

**ZEHUS**  
h u m a n +



**BIKE** all in one

User manual

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## Safety Notes



*Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in serious injury.*

*Save all safety warnings and instructions for future reference.*

- **DO NOT** open the unit yourself. **BIKE all in one** is maintenance-free and must be repaired only by qualified experts and only with original spare parts. Any unauthorized attempt to open the unit will void warranty claims.
- **DO NOT** make any modification to **BIKE all in one** and **DO NOT** remove the anti-rotational plates from your bike. This would yield to an incorrect behavior by your bike and it may result in serious injury.
- **DO NOT** use the bike without the protection covers for the charging connector (see Figure 1). Warranty is void if the bike is being used without protecting the connector.
- **Please observe all national regulations on registering and using e-bikes.**
- The term “battery pack” refers to an internal part of the **BIKE all in one** system. **DO NOT** try to access the battery pack.
- **BIKE all in one** must not be subjected to direct mechanical impacts. There is a risk that the battery pack and the electronics will be damaged.
- **Protect the BIKE all in one system against severe heat, fire and immersing into water.** Danger of fire and explosion.
- **Vapors can escape in case of damage or improper use of the BIKE all in one.** Avoid contacts with those vapors, as they can irritate the respiratory system.
- **Charge the battery pack only with original Zehus battery charger.** Damage can occur while using non-original charging devices.

- **IF your BIKE all in one has a 6-pin connector (see Figure 1), please be careful to insert the 6-pin charger plug in the 6-pin connector in the proper way.** Otherwise short circuits can occur. Warranty is void if charger is not inserted correctly. Do not short circuit the pinout of the charging connector.
- **Keep the battery charger away from rain or moisture. Keep the battery charger clean.** Danger of electric shock
- **Do not charge the battery near flammable surfaces.** Risk of fire.
- **Before any charging operation, check the battery charger status (cable, plug, connectors).** If any damage is detected, DO NOT use the charger and contact a qualified retailer.
- **Do not operate the battery charger on flammable surfaces.**
- **Vapors can escape in case of damage or improper use of the charger.** Avoid contacts with those vapors, as they can irritate the respiratory system.
- **Keep the charger out of children reach.**
- **Please read this manual carefully**

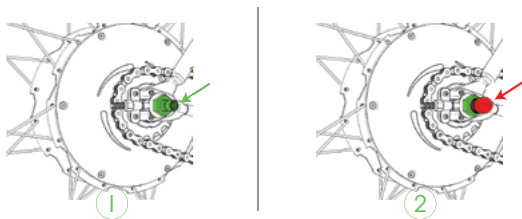


Figure 1: 6-pin charging connector (1) and protection cover (2)

# 1. Getting started with BIKE all in one

## 1.1 Intended use

**BIKE all in one** is intended to be used exclusively with the bike which was sold with. Any attempt to mount **BIKE all in one** on another bike will void warranty claims.

**BIKE all in one** is not permitted for competition and race use.

## 1.2 Initial operation

**BIKE all in one** can only be activated when the battery state of charge is sufficient. In order to check the battery state of charge of your **BIKE all in one** please refer to 5.

## 1.3 Turning on the system

**BIKE all in one** turns on automatically when the rear wheel reaches a speed higher than 5 km/h. Thus, to turn on **BIKE all in one** just start pedaling your bike as usual or spin the wheel while you lift the bike, as explained in Figure 2 .

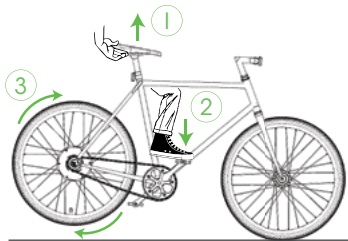


Figure 2: in order to turn on **BIKE all in one**, lift the bike (1), push the pedal (2) such that the rear wheel reaches at least 5 km/h (3).

## 1.4 Turning off the system

BIKE all in one automatically turns off when no activities are detected within 2 minutes, in order to reduce the idle battery use.

▲ **WHEN A SMARTPHONE IS CONNECTED** the system will stay active for 10 minutes.

