

ZEHUS

BIKE all in one generation **2**
revolutionary · again

USER MANUAL



Safety Notes



Read all safety warnings and all instruction. 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.** 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.

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- **Keep the battery charger away from rain or moisture. Keep the battery charger clean.** Danger of electric shock
- **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**

1. Getting started with BIKE all in one

1.1 Intended use

BIKE all in one is intended to be used exclusively within 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 4.1.

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 1 .

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.

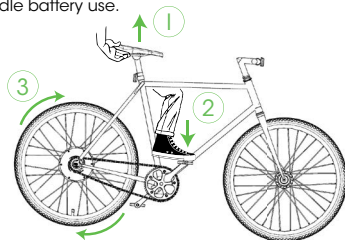


Figure 1: in order to turn on **BIKE all in one**, lift the bike (1), push the pedal (2) such that the rear wheel spins fast (3).

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 pedalling 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 2)

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:

1. Ride the bike and reach 8 km/h
2. Pedal backwards 3 times continuously

▲ *The bike will slow down while performing step 2, due to the regenerative braking function (see 2.2).*

BIKE all in one can also be activated using bitride connect smartphone application (see 4.1) or using Zehus remote controller (see 4.9).

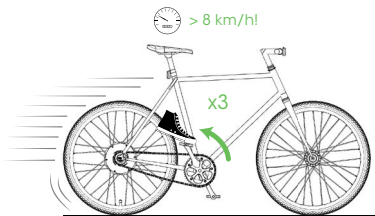


Figure 2: BIKE all in one activation procedure

2.1 Motor assistance

The motor assists the rider up to 25 km/h and with a maximum power of 250W just if you are pedalling. As soon as you stop pedalling, the motor will stop pushing.

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

The default power mode of BIKE all in one is the "turbo" mode. For instruction on how to change the power mode please refer to 4.2.

2.2 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 integrated Kinetic Energy Reccuperation System (KERS). In order to activate the regenerative braking you need to pedal backwards. As soon as you stop pedalling, the motor will stop braking. Regenerative braking can also be enabled using Zehus Remote Controller (see 4.9).

▲ **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.**

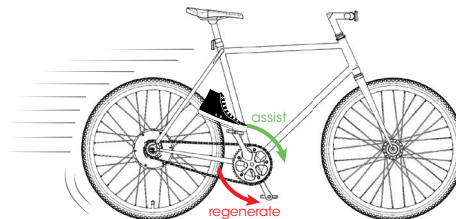


Figure 3: motor assistance and regenerative braking

2.3 Charging BIKE all in one (see Figure 4)

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 get disconnected from the bike, **BIKE all in one** will turn off.

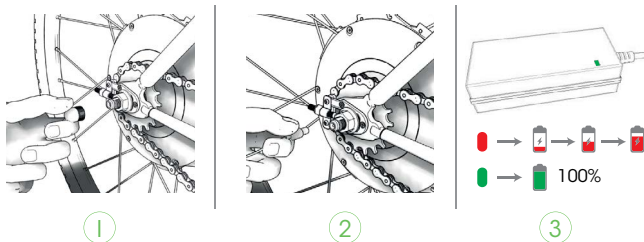


Figure 4: charging BIKE all in one

2.4 Change gears or tires on BIKE all in one

You can decide to change the sprockets or the crankset. If you change one or more of these components by yourself, **BIKE all in one** performances could be not optimal. Please contact a retailer 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 the retailer to update your bike parameters. Otherwise the displayed speed could not be correct.

2.5 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. The 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 be able to load the correct parameters on your **BIKE all in one**, you would have to connect a smartphone through bitride connect application.

▲ NOTE: after registering your BIKE all in one, you will be able to use your bike also without a connected device.

3.1 What is bitride connect app?

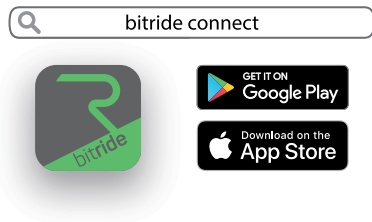
Bitride connect app helps you to act smarter during the everyday mobility; bitride also allows you to connect to a variety of devices via bluetooth, including your **BIKE all in one**.

