

E03 LED Display User Manual



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TruckRun

Wuxi TRUCKRUN Motor Co.,Ltd Contents

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I.Product Introduction

1. Product Name:

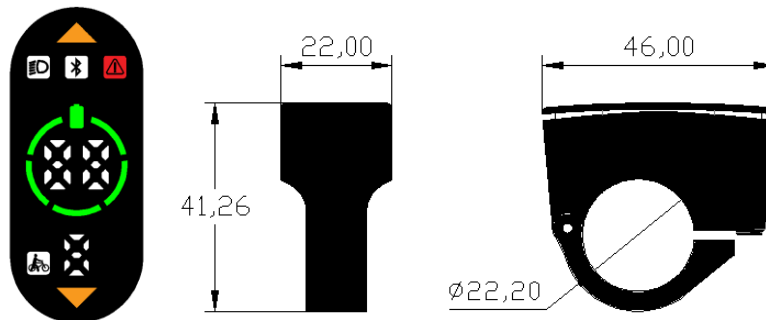
Left-hand LED Smart Display

2. Model Name:

TK.E03。

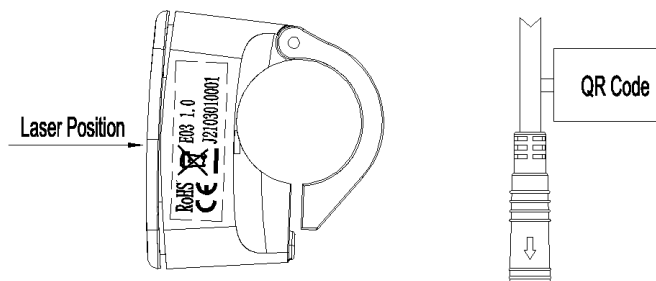
3. Appearance:

Housing Material: PC; Liquid crystal transparent window:Acrylic (as shown in figure)



4. Backside QR Code Labeling Rule

Laser Position and QR code label (See image below)



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1) Laser Contents:

Upper Row: E03 1.0;

Commentaries: E03: Display model name (The first character "X" means it's CAN Protocol, if there's no "X", it's defaulted as UART protocol) ;

1.0: Hardware Version number;

Bottom Row: J2103010001

Commentaries: J: TruckRun's internal code;

210301: Production date, 21 (Year) 03 (Month) 01 (Day) ;

0001: Serial number.

2) QR Code Labeling Content:

Row 1: DE031001.0

Commentaries: D: Short name of Display;

E03: Display model name;

10: Hardware version number 1.0;

01.0: Software version number.

Row 2: ST050527.525

Commentaries: ST: Short Name of parameter setting;

05: Speed Level 0-5;

0: Defaulted 0 level when power on;

5: Automatic Power Off time-5min;

27.5: Wheel Diameter;

25: Speed limit

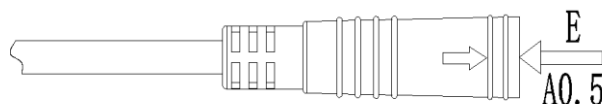
Row 3: E03-01

Commentaries: E03: Display model name;

01: The first drawing number.

5. Outgoing Cable Description:

- 1) Cable type: A0.5 (Circular head female cable with 5 cores)



2) Cable definition :

Pin No	Color	Function Definition	Picture
1	Orange	VCC (Lock Wire)	<p>View E</p> <p>Orange Black</p> <p>White Brown Green</p>
2	Brown	P+(Power+)	
3	Black	GND	
4	White	TX	
5	Green	RX	

II.Product Description:

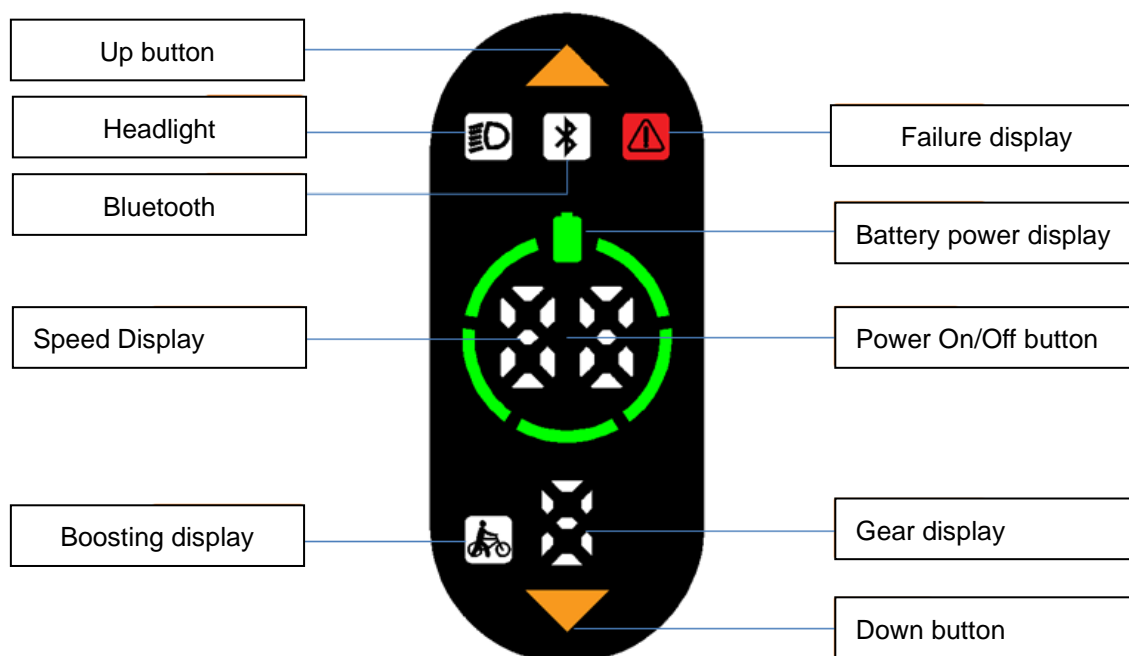
1. Specification Parameter:

- 1) Communication Protocol: UART;
- 2) Working Voltage: DC36V/48V, Maximum working voltage $\leq 60V$;
- 3) Rated working current: 10mA;
- 4) Maximum working current: 30mA;
- 5) Shutdown Leakage Current: $<1\mu A$;
- 6) Working current supplying to controller: 50mA;
- 7) Working Temperature: $-20\sim 45^{\circ}C$;
- 8) Storage Temperature: $-30\sim 70^{\circ}C$;
- 9) Storage environment humidity: 30%-70%;
- 10)IP Rating: IP65;

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2. Feature Overview:

- 1) Real-time speed display;
- 2) Real-time display of battery power; (Detailed battery power display refers to Annex 1)
- 3) Gear adjustment and display;
- 4) Boosting function and display;
- 5) Headlight control and display; (when the headlight is power-on,the backlight brightness of the display will be decreased.)
- 6) Blue tooth function: BLE pass-through, to be displayed after being connected with APP successfully;
- 7) Failure display: After a system failure occurs,the failure indicator light will be on,and there will be the corresponding error codes displayed on the mileage area. (Error codes refer to Annex 2)

3. Functions Layout

4. Button Definition

There are three buttons on E03 display,including Power On/Off button,up button and down button.

Long press button,more than 2S, short press button,less than 0.5S.



5. Normal Operation

1) Power On/Off

Long press “Power”button in Power-off condition,the display starts to work;

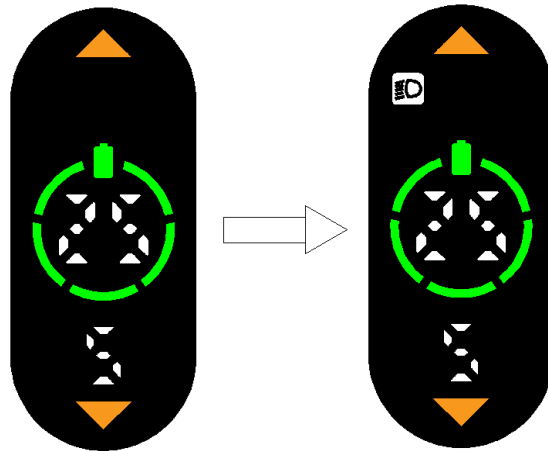
Long press “Power”button in Power-on condition,the e-bike power is shut-down.

(In power-off condition,the leakage current of the display is less than 1uA.)

When there are no operations to display for 5 mins(default,can be adjusted according to the real requirement),and no speed shown on the display,the display will be shutted down automatically.