## 2. Riding BIKE all in one

▲ *it is recommended to gather first experience with BIKE all in one away from roads with heavy traffic.*

BIKE all in one is an advanced powertrain for e-bikes that helps you in reducing your pedaling effort. The system is compliant to the EU laws on Electric Pedal Assisted biCycle (EPAC).

### 2.1 BIKE all in one activation procedure (see Figure 3)

When BIKE all in one is turned on, the motor assistance is not yet activated for safety reasons. In order to activate the motor assistance, you must perform all the following steps:

- Ride the bike and reach 8 km/h
- Pedal backwards per 3 revolutions continuously

▲ *The bike will slow down while performing the step 2, due to the regenerative braking function (see 2.3).*

### 2.2 Motor Assistance

The motor assists the rider up to 25 km/h (depending on the selected power mode - see 5.3 on page 17) and with a maximum power of 250W just if you are pedaling. As soon as you stop pedaling, the motor will stop pushing.

The generated power depends on several factors including the bike speed, the pedaling speed and the road slope, depending on the selected power mode.

### 2.3 Regenerative braking (KERS)

BIKE all in one features a regenerative braking function; this allows you to slow down the bicycle using the electric motor as a generator recharging the batteries thanks to the

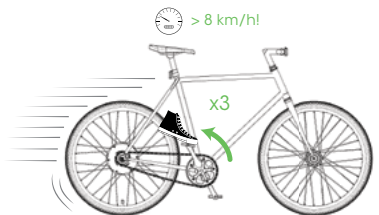


Figure 3: BIKE all in one activation procedure

integrated Kinetic Energy Recuperation System (KERS). In order to activate the regenerative braking you need to pedal backwards. As soon as you stop pedaling, the motor will stop braking.

**▲ CAUTION: Regenerative braking DOES NOT substitute safety mechanical brakes. Please do NOT remove the mechanical brakes from your bike.**

**▲ CAUTION: Regenerative braking WILL NOT BE AVAILABLE when your BIKE all in one is fully charged.**

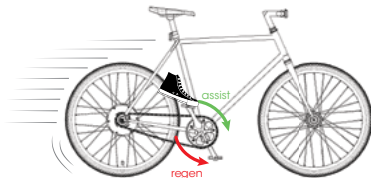


Figure 4: motor assistance and regenerative braking

## 2.4 Charging BIKE all in one (see Figure 5)

To charge **BIKE all in one**, simply remove the protection cap from the charging connector (1) and plug in the Zehus charger (2). Then connect the Zehus charger to a power outlet (110~240 V).

The charging time is approximately 3 hours for a complete charge. While **BIKE all in one** is charging the charger LED must turn RED. When **BIKE all in one** is completely charged, the charger LED turns GREEN (3).

**▲ NOTE: when the charger gets disconnected from the bike, BIKE all in one will turn off.**

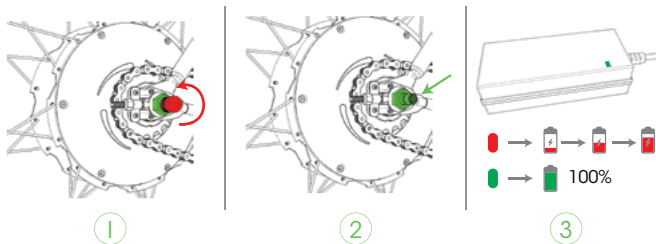


Figure 5: charging BIKE all in one

## 2.5 Change gears or tires on BIKE all in one

Although **BIKE all in one** is intended to be used as a single speed hub, you can decide to change the sprocket or the crankset. If you change one or more of these components by yourself, **BIKE all in one** performance could be not optimal. Please contact our sup-



port using the bitride app, in order to update your bike firmware with your new gear set. Whenever you change tire size (e.g. from 700x23c to 700x35c), please contact our support to update your bike firmware. Otherwise the displayed speed will not be correct.

## 2.6 Careful handling of the bike

Please observe the operating storage temperature of **BIKE all in one**. Protect the charging connector from impacts that can damage it. Components can be damaged if exposed to extreme temperatures.

