

### USER MANUAL MANUAL DE USUARIO MANUEL DE L'UTILISATEUR BENUTZERHANDBUCH ユーザーマニュアル MANUALE D'USO







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### FSA NEW REAR HUB ELECTRIC-ASSIST MOTOR SYSTEM

Innovative and compact "FSA System" is designed for road, gravel and commuter e-bikes. The "FSA System" comprises of a rear hub electric-assist motor, a 250Wh battery unit, a further 250Wh expansion battery, with an integrated on-bike control unit and smartphone app.



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### WARNING AND SECURITY

### **IMPORTANT NOTICE**

- This manual is intended only for use by experienced mechanics.
- Read the user manual carefully.
- The warranty is voided with any structural change to the product.
- User manual on our website (http://www.fullspeedahead.com).
- Follow the laws and regulations of each country.
- The Bluetooth® trademark and logos are registered trademarks of Bluetooth SIG,Inc. Any use of this trademarks by FSA-VISION is subject to a License.



This device uses ANT+ Protocol.

### **WARNINGS**

- For disposal, completely discharge the battery and go to a suitable collection center (RAEE-European directive 2012/19/EU and 2006/66/EC).
- Do not deform, modify or disassemble the battery or weld directly on the battery. Failure to comply may result in leakage, overheating, explosion, or battery fire.
- Do not leave the battery near heat source. Do not heat the battery. Failure to comply may result in leakage, overheating, explosion, or battery fire.
- Do not expose the battery to strong impacts. Failure to comply may result in leakage, overheating, explosion, or battery fire.
- Do not immerse the battery in the water, and avoid connectors getting wet. Failure to comply may result in leakage, overheating, explosion, or battery fire.
- To charge the battery, use the specified FSA battery charger and observe the indicated rules.
- Do not leave the battery permanently connected to the battery charger.

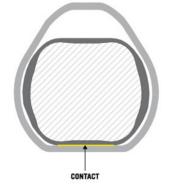
### **A** DANGERS

- When the bike is moving, avoid being distracted by the power/level battery button.
- Before using bike on busy road, familiarize yourself with starting the e-bike. The bike could start too abruptly to keep control.
- Do not disassemble the product.
- If liquid is leaking from the battery, and should come into contact with the eyes. Immediately rinse the affected area with water without rubbing the eyes and contact a doctor. If these instructions are not observed, ocular lesions may occur.
- Do not insert or remove the plug when it's wet. In the event of non-compliance, electric shocks may occur.
- Do not leave the battery in places exposed to direct sunlight, inside a vehicle on a hot day, or in other warm places. This could cause battery failure.





# 2. BATTERY AND CONTROLLER



Dimensions: Length 469mm. Section 42.0 x 49.5mm.

This section of the down tube and the battery shows how the battery must rest firmly (yellow) on the inner wall of the tube, while on the other sides, a minimum distance must be respected which can vary according to the construction tolerances of the frame, we recommend at least 1mm minimum space. The controller must be screwed in perfectly.

### **BATTERY FEATURES** Temperature range of use 0 - +40 Degrees Celsius Temperature range of charging +10 - +40 Degrees Celsius Long life storage temperature 0 - 20 Degrees Celsius, Humidity <65% **Charging voltage** CC-CV 2A max 42.0 V Type of cell 18650 500 (60% capacity) **Recharge cycle** 36 V **Nominal Voltage** Li-ion **Battery type** 252 Wh Nominal capacity Max Output 15 A Motor Type **Brush-less DC** 1,4kg (1,7kg with controller) Weight 4h (100%) **Charging time**

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## 3. MOTOR

MOTOR FEATURES				
Power (W)	250			
Max Speed (km/h)	25			
Voltage (V)	36 (Min: 30; Max: 42)			
Wheel size (Inch)	28			
Color	Black			
Hexagon disc brake screw	M5x8 (x6)			
Disc Brake Diameter	>=160mm			



# 4. POWER ON / OFF

#### Power ON / OFF Button:

- To turn ON the system, press the button for 1 second.
- To turn OFF the system, press and hold the button for 4 seconds.