3.2 Which devices does bitride connect app support?

Please check on your smartphone app store for updated information about app compatibility

3.3 How do you get bitride connect app?

You can download the bitride connect app from the Google Play store (for Android devices) or from the Apple store (iPhone) by searching for "bitride connect"



3.4 How much is bitride connect app?

Bitride connect app is available for free.

3.5 How do you install bitride connect app?

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

On iPhone:

- Open App Store
- Tap the search icon
- Enter "bitride connect" in the search field
- Select bitride connect in the search results
- Follow the standard installation procedure
- Register with a valid e-mail address

On Android:

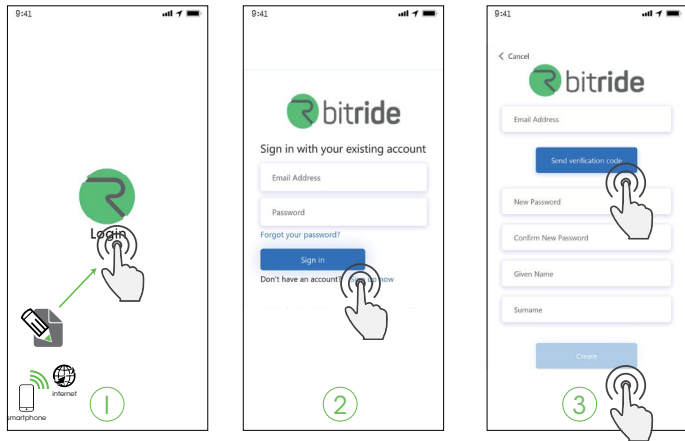
- Open Play Store
- Tap the search icon
- Enter "bitride connect" in the search field
- Select bitride connect in the search results
- Follow the standard installation procedure
- Register with a valid e-mail address

3.6 Create an account on bitride connect

Once you installed the app, press on the login hyperlink on the splash screen to access the login website, hosted by Microsoft Azure.

In order to register to bitride successfully you will need a valid e-mail address. A verification code will be sent to your address in order for you to be able to complete the registration procedure.

Once your bitride account has been created, you will now be able to register one or more Zehus devices to your personal account.



3.7 Registering your first BIKE all in one to your personal account

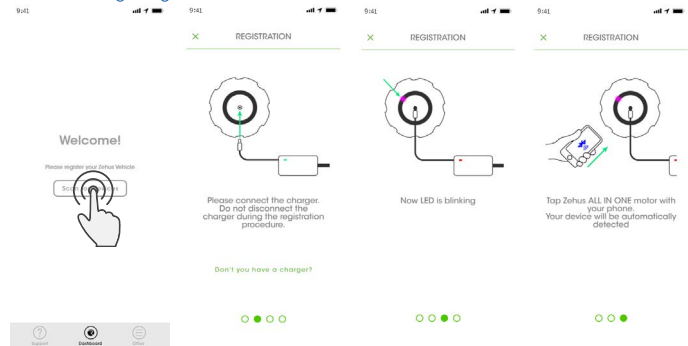
▲ **NOTE:** bitride connect uses bluetooth Low Energy to connect to your BIKE all in one. Please be sure your smartphone is compatible with BTLE technology.

▲ **NOTE:** every Zehus device can be registered ONLY to one account. Please be sure you perform un-registering of the vehicle before landing or selling it.

Once performed the login, hit the button "add new device" to register your BIKE all in one. Before starting the procedure we recommend you prepare your charger. Please assure you have a stable internet connection while registering.

▲ **NOTE:** Charger is not necessary to register, but it is recommended. Please remind that when you plug your charger off, your BIKE all in one will turn off automatically and connection will be lost.

Follow the on screen procedure to register your BIKE all in one. Further information can be found on the [getting started manual](#).



3.8 BIKE all in one updates during registration

If your BIKE all in one firmware is not updated, bitride connect will ask you to perform a firmware update in order to complete the registration.

BIKE all in one has 3 software modules that can be updated:

- DSC microcontroller, to perform motor and vehicle control
- Bluetooth microcontroller, to manage bluetooth compatible devices
- BMS microcontroller to control Battery pack functionality and safety

▲ NOTE: Registration procedure must be restarted after each module update. Update can take up to 10 minutes per module.

3.9 Your BIKE all in one purchasing information

It is possible to store your purchase receipt into bitride connect app. This is very useful in case you need to check if your BIKE all in one is still covered by our limited 2-years warranty. You can insert your purchase receipt during your registration procedure, or you can add it later via "my Vehicles" menu in the "other" section (see 4.4).