**▲ CAUTION: ALWAYS seal the connector on BIKE all in one with the proper protection cap (5) before riding. Using BIKE all in one without the protection cap will void the warranty.**

## 3. Using a Smartphone with your BIKE all in one

In order to access all the functionalities of **BIKE all in one**, you would have to connect a smartphone through the **bitride-my bike** app.

### 3.1 What is the bitride-my bike app?

The **bitride** app helps you to act smarter during the everyday mobility; bitride also allows you to connect to a variety of devices via Bluetooth, including your **BIKE all in one**.

### 3.2 Which devices does the bitride-my bike app support?

Devices with Android 4.2.3 or newer are supported; iPhone 4s, iPhone 5, iPhone 5s, iPhone 5c, iPhone 6, iPhone 6+ are also supported.

**▲ NOTE: please check with your smartphone manufacturer if your device has compatibility issues with Bluetooth 2.3.**

### 3.3 How do you get the bitride-my bike app?

You can download the **bitride-my bike** app from the Google Play store (for Android devices) or from the Apple store by searching for "**bitride**" or by using the links below.



<https://goo.gl/ryvMuY>



<https://goo.gl/yo1axU>

### 3.4 How much is the bitride-my bike app?

The **bitride-my bike** app is available for free.

### 3.5 How do you install the bitride app?

Depending on your mobile device, go either to the Apple Store or to Google Play and search for "**bitride**" in the search dialog. The detailed procedure is listed below.

On iPhone:

- Open App Store
- Tap the search icon
- Enter "**bitride**" in the search field
- Select **bitride-my bike** in the search results
- Follow the standard installation procedure

- Register with a valid e-mail address

#### On Android:

- Open Google Play
- Tap the search icon
- Enter **bitride** in the search field
- Select **bitride-my bike** in the search results
- Follow the standard installation procedure
- Register with a valid e-mail address

### 3.6 Connecting bitride to your BIKE all in one

**▲ NOTE:** bitride-my bike connects through Bluetooth to your BIKE all in one. When first connecting to a factory reset BIKE all in one, the name of the device will be Bikep-XXXX, where XXXX is a number.

**▲ NOTE:** In order to register a BIKE all in one the app bitride-my bike needs to access a stable internet connection and it requires geolocation

Once your BIKE all in one is turned on (see 1.3), you can connect bitride-my bike to the bike. Depending on your mobile device the procedure may change.

#### On iPhone:

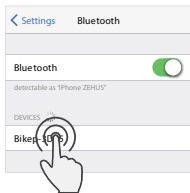
- Open the Bluetooth settings screen
- Tap your BIKE all in one name
- Wait for connection
- Launch **bitride-my bike**
- Select your device from the list

**▲ NOTE:** If you have an iPhone bitride-my bike will auto-connect to your BIKE all in one after the first time the device is paired.

#### On Android:

- Launch **bitride**
- Allow the app to Enable your Bluetooth
- Tap your BIKE all in one name
- Wait for pairing and connection

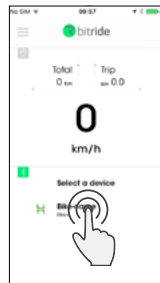
iPhone



Android



1



2

### 3.7 BIKE registration (first use)

▲ **NOTE:** It is highly recommended to perform **BIKE** all in one registration.

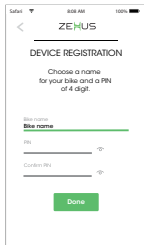
▲ **NOTE:** the bike name will change at the first reboot of the bike.

▲ **INTERNET CONNECTION NEEDED** to perform the registration

In order to use your **BIKE all in one** together with **bitride**, you need to register it using your **bitride** app. By registering to **bitride** you will be able to:

- change your **BIKE all in one** name
- adjust **BIKE all in one** power mode
- access to online fault diagnosis
- access to remote maintenance
- access to remote anti-theft service

In order to register your **BIKE all in one** please fill in the registration form in the app welcome screen:

A screenshot of a mobile application interface. At the top, it says "ZEHUS". Below that, the title is "DEVICE REGISTRATION". The instruction reads: "Choose a name for your bike and a PIN of 4 digit." There are two input fields: "Bike name" and "PIN". Below the PIN field is a "Confirm PIN" field. A green "Done" button is at the bottom.

