Yolin

Electric Bike Display

User's Manual

YL91F-E

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1. Product Name and Model Number

Smart LCD display for electric bicycle; Model: YL91F-E.

2. Specification

- 48V power supply
- Display rated current 15mA
- Display maximum current 30mA
- Shutdown leakage current <1uA
- Supplied current to the controller 50mA
- Operating temperature -10～60℃
- Storage temperature -30～70℃

3. Appearance and Size

Figure 3-1 Physical picture of the 91F-E display

Figure 3-2 Physical picture of the K8 control button

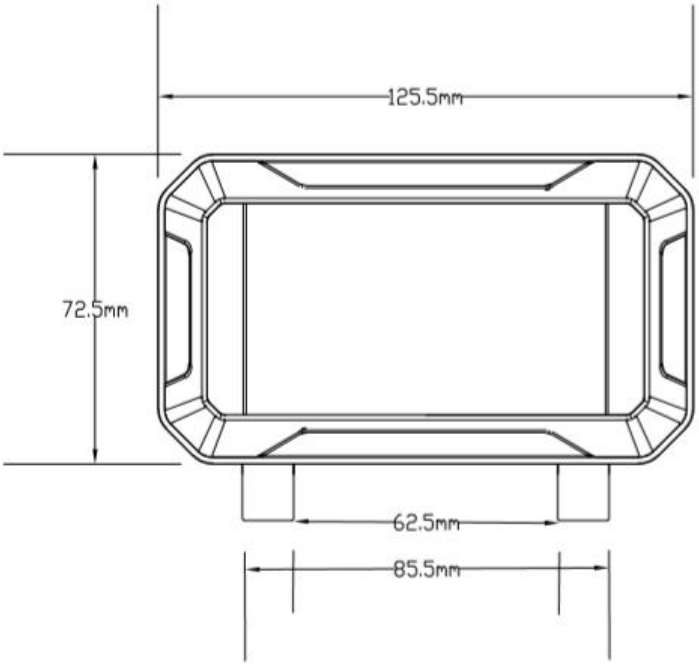


Figure 3-3 91F-E Front View Dimension

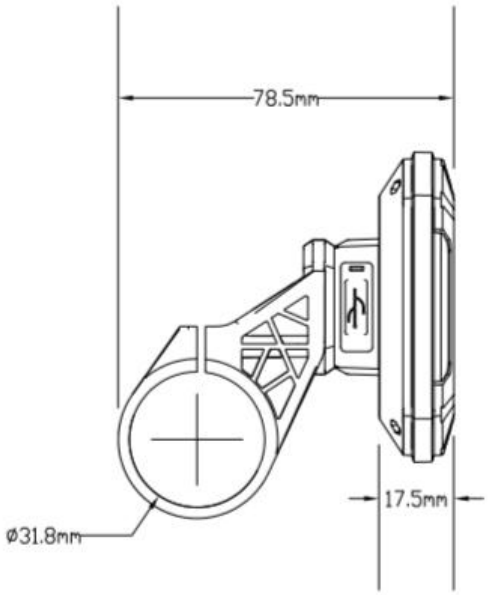


Figure 3-4 91F-E Side View Dimension

4. Function overview and Functional areas

4.1 Functional overview

The YL91F-E display offers a variety of features to suit your riding needs, including:

- Battery level indicator
- Pedal assist (PAS) level indicator
- Speed (current speed, maximum speed, average speed)
- Mileage display (single and total mileage)
- Light ON/OFF
- Error code indicator
- Cruise control indicator **(optional)**
- Personalized parameter settings (e.g. metric and imperial, speed limit, etc.)
- Factory default parameter recovery function