4. Bitride connect HMI for BIKE all in one

Bitride connect has 3 main sections that allows you to get the best out of your BIKE all in one:

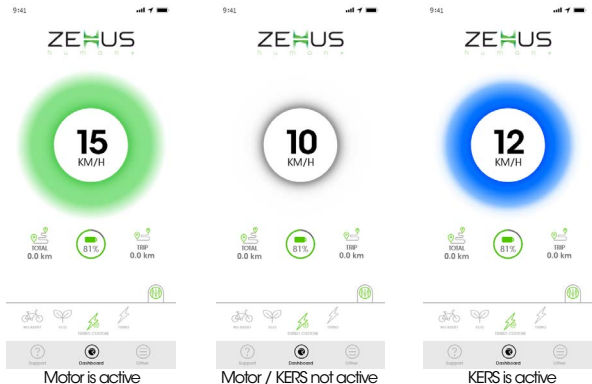
- Dashboard
- Other
- Support

4.1 Using the "Dashboard" section

Whenever bitride is connected to a BIKE all in one, an advanced dashboard is shown:



While you ride, lock button will disappear. In the same position, bike speed will be shown. Motor power infographic is showing the behavior of the motor. A Green circle is displayed when motor is assisting, while a Blue one appears when KERS is active to regenerate energy into the batteries:



4.2 Changing BIKE all in one power modes

In order to change the power mode, you simply slide the power mode carousel. If the selected power mode is customizable you will see the customize button on the bottom right of the screen



4.3 Locking / Unlocking your BIKE all in one

BIKE all in one features an electronic lock. When active, electronic lock generate a high braking force that increases with the bike speed. This function makes your bike very difficult to pedal on. In order to activate this function, tap and hold the lock icon in your dashboard screen. Lock is available when the battery charge is higher than 20% AND the bike is at 0 km/h. This function is unavailable while charging your **BIKE all in one**.

Lock will stay active until an authorized user connects to BIKE all in one and unlocks it. When BIKE all in one turns off, wheel will be released from the braking force. As soon as it will turn on again (speed higher than 5 km/h), the wheel will be safely locked again. To unlock BIKE all in one, just connect your smartphone and hold the center of the screen for 3 seconds.

▲ NOTE: the embedded electronic lock will not prevent thieves from stealing your bike. Please use an additional mechanic lock during prolonged stops.



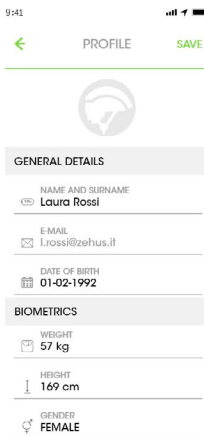
4.4 Using the "Other" section

In this section you can access:

- Your profile information
- Your vehicles information
- You can start a new registration
- You can log out from bitride connect


4.5 Your profile information

In this page you can see your general information. All profile data are stored according to GDPR, thus this data will not be shared with third parties.



9:41

PROFILE SAVE



GENERAL DETAILS

NAME AND SURNAME
Laura Rossi

E-MAIL
l.rossi@zehus.it

DATE OF BIRTH
01-02-1992

BIOMETRICS

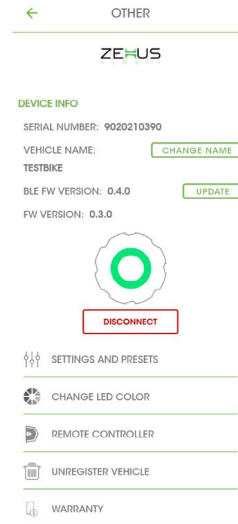
WEIGHT
57 kg

HEIGHT
169 cm

GENDER
FEMALE

4.6 Your BIKE all in one information

In "My Vehicles" page, it is possible to manage your Zehus powered bikes and scooters, change name, update firmware, force connection and disconnection, manage your settings and presets, change your BIKE all in one LED color, manage your warranty or Unregister your BIKE all in one.