#### Assistance Level:

When switched on, the system automatically selects the ECO level (green).

Meanwhile, please don't place your feet on the pedals and do not move the bike, it must be stationary (0km/h), in order to allow the torque sensor and speed sensor to calibrate themselves. As soon as the light turns to the green, the bike can be mounted and feet placed on the pedals.



To select the desired assistance level, press the button: with each successive press, the assistance level increases: 1 green, 2 blue, 3 pink, 4 yellow, 5 red. At selected level 5, a further pressure on the key will return to level 1.

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Level 1	Level 2	Level 3	Level 4	Level 5
Eco: Green Light	Blue Light	Pink Light	Yellow Light	BOOST: Red Light
Neutral	Active	Active	Active	Active



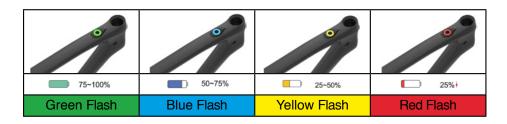
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### 4. POWER ON / OFF

### **Battery Level:**

While using the system, regardless of the level of assistance selected, it will be possible to check the battery charge level.

A flash of light, will be displayed every 2 seconds, indicating the state of charge of the battery. An accurate reading of the battery charge level can be made via the APP.



#### Recharge Battery step:

Connect the battery charger to the main socket and connect the battery charger to the e-bike charging socket. The battery charger will automatically switch on and the e-bike button will start flashing every 2 seconds. (0.5 sec. ON; 1.5 sec. OFF).

Battery charger indicator.

- Red: Charging. (Flashing e-bike button with color level battery; See above, as battery level).
- Green: Full charge. •

#### Error/fault condition report:

Any error of system or protections (use out of the limits or faults) are signaled by a flashing of the button.

- Yellow: Temporary error (0.5 sec. ON; 0.5 sec OFF).
- Red: •

1. The battery is not connect to controller or CAN-bus. No data reading (0.5 sec. ON; 9.5 sec OFF).

2. The battery is charging. The level of charge is at the minimum (0.5 sec. ON; 4.5 sec OFF).

3. Permanent failure, disconnect the battery, isolate it and return (0.5 sec. ON; 0.5 sec OFF).



### **5. RANGE EXTENDER**

#### Installation:

Install the range extender holder on the seat tube or down tube of your frame using the two screw provided with the frame. Make sure that the screw have Loctite on them and are properly tighten. Do not overtighten the screw. The FSA RE Holder comes with a specific Velcro strap to secure the RE inside the holder.



Use only the FSA RE holder; do not use any other system. Make sure to use the strap to fix the RE using the Velcro strap. EN



### **5. RANGE EXTENDER**

#### Connection:

Connect the cable of the range extender to the IT charging port. Using you finger, turn the lock-ring clockwise until a full stop, make sure the lock-ring is properly engaged and tightened



If the cable is too long please use the specific hook in the back of the range extender to secure the slack of cable. You might want to hook the cable in position before fitting the RE inside the RE holder





### **5. RANGE EXTENDER**

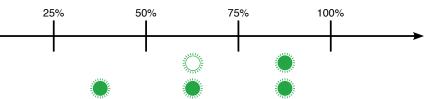
#### Use and maintenance:

The range extender is activated by the main IT button: when you turn on the FSA System, it will

automatically check for a RE connected. If a RE extender is present it will be activated automatically.

You can use the power button to check the RE level or to force the RE to turn on, however if it is not connected to a IT battery will turn off by itself. When the RE activation procedure is completed you will see the two led on, the led combination will depend from the state of charge.