4.2 Functional areas

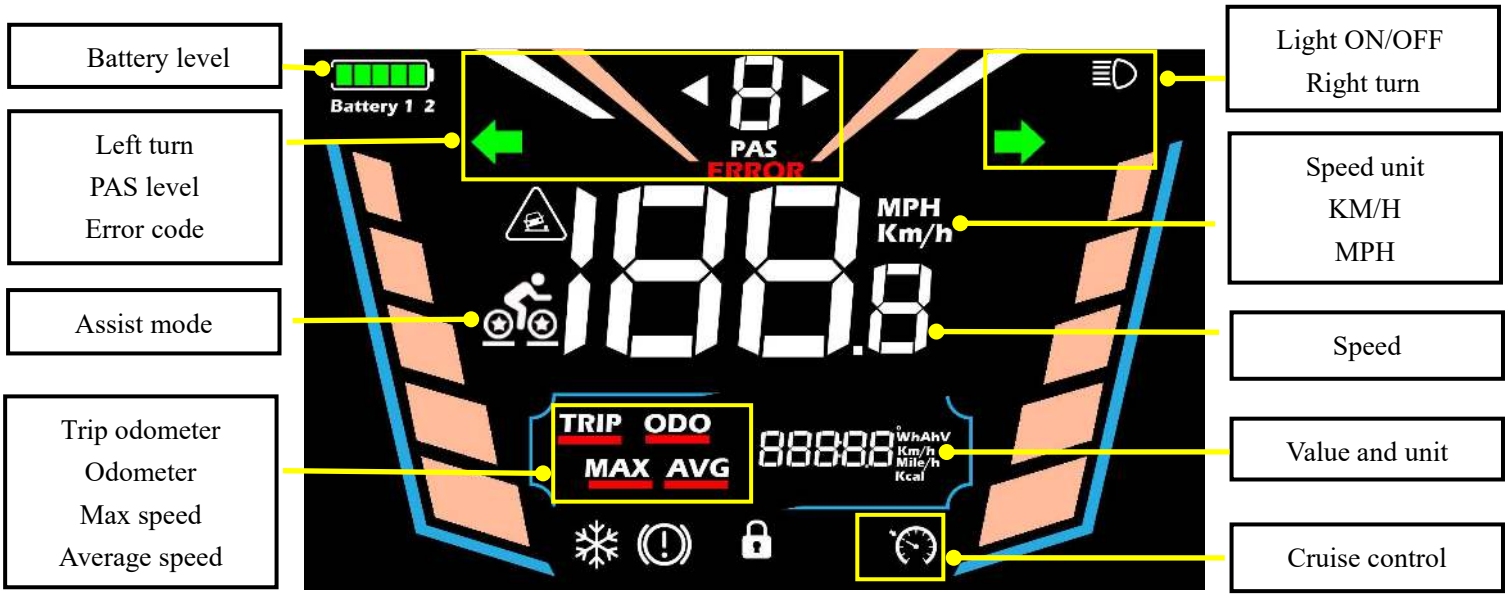


Figure 4-1 YL91F-E functional area distribution interface

4.3 Button definitions

The YL91F-E display is equipped with seven buttons on the corresponding operating unit: power on/off , plus (reuse with light), minus , left turn , right turn , toggle and horn .

5. Routine operation

5.1 Power on/off

Long press to power on/off the display. When the display is off, it will not use the battery power and the leakage current is less than 1uA.

⚠**The display will automatically shut off if it is not used for more than 10 minutes.**

5.2 Display interface switching

When the display is powered on, it will show the Current Speed (mile/h) and Trip Odometer (mile) by default. Short press M to switched cyclically between Trip Odometer (mile), Odometer(mile), Maximum Speed (mile/h), Average Speed (mile/h),Voltage(V), and Current(A).