OTHER

ZEHUS

DEVICE INFO


SERIAL NUMBER: 9020210390

VEHICLE NAME: CHANGE NAME

TESTBIKE

BLE FW VERSION: 0.4.0 UPDATE

FW VERSION: 0.3.0



DISCONNECT

SETTINGS AND PRESETS

CHANGE LED COLOR

REMOTE CONTROLLER

UNREGISTER VEHICLE

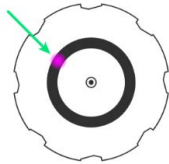
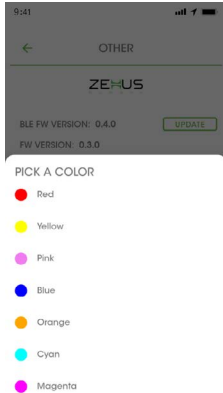
WARRANTY

4.7 Settings and presets

In this section you can find a quick explanation of BIKE all in one power modes. Please refer to 5 for further information

4.8 Change LED color

In this section you can change your BIKE all in one LED color, by choosing among 7 different colors:



4.9 Remote controller

In this section, you can connect your BIKE all in one to a Zehus Remote controller (optional). Zehus remote controller is a removable handlebar device that allows you to:

- Turn ON/OFF the bike without having to take your hands off the handlebar
- Change power modes on the go
- Activate KERS
- Activate BOOST function: motor power temporarily increases to 500W with 40 Nm of torque while BOOST button is pressed
- Monitor one between battery state of charge, motor power or bike speed

Zehus remote controller has 3 buttons, 6 LED indicators and 1 RGB status LED. It also integrates a Buzzer that signals when it is turning on (single beep) or when it is turning off (double beep).

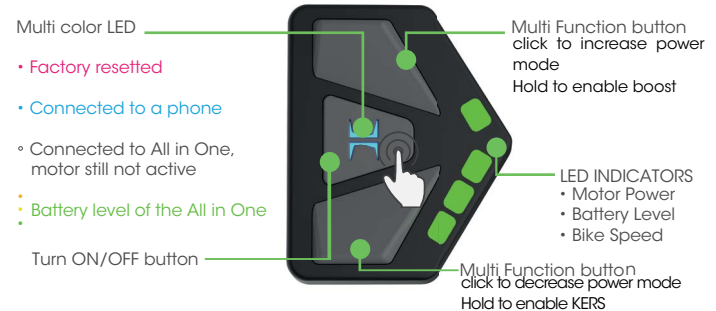


Figure 5: bitride dashboard for BIKE all in one

Charging your remote controller

Zehus Remote Controller has a mini USB charging port. It takes 2 hours to fully charge. Depending on the type of use, battery can last up to 2 weeks:



Mounting your remote controller to the handlebar

Thanks to Zehus remote controller support, once mounted on the handlebar, your remote will be in the perfect position for your thumb to press the buttons. You can decide to mount it either on the left handlebar or the right one. During Remote registration and configuration you will be able to specify the side you chose:



Registering your remote controller to a BIKE all in one

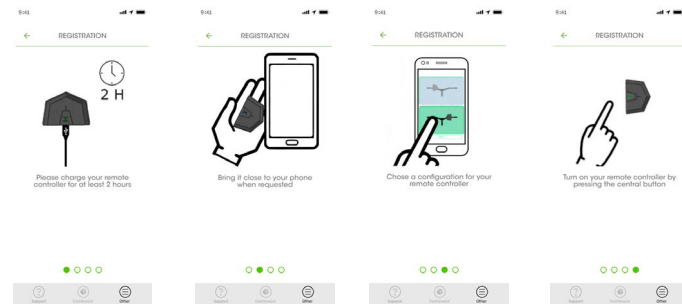
▲ NOTE: please charge your Zehus remote controller before use

In order to connect Zehus remote controller to your BIKE all in one, enter the registration procedure from "My Vehicles" section then:

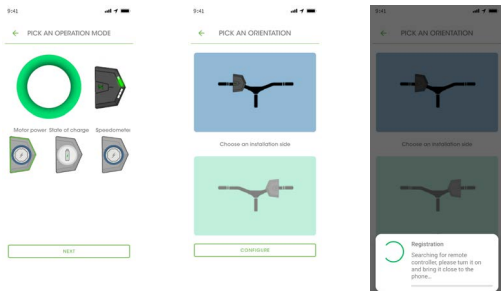
- Follow the on screen tutorial
- tap on "Start registration"
- Pick a display mode for your LEDs
- Pick a Remote Controller orientation
- Allow bitride connect to search for the remote controller

▲ NOTE: please do not turn on the remote controller until last step of the registration procedure

STEP 1 - registration tutorial on screen:



STEP 2 - customize your Remote Controller:



Now you can turn on your Remote Controller by clicking on the mid button. A short beep will confirm your remote has been turned on.