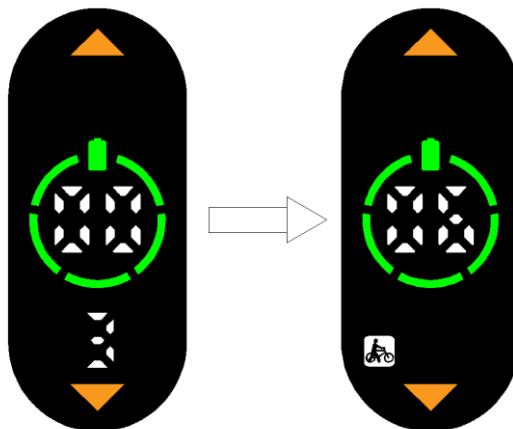
2) Headlight On/Off

Long press “Up”button for 2S,the controller receives the signal to light on the headlight,and the headlight icon will be shown on the display,meanwhile the backlight brightness of the display will be decreased. When the headlight is On,long press the “UP”button for 2S,the controller receives the signal to light off the headlight,and the backlight brightness of the display will be restored.



3) Boosting

When the Ebike is stationary, long press "Down" button at any gear, the Ebike will come to the electric boosting condition in 2S, and the boosting icon will be shown on the display. When the actual wheel speed is not detected, the speed will be shown as 2KM/H (or 1MPH in MILE). When the actual wheel speed is detected, it will show the real speed on the display, the max speed is 6KM/H. Release the "DOWN" button and the Ebike will immediately stop output and return to the pre-boost state.



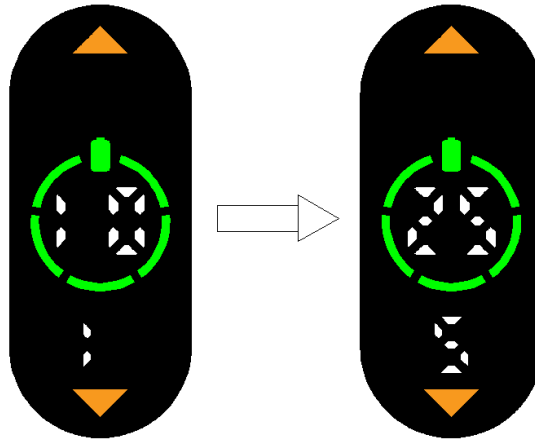
4) Boosting gear selection

Short press "UP/DOWN" button, switch the Ebike boosting gear, and change the motor output power, the default output power range on the display is from 0 to 5 (or according to customer's requirements), "0" means stop the power output, "1" means the lowest

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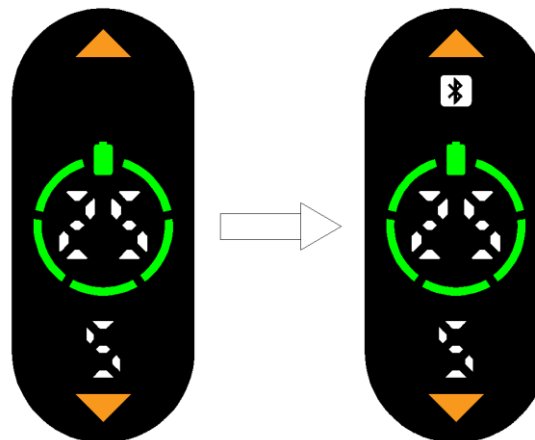
power, "5" means the maximum power. It's default that no limit to the maximum speed of each gear, and the maximum speed of each gear can be set according to customer's requirements.

The default startup gear of the display is 0.



5) Bluetooth Connection

When power on, use mobile phone or other Bluetooth device to search for the display. After successful connection, the display interface shows the Bluetooth icon; The Bluetooth icon disappears after exit the Bluetooth function.

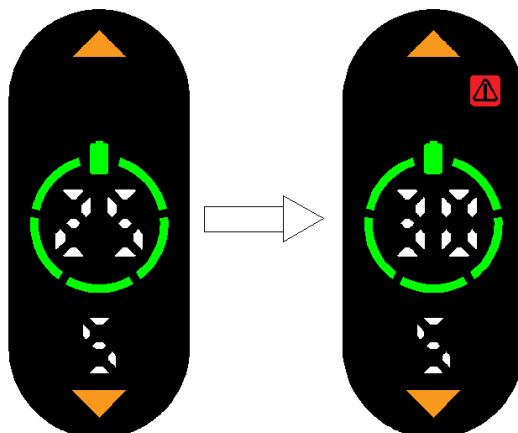


6) Failure display

When the system fails, the display shows the fault icon, the speed display position shows the corresponding error code and blinks at the frequency of 1HZ.