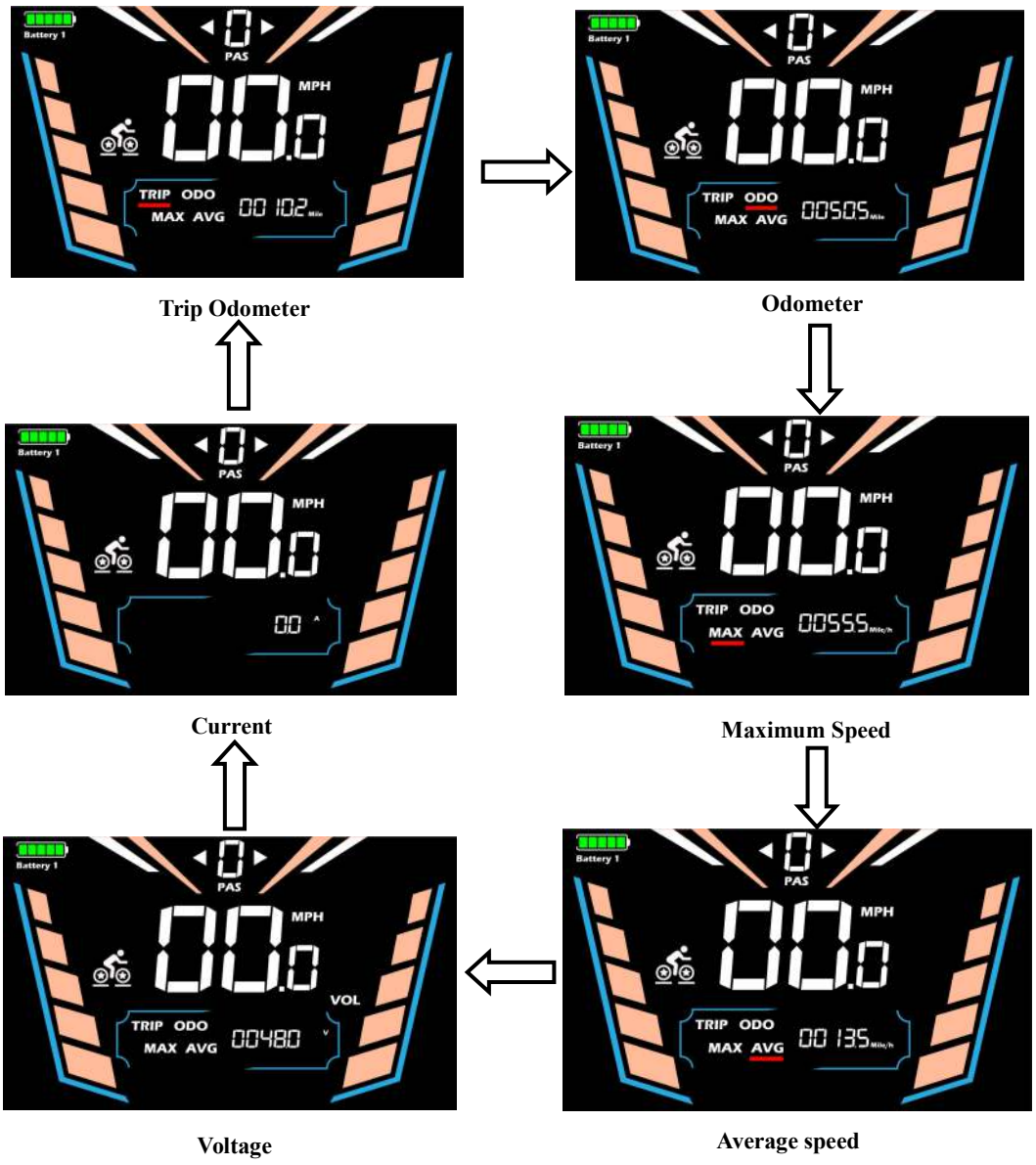


Figure 5-1 Display interface switching

5.3 Reverse function

Long press and hold , the electric bicycle enters reverse mode. The display gear value shows R.Simultaneously, the left and right turn icons flashing prompt. Release to exit the reverse mode of the electric bicycle.

Figure 5-2 Reverse function display interface

5.4 Turning on/off lights

Long press to make the controller turn on the lights and the display backlight becomes dim. Long press again to make the controller turn off the lights and the backlight restore brightness.