▲ **NOTE:** *previous firmware versions of the remote controller did not feature the buzzer function. Please update the firmware if you do not hear the buzzer working properly*

▲ **NOTE:** *at the end of this procedure, BIKE all in one will be turned off. Please turn on your BIKE all in one to use it.*

Remote controller will always auto-connect with your BIKE all in one everytime that:

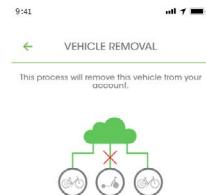
- BIKE all in one is turned on
- Remote controller is turned on
- Battery status of both devices is sufficient

4.10 Unregister vehicle

Your BIKE all in one can be only registered to ONE bitride connect user. It is then important that when you decide to lend or sell your bike you perform the unregister procedure from "My Vehicles" menu.

▲ **NOTE:** *it is not necessary to be connected to BIKE all in one in order to unregister it. A stable internet connection is needed for this procedure.*

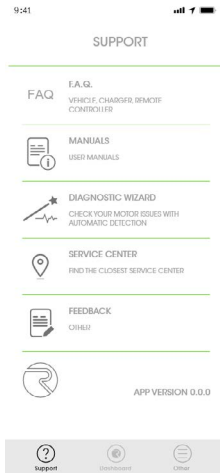
▲ **NOTE:** *unregistering BIKE all in one will NOT remove the link between BIKE all in one and a previously paired Remote Controller*



4.11 Using the "Support" section

This section allows you to:

- Read the Frequently Asked Question of Zehus products
- Check the manuals for Zehus products
- Perform our "Diagnostic Wizard"
- Search for Zehus Service Center
- Send us a Feedback
- Check the app version



4.12 Zehus Diagnostic Wizard

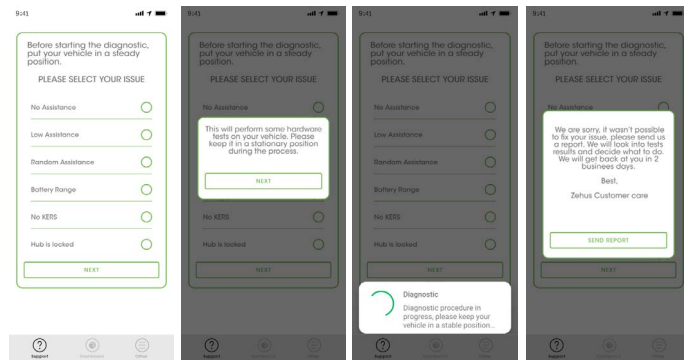
Zehus Diagnostic Wizard can help if you think that your drivetrain may have some problems. The clear guided procedure asks you about possible issues in your Zehus system, then it collects information from your BIKE all in one.

When needed, Zehus Diagnostic Wizard will perform some hardware tests on the complete system. If problem was not solved remotely, Zehus Diagnostic Wizard will generate a report in a simple .txt format.

▲ NOTE: all customer's data and bikes data are gathered and stored on Zehus Servers according to GDPR. These data are only used for service purposes. Please refer to our privacy policy for more information.

Please share the report with support@zehus.it through your preferred e-mail client.

This procedure will help us helping you!



5. BIKE all in one power modes

Your **BIKE all in one** let you choose among different power modes. Each power mode has a different assistance factor and a different pedalling range.

The following power modes are available: Turbo, Turbo Custom, Eco and OFF. Turbo Custom is customizable to meet your needs.

Here you can find a detailed description of **BIKE all in one** power modes:

- Turbo: this power mode is a regular pedelec (or Electric Pedal Assisted biCylce). The motor assists you up to 25 km/h and with a maximum power of 250 W, depending on the speed of the bike and on the effort on the pedals. With this power mode you can cover up to 35 km*. In this power mode KERS is enabled.

