

***Yolin***

**Electric Bike Display**

# **User's Manual**

**YL91F-V**

**Tianjin Yolin Technology Co. Ltd.**

## TABLE OF CONTENTS

1. PRODUCT NAME AND MODEL NUMBER .....	1
2. SPECIFICATION .....	1
3. APPEARANCE AND SIZE .....	1
4. FUNCTION OVERVIEW AND FUNCTIONAL AREAS .....	3
4.1 FUNCTIONAL OVERVIEW .....	3
4.2 FUNCTIONAL AREAS .....	3
4.3 BUTTON DEFINITIONS .....	3
5. ROUTINE OPERATION .....	3
5.1 POWER ON/OFF .....	3
5.2 DISPLAY INTERFACE SWITCHING .....	4
5.3 WALK BOOST MODE .....	5
5.4 TURNING ON/OFF LIGHTS .....	5
5.5 PAS LEVEL SELECTION .....	5
5.6 BATTERY LEVEL DISPLAY .....	6
5.7 ERROR CODE DISPLAY .....	6
6. PERSONALIZED PARAMETER SETTINGS .....	6
6.1 METRIC AND IMPERIAL SETTING .....	7
6.2 RATED VOLTAGE SETTING .....	7
6.3 PAS LEVEL SETTING .....	8
6.4 WHEEL DIAMETER SETTING .....	8
6.5 NUMBER OF SPEED SENSOR MAGNETS SETTING .....	9
6.6 SPEED LIMIT SETTING .....	9
6.7 START-UP SETTING .....	ERROR! BOOKMARK NOT DEFINED.
6.8 DRIVE MODE SETTING .....	8
6.9 PEDAL ASSIST SENSITIVITY SETTING .....	ERROR! BOOKMARK NOT DEFINED.
6.10 PEDAL ASSIST STRENGTH SETTING .....	ERROR! BOOKMARK NOT DEFINED.
6.11 NUMBER OF PEDAL ASSIST SENSOR MAGNETS SETTING .....	ERROR! BOOKMARK NOT DEFINED.
6.12 CONTROLLER CURRENT LIMIT SETTING .....	ERROR! BOOKMARK NOT DEFINED.
6.13 BATTERY UNDER VOLTAGE VALUE SETTING .....	ERROR! BOOKMARK NOT DEFINED.
6.14 POWER-ON PASSWORD SETTING .....	ERROR! BOOKMARK NOT DEFINED.
6.15 AUTO SLEEP TIME SETTING .....	ERROR! BOOKMARK NOT DEFINED.
7. SHORTCUT OPERATION .....	9
7.1 SHORTCUT OPERATION .....	ERROR! BOOKMARK NOT DEFINED.
7.2 TRIP ODOMETER RESET OPERATION .....	ERROR! BOOKMARK NOT DEFINED.
8. QUALITY ASSURANCE AND WARRANTY .....	ERROR! BOOKMARK NOT DEFINED.
8.1 WARRANTY INFO .....	ERROR! BOOKMARK NOT DEFINED.
8.2 WARRANTY DOES NOT COVER .....	ERROR! BOOKMARK NOT DEFINED.

**9. WIRE CONNECTION DIAGRAM** ..... ERROR! BOOKMARK NOT DEFINED.

**9.1 STANDARD WIRE CONNECTION SEQUENCE** ..... ERROR! BOOKMARK NOT DEFINED.

**10. PRECAUTIONS** ..... ERROR! BOOKMARK NOT DEFINED.

**SCHEDULE 1: ERROR CODE DEFINITION** ..... **10**

**SCHEDULE 2: PEDAL ASSIST LEVEL DEFAULT RATIO VALUE** ..... ERROR! BOOKMARK NOT DEFINED.

### 1. Product Name and Model Number

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

### 2. Specification

- 36V/48V/52V power supply
- Display rated current 15mA
- Display maximum current 30mA
- Shutdown leakage current <1uA
- Supplied current to the controller 50mA
- Operating temperature -20~60°C
- Storage temperature -30 to 70° C