Figure 5-3 Backlight display interface

5.5 PAS level selection

Press / to switch PAS level of electric bicycle, thus changing the motor output power.(The following pictures are only for illustration of different speeds in different gears. The specific speed is subject to the actual product)

0 gear is the parking gear, the vehicle has no movement, and cannot slide; 1st gear is energy-saving mode, single rear wheel drive. When in single rear wheel drive mode, the "wheel circle+star" on the rear wheel flashes as a prompt; 2nd gear is the regular gear, dual drive. When in 2nd gear, the "front and rear wheels+star" flashing prompt is displayed; 3rd gear is sport mode, dual drive. When in 3rd gear, the "front and rear wheels+asterisk+horizontal line" flashing prompt.

Figure 5-4 PAS level display interface

5.6 Turn left/right on/off

Press the to activate left turn, then press again to deactivate left turn; Press to activate right turn, then press again to deactivate right turn. (When the steering function is turned on and the speed is greater than 6.5km/h, the rollover warning icon will light up)

Figure 5-5 Turn on the left turn display interface

Figure 5-6 Turn on the right turn display interface

5.7 Turn on/off dual flashing

Press to turn on dual flashing, then press again to turn off dual flashing. (When the dual flash function is enabled and the speed is greater than 6.5km/h, the rollover warning icon will light up)

Figure 5-7 Enable dual flash interface

5.8 Turn on/off the horn

Press to turn on the horn; then press again to turn off the horn.

5.9 Battery level display

The Battery level is shown as 5 bars. When the battery is full charged, all of the 5 bars lighten up. When the battery is fully depleted, the bar will begin to flash, warning the user to charge the battery as soon as possible.

Full power **Four bars power** **Three bars power** **Two bars power** **One bar power**

Empty power flashing

Figure 5-8 Battery level display interface

5.10 Error code display

If there is a fault occurs in the electronic system of the electric bicycle, the display will automatically show an error code, see **Schedule 1** for a detailed definition of the error code.

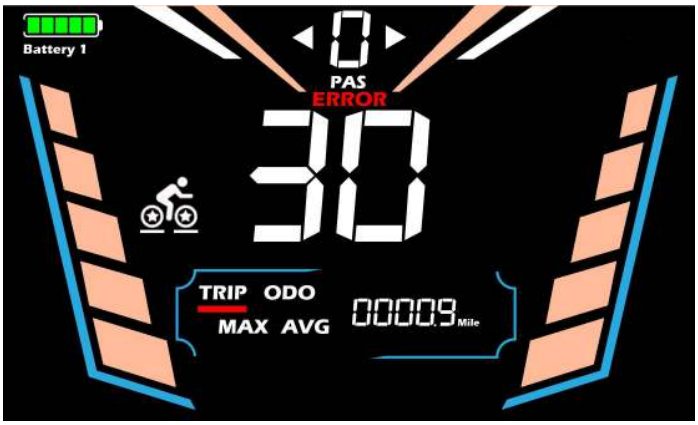


Figure 5-9 Error code display

⚠**When the error code appears on the display, please troubleshoot the problem in time, the electric bicycle will not be able to drive normally after the problem occurs.**

6. Personalized parameter settings

⚠**Each setting needs to be done with the bicycle stationary.**

The personalized parameter setting procedure is as follows:

When the display is ON and the speed shows 0,

(1) Press and hold + − simultaneously for more than 2 seconds to enter the personalized parameter setting interface.

(2) Press + / − to toggle between the personalized parameter setting interface, and press M to enter the parameter changing state.

(3) Press + / − to select the parameter, long press + for addition operation, long press − for subtraction operation.

(4) Press M to save the parameter settings and return to the personalized parameter setting interface.

(5) Long press M to save the parameter settings and exit the personalized parameter setting interface.

The following options are available on the personalized parameter setting interface:

6.1 Metric and Imperial setting

01P is the metric and imperial setting, 00 for metric and 01 for imperial.

Press M to enter the parameter changing state. Press the +/ - to select the parameter and press M to save the parameter setting and return to the personalized parameter setting interface.