Please provide:

- a valid bike name for your **BIKE all in one**
- a valid e-mail address: a validation code will be sent to you in order to complete the registration
- a 4-digit PIN code that you set as security for your **BIKE all in one**

## 4. **bitride-my bike** HMI for BIKE all in one

**bitride-my bike** has different sections, each of the ones is accessible through the hamburger menu on the top left of the screen.

The available sections are:

- Ride
- Map
- Profile
- My devices
- Support
- Maintenance (this section needs remote authorization by Zehus support)

To access the "ride" section tap the hamburger menu on the upper left side of the screen and select RIDE. To access the online dashboard please connect to your **BIKE all in one** by following the instructions in 3.6.

## 5. Using the ride section

The ride section within **bitride-my bike** displays the following information (see Figure 6):

- Bike SPEED [Km/h] or [mi/h]
- Total ODO [Km] or [mi]
- Partial ODO [km] or [mi]
- Motor Power [W]
- State of charge of the battery [%]

In this section you can:

- Reset Trip distance: touch and hold for 3 seconds on the trip information to reset it
- Access the ride settings (see 5.1 and following)
- Disconnect from the device: hold the button to disconnect

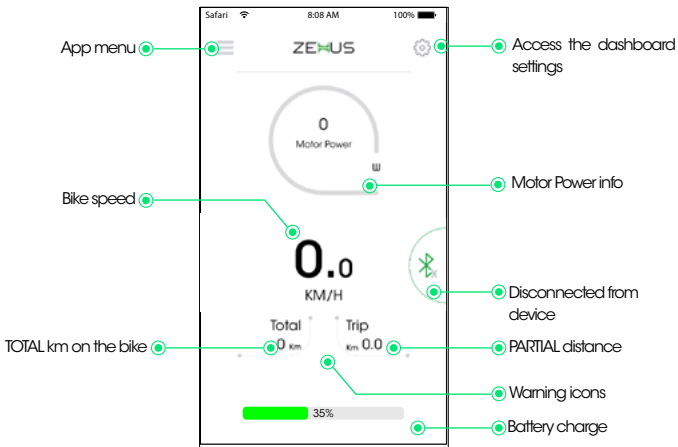


Figure 6: **bitride** ride section when connected to BIKE all in one\*

\*app appearance can differ from the one displayed on this manual

## 5.1 Using the ride settings (Figure 7)

In this screen you can customize the motor assistance while pedaling (see also 5.3), the amount of regenerative brake (KERS) and the units you prefer to display speed and distance. Furthermore, you can perform the factory reset of your **BIKE all in one** by sliding the factory reset icon on the right side of your screen.

For any modification performed in this screen the bike must not be moving (speed must be 0 km/h).

## 5.2 Performing a factory reset on BIKE all in one

In order to perform a factory reset on your **BIKE all in one**, please tap the hyperlink "factory reset" on the dashboard menu. The app will ask you to insert the PIN of your bike to

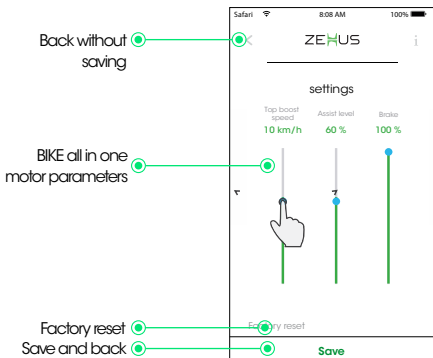


Figure 7: Ride settings section



perform the factory reset.

This procedure will reset the bike name, the bike PIN and the e-mail associated with your **BIKE all in one**.

### 5.3 Adjusting **BIKE all in one** power mode

Your **BIKE all in one** let you customize the motor assistance while pedaling by selecting 2 different parameters: Top Boost Speed and Assist Level.

By changing the TOP BOOST SPEED parameter (0 to 25 km/h), you set the speed the motor assists you at the maximum level. For higher speed than this limit the assistance will decrease to be 0W at 25 km/h.