0%-25%: One LED blinking 26%-50%: One solid LED 51%-75%: One Solid LED + One blinking LED 76% -100%: Two solid LED



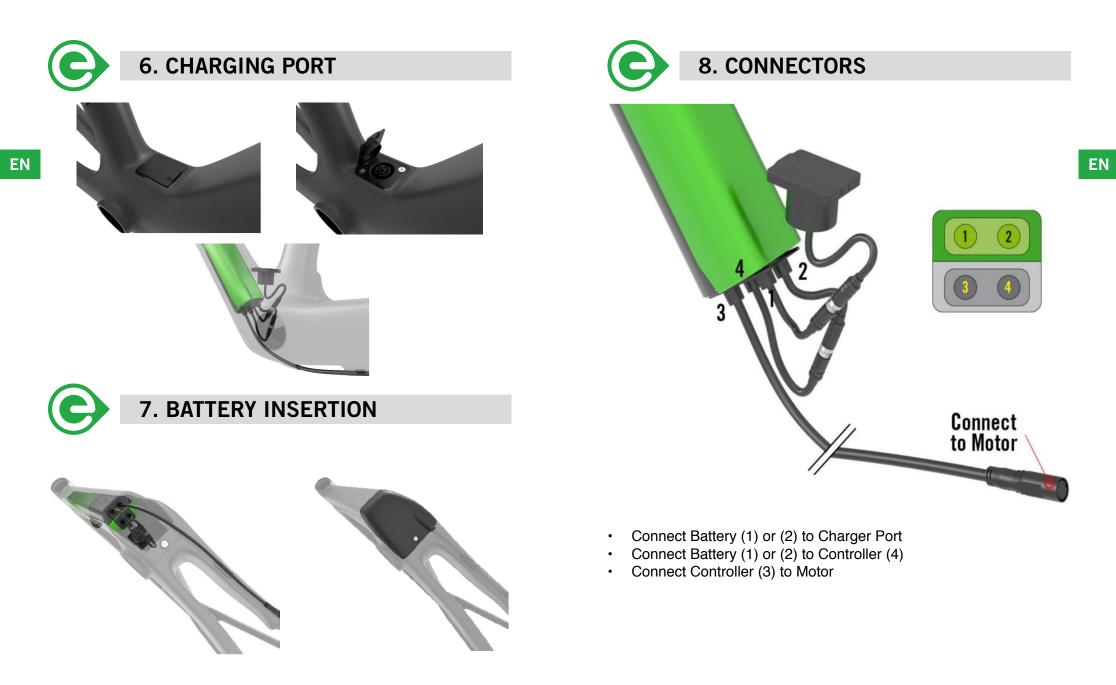
The system will start using the RE extend first, when the RE charge reach 0%, the system will start using the IT. Be aware that during this phase the IT will turn off, it will be necessary to turn on the system. Please be aware during this phase do not apply force on the pedal to avoid problems with the calibration.

DO not unplug the RE when the system is ON, if you unplug the RE when the system is on the

system will go in error mode. In case this might happen, turn off the system and then turn on again.

Make sure not to use oil or aggressive detergent on the range extender, this might damage the plastic shell or compromise the waterproofing of the system. Check periodically the cover button to make sure there are no cracks and it's not peeling off.

To charge the range extender please use the specific adaptor and plug it to the same charged used for the main IT battery. Do not use other adapter or other charger to charge the battery.



# 9. APP - LOGIN AND CONNECT



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Clicking on "New User" to register.

Fill with your data to register. You will receive a confirmation e-mail in your personal account.



On the Home Page, click on "Connect" to pair the app with your E-Bike



Standing near the E-Bike during the searching and select the System Number



# 9. APP - FIRMWARE UPDATE

With the System connected now is possible to check for firmware updates





On the "Firmware Management" icon will appear the number of available updates

Clicking on the "Firmware Management" button, you will enter in the dedicated section



Selecting "Update Firmware" the process will begin.



Wait until the process is completed, without closing the app.

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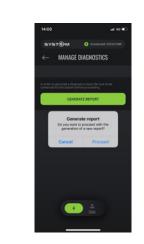
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# 9. APP - REPORT



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Clicking on the "Manage diagnostics" button, you will enter in the dedicated section



After the analysis all the data and informations will appear

Clicking on the "Generate Report" button the analysis wil start. Wait until the end without closing the



Scrolling the tabs, you can check all the datas selecting the system part you are interested on.



# 9. APP - REPORT



*In the last column you can see eventual errors* 



# 9. APP - YOUR ACCOUNT





Clicking on the "User" icon you can manage your account Clicking on "Edit Profile" button, you can modify your personal informations ΕN

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