedelec-Mountainbike must be restarted.**

### 8.2. MAX SPEED

The actual top speed with activated tuning depends on the motor and chainring. The value set via the app is only the theoretically possible value.

➔ **If the set value is not reached, SPEED DIVIDE AT may be too high**

➔ **If the set value is not reached, the WHEEL SIZE may be too small**

### 8.3. TUNING ACTIVATION WITH APP

**FOR ONE RIDE:** Tuning is only active until the Pedelec-Mountainbike is switched off.

**ALWAYS:** Tuning is activated when the Pedelec-Mountainbike is switched on.

➔ **If the TUNING TIMER is active, tuning is not activated automatically.**

### 8.4. TUNING ACTIVATION WITH EBIKE

The light of the Pedelec-Mountainbike must be **activated**. By switching the light on and off, the tuning can be activated. The number can be set between **0 and 20**. There must be at least a pause of **0.5 sec** between switching on or off. The counter is reset if no further entries are made within **8 sec**. If the light comes on automatically when the Pedelec-Mountainbike is switched on, this is not counted. The counter only counts up if the light is switched off beforehand.

➔ **With some motors it takes up to 3 sec until the switching off of the light is detected and counted**

### 8.5. TUNING TIMER

The TUNING TIMER deactivates tuning after the set duration. The duration can be set between **10 and 180 sec**. If the Pedelec-Mountainbike rides **above 15 km/h** for at least **20 sec**, then the TUNING TIMER is activated when the Pedelec-Mountainbike comes to a stop. While the timer is counting down, the Pedelec-Mountainbike can be moved up to 10 km/h without the timer stopping. If the timer expires, then the tuning is deactivated and must be activated either via app or via a combination.

### 8.6. DIVIDE SPEED AT

Sets how the speed is divided. The **higher the value, the better**. However, if it is set too high, then the support stops before MAX SPEED is reached, in which case set the value down. **Change the value** if you get the error **W011**, especially with **Di2 shifting** installed.

### 8.7. SHOW REAL SPEED IN DISPLAY

Only works with Pedelec-Mountainbike displays that show the speed with one decimal place. From 22 km/h, the speed is displayed as a decimal number.

Example:

➔ **25 km/h is 22,5 km/h in the display**

➔ **30 km/h is 23,0 km/h in the display**

It is important that the WHEEL SIZE is set correctly. Use the [AUTO](#) function to do this.

## 8.8. COMBINATION FOR VISIBILITY

The light of the Pedelec-Mountainbike must be **activated**. By switching the light on and off, the module can be made visible. The number can be set between **0 and 20**. Between switching on or off must be at least a pause between **0.5 sec**. The counter is reset if no further inputs are made within **8 sec**.

## 8.9. VISIBILITY

To prevent access to the module by third parties, the module can become invisible after a set time. The visibility can be set from 0 to 240 seconds or to infinity. If you set it to 30 seconds, for example, the module can no longer be found in the app 30 seconds after the Pedelec-Mountainbike has started. You can connect to the module within 30 seconds, after disconnecting the connection, the timer is set to 30 seconds again.

If the visibility is set to 0 seconds, the module can no longer be found with the app. Possibilities to make the module visible:

- **Combination for visibility**
- **Reset**

## 8.10. WHEEL SIZE

The value programmed in the Shimano motor can be entered here.

### **AUTO**

The RedPed module **generates 15 km/h** based on the set WHEEL SIZE value. If the value **does not match** that of the Pedelec-Mountainbike, the Pedelec-Mountainbike display will **not show exactly** 15 km/h. **Enter** the value that is **shown** in the **display**. The RedPed module then calculates and saves the correct value. The speed is generated for a maximum of 30 seconds.

If the Pedelec-Mountainbike display shows exactly 15.0 km/h, then WHEEL SIZE is set correctly.

- ➔ **The AUTO function only works with displays that show the speed to one decimal place**

## 8.11. AFTERRUN

The AFTER-RUN value shows how many KM the engine is missing by dividing the speed. Pressing the START button generates a speed of between 40 and 50 km/h when stationary.