By changing the ASSIST LEVEL parameter (0% to 100%), you set the maximum level of assistance of the motor. 100% means 250W peak. Please refer to Figure 8 and Figure 9 for further information.

**▲ Note: the assistance also depends on your pedaling power. Figure 8 and Figure 9 is intended to explain the motor settings and NOT to give you detailed information about the effective motor power.**

The default motor settings are:

- Top Boost Speed: 10 km/h
- Assistance: 60%
- KERS: 100%

### 5.4 Influences on **BIKE all in one** range

The range of **BIKE all in one** depends on many factors as:

- Motor settings
- Tire pressure
- Road conditions and route profile
- Head winds and ambient temperature
- Weight of the driver and luggage
- Age and using condition of the battery pack
- Rider pedaling effort

It is very difficult to predict a range given all these variables.

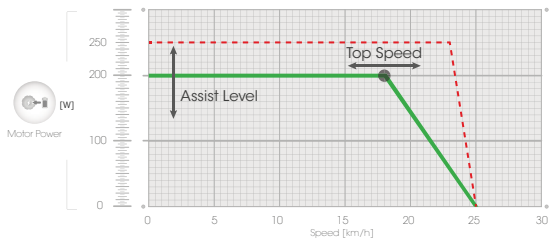


Figure 8: motor settings and power limitations

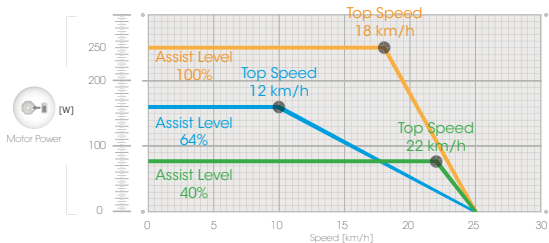


Figure 9: example of different motor settings

## 5.5 BIKE all in one warning icons

Warning icons let you understand when there is something wrong with your **BIKE all in one** functioning (see 5). If you experience a problem that prevent you from using your **BIKE all in one** correctly, please contact our customer care on our website or at info@zehus.it! Icons can appear both yellow (warning) or Red (severe risk or damage).

The warning icons that can appear on your **bitride** app in the dashboard are:



### Temperature WARNING

This icon appears when the temperature inside the hub reaches a critical level. The system will automatically set the amount of power not to be damaged.



### Connectivity WARNING

This icon appears when there is a connectivity problem with the bike. Even if the Bluetooth is connecting to the bike, it could be possible to get this warning. Please contact Zehus using the support section (see 6 on page 20).



### Battery WARNING

This icon appears when there is a problem with the battery pack. If this icon appears steadily on the phone, contact Zehus using the support section (see 6 on page 20).



### Pedal sensor WARNING

This icon appears when there is a problem with the pedaling sensor. Please contact Zehus using the support section (see 6 on page 20).



### Powertrain WARNING

This icon appears when there is a problem with the electric powertrain. If this icon appears steadily on the phone, contact Zehus using the support section (see 6 on page 20).



### Charging WARNING

This icon appears when you are charging BIKE all in one.



### WARNING icon

Tap on this generic icon to be prompted for the problem / useful info (e.g.. End Of Line parameters are not set). Contact Zehus using the support section if you need further information (see 6 on page 20).

## 6. Using the Support section

This section allows you to:

- Check warranty and manuals related to your product
- Check a F.A.Q. section
- Perform a diagnosis on your All in One and send it to Zehus Support team
- Send a generic feedback to Zehus Support team

### 6.1 Sending an online or offline feedback to Zehus Support team

When you notice something wrong with your powertrain, it is possible to send a feedback to Zehus support team straight from the app.

The first feedback, also called online feedback, can be selected by tapping "I have a problem with my powertrain". The app will then gather diagnostic data from your BIKE all in one. Later, you will be asked to type a message that better describe the issue you are facing.

**▲ NOTE:** *In order to fulfil this procedure, your smartphone must be connected with your BIKE all in one*

The second feedback, also called offline feedback, does not require to be connected

to the bike. This generic feedback can be used for questions or in case you can not connect to your BIKE all in one to gather diagnostic data.