Error code "21": The Ebike boosting is normal, the speed display position keeps flashing with error code;

Other failure error, the Ebike stops boosting, the speed display position keeps flashing with error code, the system will automatically shut down if the failure is not resolved after 30 seconds.

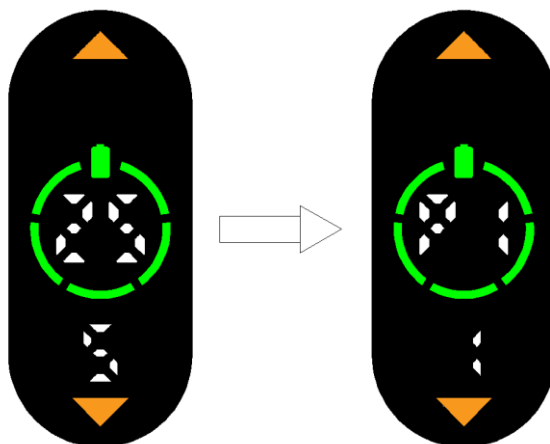


6. Function Setting

1) Setting Operation

Enter/Exit setting: When the Ebike is on and stationary, double-click "POWER" button to enter the setting interface. At this time, "P1" will be displayed in speed position and "1" in gear position. Short press "POWER" button to enter the setting interface. Short press "UP/DOWN" button to adjust the parameter settings, and short press "POWER" button to save the settings and exit. Short press the "UP/DOWN" button to enter the next function screen. Double-click "POWER" button to save the settings and exit the parameter setting state.

In the setting state, if no operation is performed within 30 seconds, the display saves the current setting and returns to the main interface. The default gear is 0.

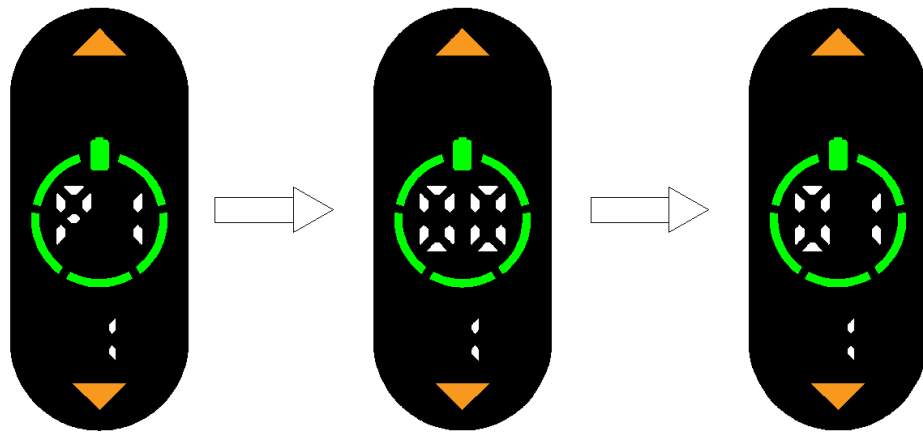


2) KM / MILE Selection

Enter into the setting interface, the speed position shows "P1", and the gear position shows "1", short press "POWER" button to enter the setting option, the speed position shows "00" or "01", and blinking. "00" indicates that the unit is kilometers, and "01" indicates that the unit is miles. Short press the "UP/DOWN" button to switch the unit selection, and short press the "POWER" button to save and exit the current setting. Short press "UP" button to enter the speed