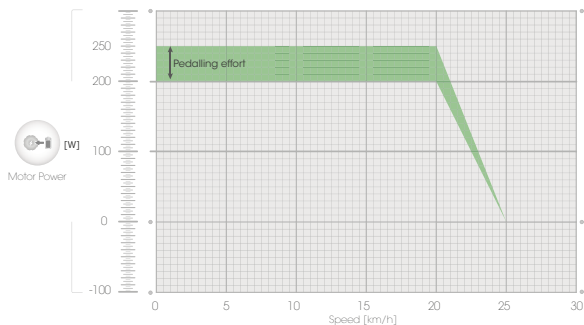


Figure 6: motor assistance in turbo power mode

- Eco: this power mode is a regular pedelec (or Electric Pedal Assisted biCylce). The motor assists you up to 25 km/h and with a maximum power of 250 W, depending on the speed of the bike and on the effort on the pedals. Motor assist is softer than Turbo power mode, so with this power mode you can cover up to 55 km*. In this power mode KERS is enabled.

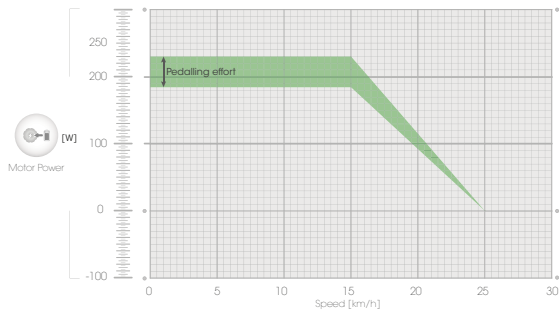


Figure 7: motor assistance in eco power mode

The default power mode is "Turbo".

5.1 Customize Power Modes

It is possible to customize Turbo power mode for a softer ride, by choosing 3 parameters:

- Boost: with this parameter you change the maximum level of motor torque at low speed. The higher the parameter is set, the higher the torque. In turbo mode, this parameter is set to 100%
- Assistance: with this parameter you change the speed range of your maximum torque level. Torque value will be then decreased until motor support is set to 0.
- KERS: with this parameter, you can decide to limit or remove KERS while braking.

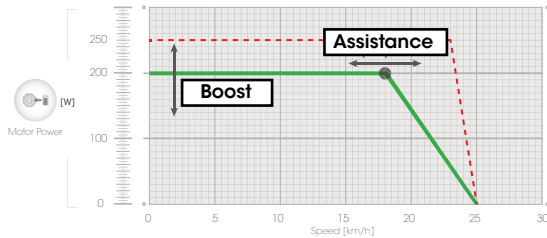


Figure 8: Boost and Assistance parameters in Custom Power mode

5.2 Influences on BIKE all in one range

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

- Chosen operational mode
- 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 for the different operational modes indicated above.

6. 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.

6.1 Charging BIKE all in one battery pack (see also 2.3)

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 charge a damaged BIKE all in one. Please refer to an authorized Zehus dealer.

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 2.3, Figure 4).

▲ 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. Using BIKE all in one without the protection cap will void the warranty.

6.2 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.

7. Technical data

Drive unit		
Rated power	W	250
Maximum torque	Nm	30 (40 with RC boost)
Battery pack		
Rated Voltage	V	28.8
Rated Capacity	mAh	6000
Energy	Wh	172.8
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		IPx5
Charger		
Voltage Input	V	100~240 V, 50/60 Hz
Output voltage	V	33.6
Charging current	A	2
Charging time (~)	h	3

8. Maintenance and Service

▲ **CAUTION:** Please make sure that you turn off the motor assistance (power mode OFF, see 5) before every maintenance procedure. Otherwise, severe injury may occur.

8.1 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.

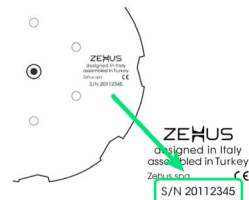
For battery substitutions and repairs on the hub, please refer to your bike's dealer.

8.2 After-sales Service and Customer Care

In case of questions concerning **BIKE all in one** or one of its components please read the FAQ in the bitride connect application. In case you do not find an answer, please send an e-mail to support@zehus.it.

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

- Registration e-mail for your **BIKE all in one**
- S/N of the all in one unit
- Report from Diagnostic Wizard
- Detailed description of the problem



8.3 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.

Protect the charger connector with the provided closed nut 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.

8.4 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



Your Notes:



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Rev 2021/05-rev2.00

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