## 7.Using the Maintenance section

The Maintenance section is usually not visible in the app hamburger menu. Use of the maintenance section is supervised and authorized by Zehus Support team only. After your request is being analyzed, the support team will come back to you notifying that the Maintenance section is now available to be used.

This Section contains 3 automatic procedures that allow you to restore some data on your bike, fixing problems related to software / firmware / memory issues.

The procedures you will be able to trigger in this section are:

- Restore EOL parameters
- Factory reset
- Deep Memory Reset

### 7.1 Restore EOL parameters

In case your BIKE all in one was not initialized correctly by the bike manufacturer, or in case there was a memory error, you will be able to see the EOL parameter warning in the ride section (see 5.5 on page 19).

End Of Line parameters are very important and need to be set correctly.

If not set or set in a wrong way, BIKE all in one may not work properly.

Please contact the Zehus Support team providing the brand and model of your bike, your frame number (if applicable), your BIKE all in one serial number. Our support team will then check the information on our server and they will remotely authorize you to use this recovery procedure.

### 7.2 Factory reset

If you are not able to access your BIKE all in one even with the correct PIN code, this safety procedure allows you to reset it and to be able to register your BIKE all in one again. Please provide to our Support team a proof of purchase of your bike.

Once the Support can confirm the bike is yours and that is not possible to connect with the current PIN code, they will authorize you to perform this procedure.

## 7.3 Deep Memory Reset (DMR)

The Deep Memory Reset procedure is needed when your BIKE all in one faced a critical issue in the memory overwriting.

In this case it can happen that:

- power modes are no more recognized (so motor does not assist or regenerate)
- odometer does not work (stuck at a certain value)
- odometer mismatch (odometer is displaying 6553.6 km)

Please provide to the Support team a screenshot of the ride section in which you highlight the problem.

**▲ NOTE: All the recovery procedures listed above needs a stable internet connection**

**▲ NOTE: All the recovery procedures listed above does not work if the bike is charging**

**▲ NOTE: All the recovery procedures listed above does not work if the bike is moving**

## 8. Using the other sections of **bitride-my bike**

### 8.1 Using the Map section

As of today, the map section is just a display of a third-party map service.

### 8.2 Using the Profile section

In the profile section you can select the unit measurement for distance (km or mi.) and you can log out from **bitride-my bike**.

### 8.3 Using the My devices section

In this section you can see all the Zehus devices you connected to and set your favorites. For any device you can see:

- Device type (your device is a bike plus)
- Device MAC address
- Device firmware

## 8.4 Password and PIN recovery within bitride-my bike

When you log out, or when you perform a fresh installation of bitride-my bike you will be asked to log in with your e-mail and password. If you forgot your password, simply tap on "?". A temporary password will be sent to you via e-mail.

When you connect to a registered bike with a new phone (or after a clear bitride installation) BIKE all in one will ask you for a PIN code.

It is possible to recover your PIN by pressing the "Forgot Pin" button. The PIN will be sent to the registration e-mail address linked to that device.

**▲ NOTE: every time a wrong pin is inserted a notification will be sent to the actual registration e-mail address.**

## 9. Notes on the battery pack

The battery pack is protected against deep discharging, overcharging, overheating and short circuit through the Battery Management System (BMS). In case of dangerous situation an electronic protection will switch the battery pack off.

Although the battery pack is protected from deep discharging, it is recommended to fully charge the battery pack before the first use of the bike.

### 9.1 Charging BIKE all in one battery pack (see also 2.4)

The battery pack can be recharged at any time without shortening its lifespan. Interrupting the charging process does not damage the battery pack.

**▲ CAUTION: DO NOT BIKE all in one near flammable surfaces.**

**▲ CAUTION: DO NOT charge a severely damaged BIKE all in one.**

In order to recharge BIKE all in one connect the charger plug to the charging connector located on the right side of the BIKE all in one axle. Then connect the charger plug to an outlet (see 2.4, Figure 5).

**▲ CAUTION: check the mains voltage: it must match the one indicated below the charger itself!**



The charging procedure will start as soon as the charger is connected both to **BIKE all in one** and to the mains. While charging, the LED located on the charger is red.