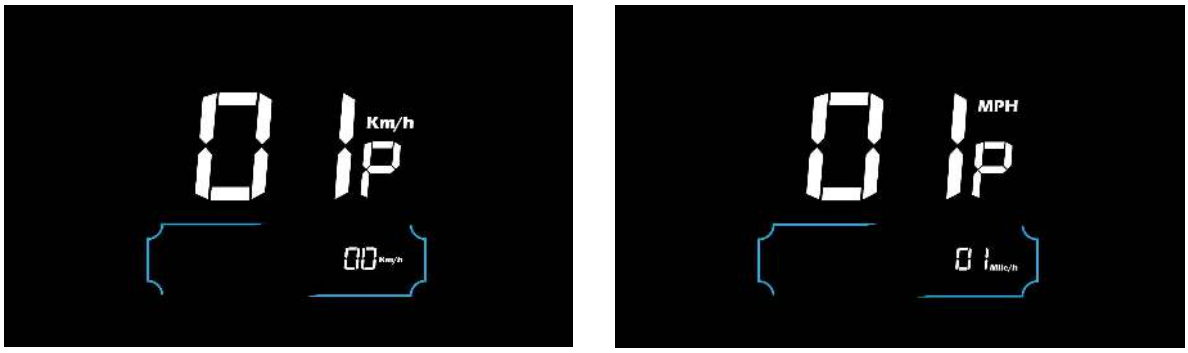


Figure 6-1 Metric and Imperial units setting interface

6.2 PAS level setting

02P is the Pedal assist (PAS) level setting. (Can only be viewed but not adjusted)

Press M to enter the parameter viewing state. Press M to return to the personalized parameter setting interface.

Figure 6-2 PAS level setting interface

6.3 Pedal assist sensitivity setting

03P is the pedal assist sensitivity setting. When set to higher numbers, it will take more crank rotations to activate the motor. On lower numbers, it will take little crank rotation to activate the motor. The adjustable range is: 2~9，2 is the highest level sensitivity while 9 is the lowest.

Press M to enter the parameter changing state. Press the +/ - to select the parameter and press M to save the parameter setting and return to the personalized parameter setting interface.

Figure 6-3 Pedal assist sensitivity setting interface

6.4 Throttle level setting

04P is the throttle level setting. 00 is to disable the throttle level. 01 is to enable the throttle level. If you select 01, it means that when the steering angle is turned to the maximum, the bicycle speed can only reach the maximum speed that can be reached by the current display of the throttle level; If 00 is selected, it means that when turning the throttle, it is not limited by the throttle level displayed on the display and can reach the rated maximum speed.

Press M to enter the parameter changing state. Press the + / − to select the parameter and press M to save the parameter setting and return to the personalized parameter setting interface.

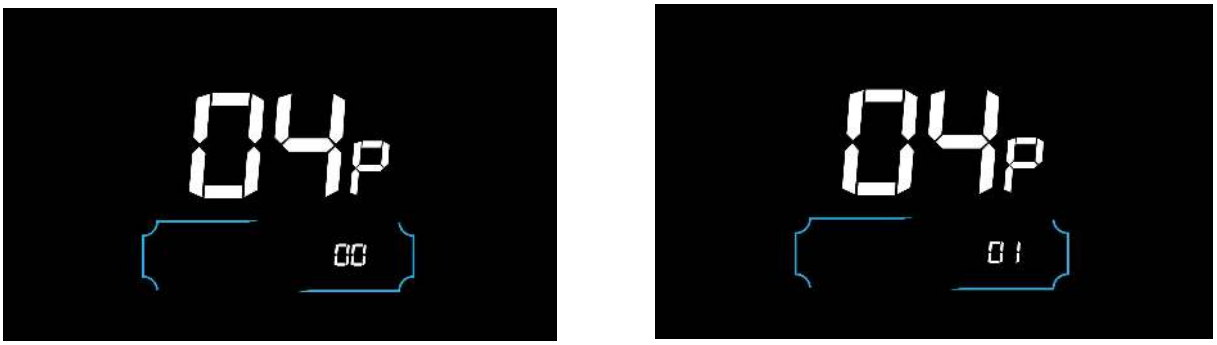


Figure 6-4 Throttle level setting

6.5 Power-on password setting

05P is the power-on password setting. The power-on password is not activated by default but users can activate it from setting PSd-y. The factory default password is 1212. **Users can set other four-digit password. ⚠ Please keep the password in mind after changing it, otherwise you will not be able to use the display.**