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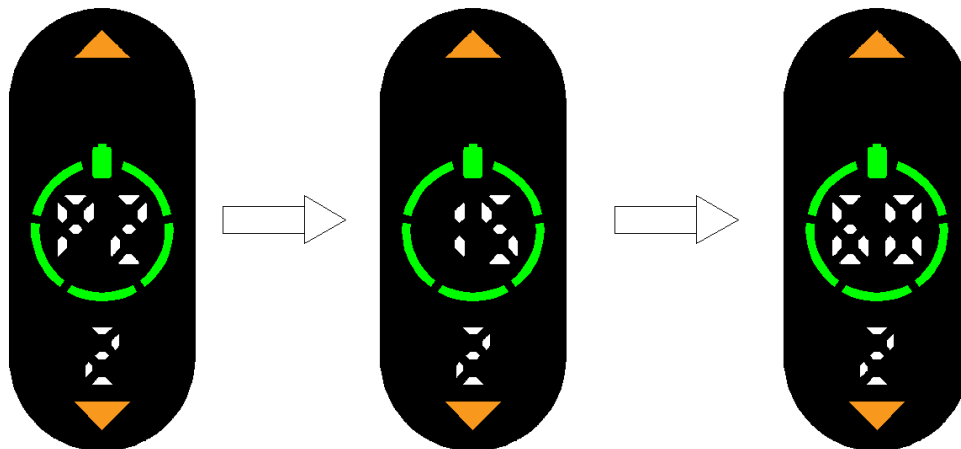
limiting setting screen, or double-click "POWER"button to return to the main interface.
The default Unit is KM/H.



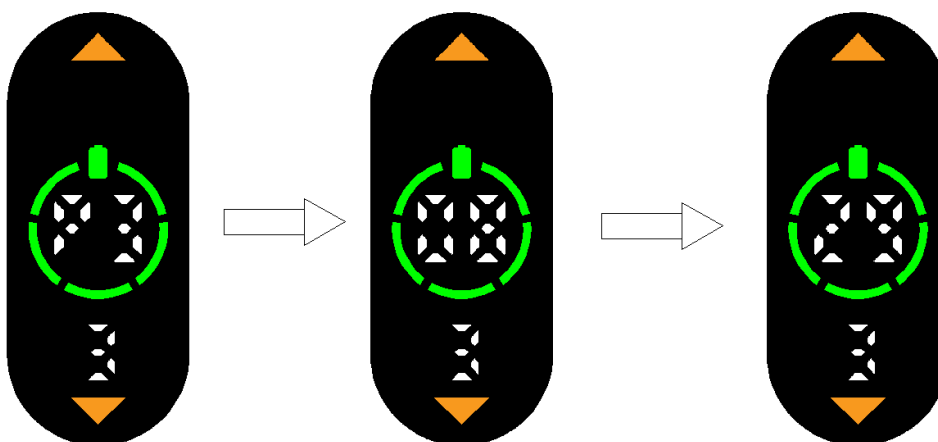
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3) Speed limiting setting

Enter into the setting interface,the speed position shows "P2",the gear position shows "2",short press "POWER" button to enter into the setting option.,then the speed position shows "15-60"and blinking. Short press the "UP/DOWN"button to set the rate limiting value.Short press the "POWER"button to save the Settings and exit the current Settings. Short press "UP"button to enter the wheel diameter setting screen, or double-click "POWER"button to return to the main interface.

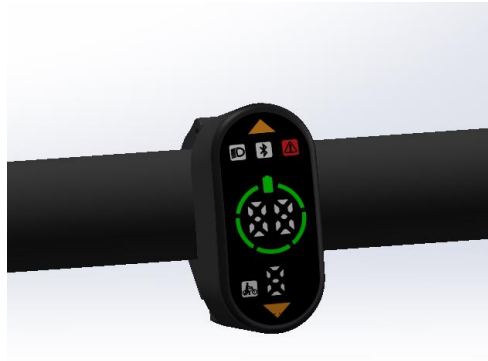
**4) Wheel diameter setting**

Enter into the setting interface,the speed position shows "P3",the gear position shows "3", short press the "POWER" button to enter the setting option,then the speed position shows "08-29" wheel diameter in inch and blinking.Short press the "UP/DOWN" button to set the wheel diameter, and short press the "POWER" button to save settings and exit the current setting option. Short press "UP"button to enter the KM / MILES setting screen, or double-click "POWER" button to return to the main interface.