**▲ Note: the system is deactivated while charging the battery pack.**

When the charging procedure is over, the LED located on the charger turns green. Disconnect the charger from the mains and from **BIKE all in one**. Be careful when touching the charger, it can heat up considerably while charging.

**▲ Note: Remember to seal the connector on BIKE all in one with the proper protection-cap (see Figure 1). Using BIKE all in one without the protection cap will void the warranty.**

## 9.2 Battery pack storage conditions

**BIKE all in one** has to be stored at the right temperature. The battery pack life can be maximized by following the rules for a correct storage and handling.

In case of malfunctioning your battery pack will have to be replaced. Please refer to a Zehus retailer to have your battery pack replaced.

**▲ Note: when not using the bike for long periods it is recommended to charge the battery pack to 60% and to check the battery condition at least every 6 months. Before using the bike after a long period it is recommended to fully charge the battery.**

Store **BIKE all in one** in a well-ventilated location, dry if possible. Protect the hub from moisture and water. The optimal storage temperature is +20°C and the bike must be stored between -40°C and +60°C.

It is preferred not to leave the bike under the direct sunlight during hot summer days.

## 10. Technical data

Drive unit		
Rated power	W	250
Maximum torque	Nm	20
Battery pack		
Rated Voltage	V	29.2
Rated Capacity	mAh	5300
Energy	Wh	154.8
HUB		
Weight (~)	Kg	3.2
Operating Temperature	°C	-20°C to +70°C
Storage Temperature	°C	-40°C to +60°C
Charging Temperature	°C	-20°C to +60°C
Degree of protection		IP54
Charger		
Voltage Input	V	100~240 V, 50/60 Hz
Output voltage	V	33.6
Charging current	A	2
Charging time (~)	h	2.5

## 11. Maintenance and Service

**▲ CAUTION:** *Every maintenance procedure (even cleaning BIKE all in one) must be done with the "BIKE" mode enabled. On the contrary, severe injury may occur.*

### 11.1 Cleaning BIKE all in one

Please, keep **BIKE all in one** hub clean. Clean it with a soft, damp cloth. **BIKE all in one** may not be immersed in water or cleaned with high-pressure cleaner.

**DO NOT** use a high-pressure water jet to clean **BIKE all in one**.

For service, firmware upgrades, battery substitutions and repairs on the hub, please refer to authorized Zehus dealers.

### 11.2 After-sales Service and Customer Care

In case of questions concerning **BIKE all in one** or one of its components please read the FAQ on the Zehus website ([www.zehus.it](http://www.zehus.it)). In case you do not find an answer, please contact us through the procedures explained in 6 on page 20 or send an e-mail to support@zehus.it.

When contacting Zehus for an issue related to **BIKE all in one** please provide **one** of the following information together with the problem description:

- Registration e-mail for your **BIKE all in one**
- Bike name
- Bike MAC address (it can be found in the Bluetooth option on your smartphone)

### 11.3 Transport

Item with internal battery packs are subject to Dangerous Goods Legislation requirements. Private users can transport such undamaged items by road without further requirements.

When being transported by commercial users or third parties (e.g.. air transport or FWD agencies), special requirements on packaging and labeling must be observed (e.g.. ADR regulations). If necessary, an expert for hazardous materials can be consulted when preparing the item for shipping.

Dispatch **BIKE all in one** only when the housing is undamaged.

Tape or mask off the 6-pin connector in such a manner that the connector itself cannot be damaged or broken. Inform your parcel service that the package contains dangerous goods. Please also observe the possibility of more detailed national regulations.

In case of questions concerning transport of **BIKE all in one**, please refer to an authorized Zehus dealer.

Bicycle dealers can also provide suitable transport packaging.

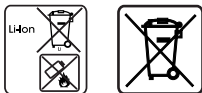
## 11.4 Disposal

**BIKE all in one** and all its components should be sorted for environmental-friendly recycling.

### Only for EC countries:

According to European Guideline 2012/19/EU, electrical devices/tools that are no longer usable, and according to European Guideline 2006/66/EC, defective or used battery packs/batteries **BIKE all in one** must be collected separately and disposed of in an environmentally correct manner.

Subject to change without notice



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