Press M to enter the parameter changing state. Press the + / − to select the parameter. PSd-y means the power-on password is activated while PSd-n is off. Press M to confirm the mode and enter the state of setting the four digits power-on password or exit to the personalized parameter setting interface.

Figure 6-5 Power-on password off interface

Figure 6-6 Power-on password activated interface

In the password setting mode, the adjustable digit will flash. Press the + / − to select the parameter and press M to save the numbers and go to the next digit setting. Press M to save the parameter setting and return to the personalized parameter setting interface after finish setting the four digits in turn.

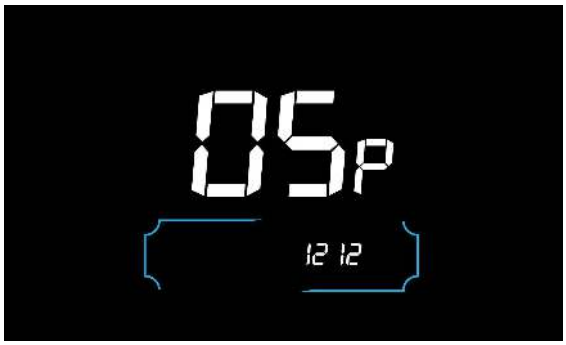


Figure 6-7 Power-on password setting interface

6.6 Auto sleep time setting

06P is the auto sleep time setting. To save the battery power and reach higher range, this display will be turned off after it has not been used for a time. The adjustable range is: 00~60min, 00 means no auto shutdown. The factory default setting is 10 minutes.

Press M to enter the parameter changing state. Press the +/ − to select the parameter and press M to save the parameter setting and return to the personalized parameter setting interface.

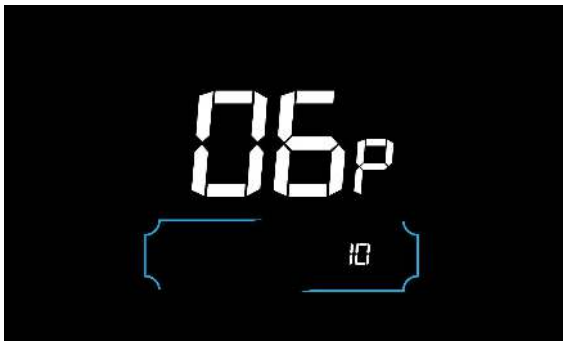


Figure 6-8 Auto sleep time setting interface

6.7 Assist in slow start parameter setting

07P is the assist in slow start parameter setting. The assist in slow start is the relative strength of the PWM signal from the controller when start to activate pedal assist. The adjustable range is 0~3. 0 is the weakest strength and 3 is the strongest.

Press M to enter the parameter changing state. Press the +/ − to select the parameter and press M to save the parameter setting and return to the personalized parameter setting interface.

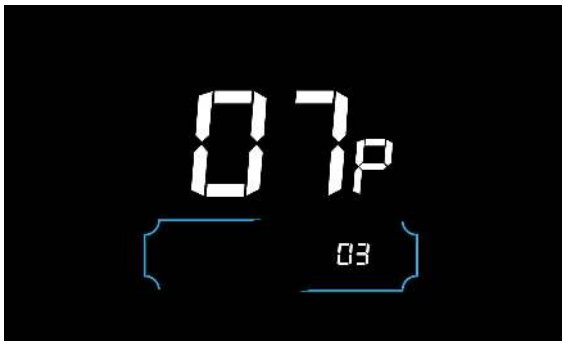


Figure 6-9 Assist in slow start parameter setting interface

6.8 Speed limit setting

In the personalized parameter setting interface, press and hold + − simultaneously for more than 2 seconds to enter speed limit adjustment mode. The adjustable range : SP-N has a maximum speed limit (usually show as 25km/h), SP-S has no maximum speed limit (usually show as 56km/h), and is in the SP-N state at the factory. (The maximum adjustable speed limit varies by different protocols).