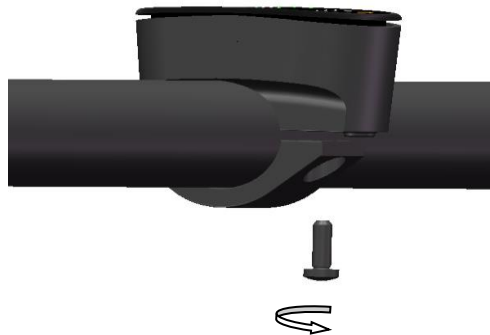
III.Product Installation

- 1) Open the display handle, cover the handlebar in the proper operation position, adjust the angle of the auxiliary switch, so that it is easier to see the switch and easy to operate when cycling (suitable for the handle tube with an outer diameter of $\phi 22.2\text{mm}$);



Display Button Installation

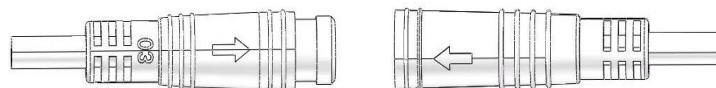
- 2) Use the hexagon wrench to fix and tighten the hexagon cylindrical head screws for fixing the handlebars (locking torque: 0.4N.m);



Fasten with screws

*** Screw locking torque, excessive torque causes the display to be damaged is not included in the warranty.**

- 3) Connect the display plug-in with the integrated wiring harness according to the mark.



Harness Docking

IV. Annexes

1) Annex 1: (Battery Power Display)

Battery power is displayed in five sections.

When the battery capacity is greater than 75% (or according to customers' requirement), will show five power bars;

When the battery is under voltage, the battery icon blinks at 1HZ, indicating that it needs to be charged.

Undervoltage or capacity range can be shown as required by the order.

Bars	Capacity Range	Example
5 bars	$75\% \leq \text{SOC} \leq 100\%$	
4 bars	$50\% \leq \text{SOC} < 75\%$	
3 bars	$30\% \leq \text{SOC} < 50\%$	
2 bars	$10\% \leq \text{SOC} < 30\%$	
1 bar	$5\% \leq \text{SOC} < 10\%$	
LOW	$0\% < \text{SOC} < 5\%$	

2) Annex 2: (Error codes)

Error Code	Cause
0x04	Throttle Failure
0x06	Undervoltage (do not display error)
0x07	Overvoltage
0x08	Motor Hall Failure
0x09	Motor Phase Line Failure
0x10	Motor Temperature Reached To The Protection Point
0x11	Motor Temperature Sensor Failure
0x12	Electric Current Sensor Failure
0x15	Controller Temperature Sensor Failure
0x21	Speed Sensor Failure
0x30	Communication Failure

V.Warranty Description

Wuxi TRUCKRUN Motor Co.,Ltd guarantee that during the warranty period, for the products purchased by E-bike manufacturers or dealers from our company, if it is true that there are quality problems of product part materials or process, we TRUCKRUN motor can provide the warranty service.

Warranty period and scope

The warranty period of motor,display and other electronic components is 18 TRUCKRUN(battery is 12 months)from the date of product delivery from Wuxi TRUCKRUN Motor Co.,Ltd.

Products that conform to the above warranty statement are not covered by the warranty if the damage is caused by one of the following conditions:

- ① Damage caused by improper conversion or maintenance, used for competition or commercial purposes, misuse or abuse, or traffic accidents;
- ② Damage occurred during transportation;
- ③ Damage caused by not following the product installation manual(maintenance manual)to install, debug or repair the product;
- ④ Damage caused by consumers'improper usage but not caused by the material or process;
- ⑤ Damage caused by changes in the appearance of the product, and the damage does not affect product's function;
- ⑥ Damage caused by not maintaining or installing by our designated maintenance location or dealers;

Wuxi TRUCKRUN Motor Co., Ltd. has the right to choose repair or replacement, and the sole responsibility of TRUCKRUN Motor is limited to product repair or replacement.

When a Ebike manufacturer or dealer has quality problems in using or selling our products,send PO's batch number and product serial number to TruckRun's After-sales Service Department. If TruckRun's after-sales service department confirms that the products meet the

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warranty scope, TRUCKRUN Motor will provide free repair or replacement.

If you require repair service out of the warranty period, TRUCKRUN Motor will charge the corresponding cost of parts, labor and transportation.

If any of TruckRun's products installed on the eBike need to be repaired, please contact the manufacturer or dealer directly.

In case of any conflict between this warranty statement and the current law of the sales area, take law as the criterion.

TRUCKRUN Motor reserves the right to modify the above terms and conditions without any advance declaration.

For more information and content, please visit TruckRun's official website : www.TRUCKRUN-e.com