The speed is generated until:

- ➔ **the AFTERRUN value is 0 km**
- ➔ **the Pedelec-Mountainbike is moved**
- ➔ **the battery of the Pedelec-Mountainbike is empty**

The AFTERRUN value can only be reset to 0 km by resetting the RedPed module.

## 8.12. MOUNTAIN MODE

The divided speed generated by the RedPed module always runs **one wheel revolution behind**, which can lead to error **W011** on Pedelec-Mountainbikes **with Di2 shifting** at low speeds. The function **synchronizes** the RedPed and Pedelec-Mountainbike speed while riding. This can result in **small jumps** in speed in the Pedelec-Mountainbike display.

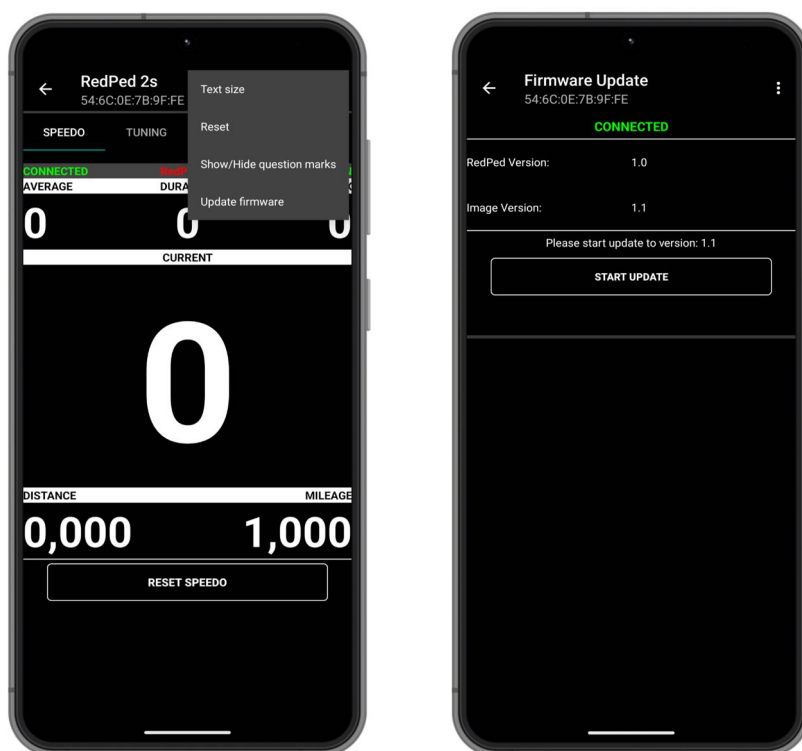
## 8.13. PIN

Before the data of a RedPed can be read out, a PIN must be entered. The PIN is always 6 digits long and can be changed in the app. If the new PIN entered is too short, zeros are prefixed, e.g. if "123" is entered, the PIN is automatically changed to "000123". The PIN can be reset to "000000" via the reset connector.

## 8.14. RESET

Switch on the Pedelec-Mountainbike. Plug the supplied reset cable into the reset plug. The RedPed module is reset after 20 seconds. Please remove the reset cable afterwards.

## 9. FIRMWARE UPDATE



The update can **only** be carried out with the RedPed 2 app for **Android**. Open the menu when you are connected to the RedPed module. Click on "Update firmware". "RedPed Version" shows the firmware **version** of the **connected** RedPed **module**. "Image Version" shows the latest **firmware** version **stored** in the RedPed 2 **app**. If the "Image Version" is higher, the "Start Update" button is displayed. Press the button to start the update. The RedPed module **restarts** after the **successful update**. All settings are retained. Please ensure that the Pedelec-Mountainbike does **not switch off during** the update.

## 10.CHECK BEFORE EACH USE

Due to the higher speeds with electric motor assistance, higher loads and forces will act on all vehicle parts.

Reaching higher speeds increases wear on all vehicle parts, especially the brake system and all parts of the drive system, even if the vehicle is of suitable strength and design.