Press M to enter the parameter changing state. Press the +/ − to select the parameter and press M to save the parameter setting and return to the personalized parameter setting interface.

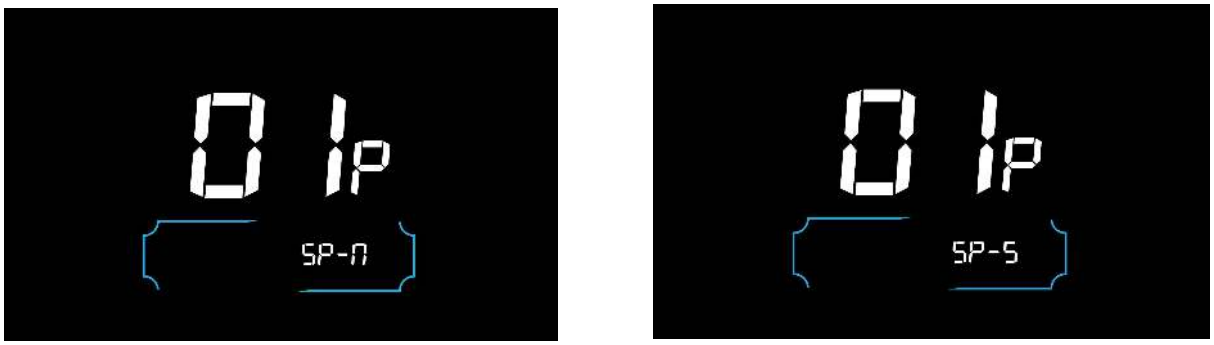


Figure 6-10 Speed limit setting interface

7. Shortcut operation

7.1 Restore factory default parameter settings operation

dEF is the restore factory default parameter settings. dEF-Y is to restore the factory default settings, and dEF-N is not to restore.

Enter into the main setting interface and keep the speed at 0, press and hold and simultaneously for 2s to enter the restore factory default setting interface. Pressing / to toggle to dEF-Y. Then after pressing to confirm, the display will show dEF-0 for a few seconds and then automatically start to restore the factory default settings. The display will automatically exit to setting interface after the restoration.

Figure 7-1 Restore factory default parameter settings interface

7.2 Odometer reset operation

The display can record trip odometer and odometer, and the odometer cannot be reset. Trip odometer is not automatically reset after turning off. You need to manually reset it.

The trip odometer reset procedure is as follows：

Enter into the main setting interface and keep the speed at 0, press and hold and simultaneously for 2s to reset the trip odometer. The main interface will flash during the reset process.

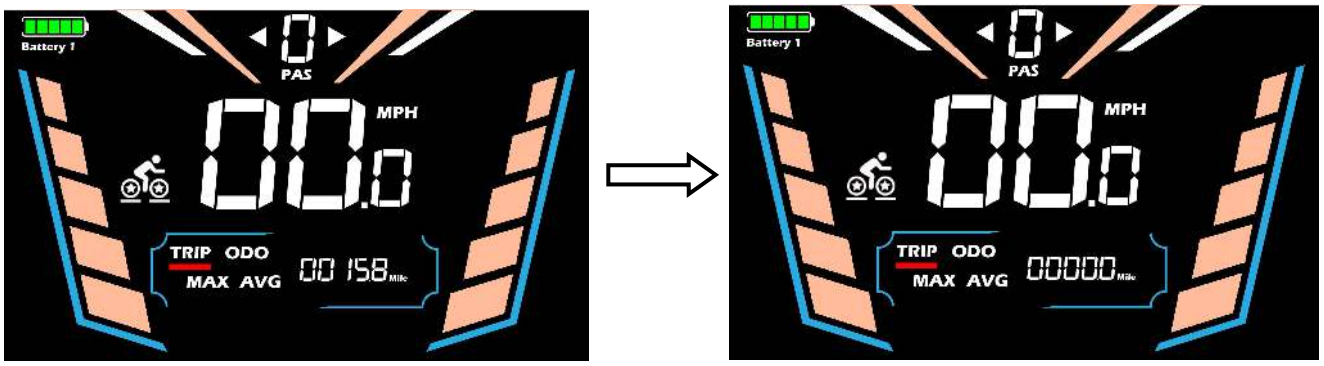


Figure 7-2 Trip odometer reset interface

8. Quality Assurance and Warranty

8.1 Warranty info

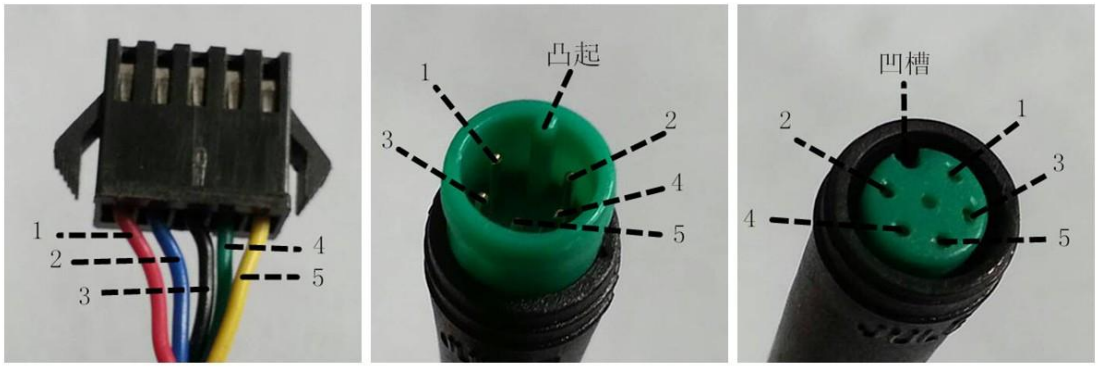
- Yolin will offer a limited warranty for any failure caused by the product defects under normal use during the warranty period.
- The product is warranted for 12 months from the date out of factory.

8.2 Warranty does not cover

- The shell is opened.
- The connector is damaged.
- Scratches on the appearance after the product is out of factory.
- Scratched or broken wires
- Failure or damage caused by force majeure (e.g. fire, earthquake, etc.) or natural disaster (e.g. lightning strike, etc.)
- Out of warranty period.

9. Wire connection diagram

9.1 Standard wire connection sequence



Controller connector **Display connector (Female terminal)** **Display connector (Male terminal)**

Figure 9-1 Wire Connection Diagram

Table 9-1 Standard connector wire sequence table

Standard Wire Sequence	Standard wire color	Function
1	Red (VCC)	Display power wire
2	Blue (Kp)	Controller power wire
3	Black (GND)	Display ground wire
4	Green (RX)	Display data reception wire
5	Yellow (TX)	Display data transmit wire

■ **Some models are equipped with waterproof connectors and the color inside wires can not be seen.**

10. Precautions

Pay attention to all the general operating when using the products and do not plug and unplug the display while it is powered on.

- ◆ Avoid bumping the display as much as possible.
- ◆ Please do not change the parameter settings at will, otherwise normal riding cannot be guaranteed.
- ◆ If display does not work properly, please send it to the repair center as soon as possible.
- ◆ There may be differences between the physical products and this manual due to normal upgrade. Please refer to the physical products.

Schedule 1: Error Code Definition

YL-05 Error codes:				
Error code	Definition		Error code	Definition
E021	Current failure		E024	Hall failure
E022	Throttle failure		E025	Brake failure
E023	Motor phase failure		E030	Communication failure

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