Before each use of your tuned Pedelec-Mountainbike, perform a comprehensive inspection of the vehicle.

Check the condition and function imperatively

- of the brakes and their functional components,
- of the vehicle frame,
- of the steering system and its functional components,
- of the drive and their functional components as well as
- of the saddle and its functional components.

In addition, observe all inspections not mentioned here that are prescribed by the manufacturer of your Pedelec-Mountainbike before each use. This list does not replace the original operating instructions from the Pedelec-Mountainbike manufacturer.

Only use your tuned Pedelec-Mountainbike if you can determine and confirm that it is in perfect condition.

## 11.RIDE A TUNED PEDELEC-MOUNTAINBIKE

For safe use of the tuning module in your Pedelec-Mountainbike, it is first essential to read and understand these operating instructions in full.

### **These operating instructions**

- informs you about the intended use,
- important operational limitations,
- Obligations of the owner and the user,
- Warranty and liability conditions and
- alerts you to potentially unsafe or dangerous situations and uses with prominent safety and warning messages.

### **Know and observe all contents of the operating instructions**

- Make sure you take the time to read these operating instructions carefully before setting off with your tuned Pedelec-Mountainbike.
- Also make these operating instructions available for reading by any other person who may move your tuned Pedelec-Mountainbike.
- Ensure that every person who is allowed to move your tuned Pedelec-Mountainbike has read and understood these operating instructions before any use.
- Instruct the user in the safe use of the tuned Pedelec-Mountainbike based on these operating instructions before leaving your tuned Pedelec-Mountainbike to other persons.

### **It is imperative that the intended use and restrictions on use are complied with.**

- It is imperative that you comply with the intended use and the restrictions on use.
- Please note in particular the following points
  - 2.1 *Know the intended use* and
  - 2.2 *Know and comply with restrictions of use* and its subsections of this operating manual.

## 12.DISPOSAL

Know rules and regulations for disposal

- In any case, comply with the regional and in-house regulations on waste disposal.
- If in doubt, ask your municipality's waste management officer where you can properly dispose of e-waste.

### **Separate electronic waste**

- Never dispose of electronic components in household waste.
- Only dispose of electronic waste in the collection containers provided by a waste disposal company or your local authority.

## 13.EG-/ EU-DECLARATION OF CONFORMITY

in terms of the

**EC Machinery Directive 2006/42/EC,**  
**Annex II 1 A** for interchangeable equipment  
according to articles 1 b) and 2 b) as well as

EU Official Journal L 157/24 of 09.06.2006

**EMC RL 2014/30/EU,**

EU Official Journal L 96/79 of 26.02.2014

**RoHS RL 2011/65/EU,**

EU Official Journal L 174/88 of 01.07.2011

We, the manufacturer, hereby declare under our sole responsibility that the following interchangeable equipment, in its design and construction and in the version placed on the market by us, complies with the relevant provisions and harmonization legislation of the above-mentioned directives.

Product name	Tuning module for Pedelec-Mountainbikes
Item number	rp2s_e8000, rp2s_ep
Serial number	Readable with the RedPed App
Manufacturing date	from March 2024
Interchangeable equipment exclusively for with the standards specified in the Pedelec-Mountainbike manufacturer's declaration of conformity	Pedelec-Mountainbikes  EN 15194 EN ISO 4210-2 (Mountainbikes)
Manufacturer and address	M. Sc. Andreas Fischer Kaiser-Joseph-Str. 254 79098 Freiburg Germany <a href="mailto:info@redped.app">info@redped.app</a>
Documentation representative	M. Sc. Andreas Fischer  EN ISO 12100:2010 Risk assessment and mitigation
Applied harmonized standards, in particular:	EN 15194:2017 Bicycles - electric motor assisted bikes - EPAC  EN ISO 4210-2:2015 Bicycles - Safety requirements for bicycles - Part 2: Requirements for city and trekking bicycles, youth bicycles, off-road bicycles (mountain bikes) and racing bicycles
Further applied regulations:	UNECE Regulation No. 78 Requirements for brakes