### 3. Appearance and Size



Figure 3-1 Physical picture of the YL91F-V display



Figure 3-2 Physical picture of the K5 control button



Figure 3-3 Physical picture of the K6 control button

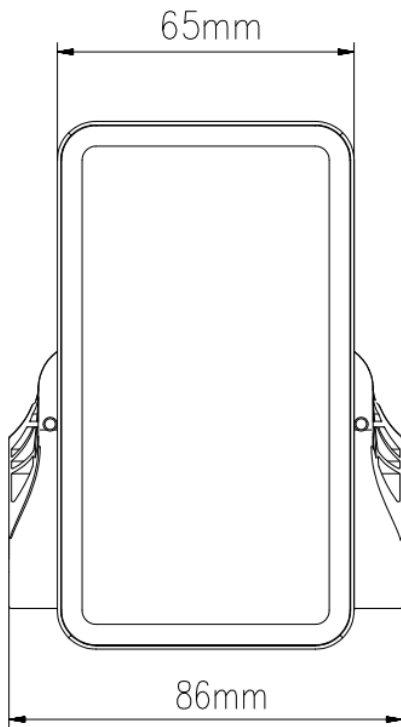


Figure 3-4 91F-V Front View Dimension

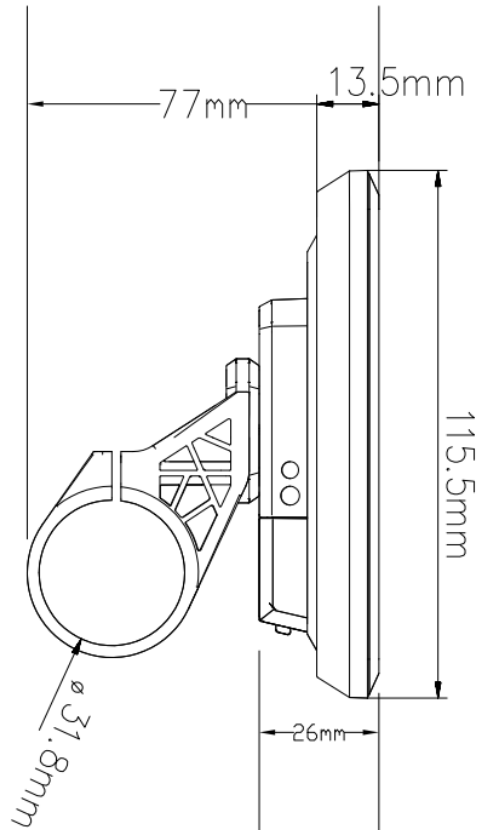


Figure 3-5 91F-V Side View Dimension

## 4. Function overview and Functional areas

### 4.1 Functional overview

The YL91F-V 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)
- Walk boost mode
- Light ON/OFF
- Error code indicator
- Motor power indicator (optional)
- USB connection indicator (optional)
- Cruise control indicator (optional)
- Bluetooth connection indicator (optional)
- Personalized parameter settings (e.g. wheel diameter, speed limit, battery power setting and PAS parameter setting, password setting, controller current limit setting, etc.).
- Factory default parameter recovery function

### 4.2 Functional areas

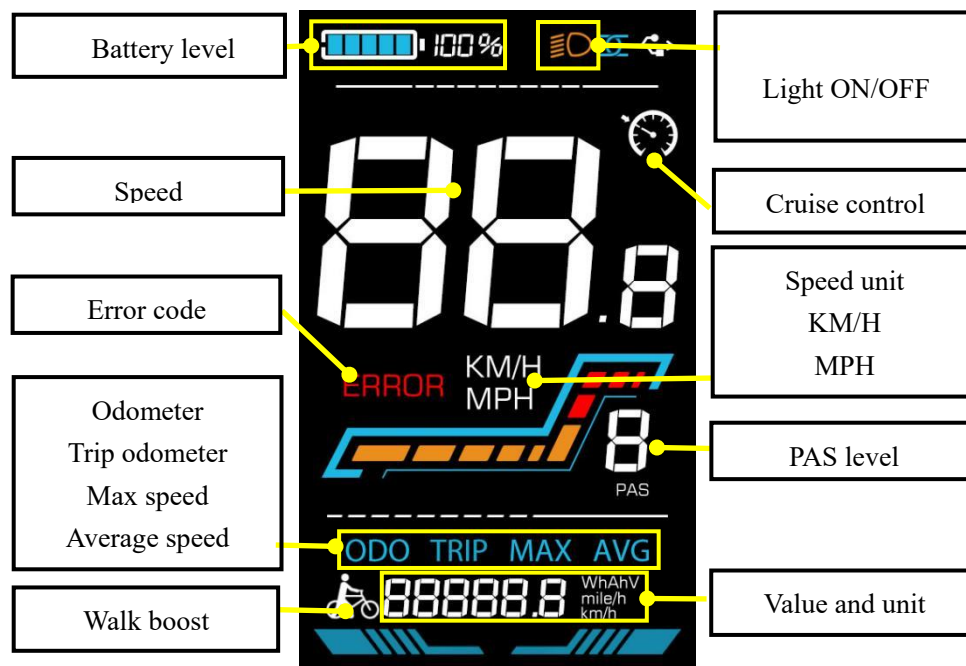








Figure 4-1 YL91F-V functional area distribution interface

### 4.3 Button definitions

The YL91F-V display is equipped with five buttons on the corresponding operating unit: power on/off , plus , minus , light  and toggle .

## 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 (km/h) and Odometer (km) by default. Short press

**i** to switch between Odometer (km), Trip Odometer(km), Maximum Speed (km/h), and Average Speed (km/h).

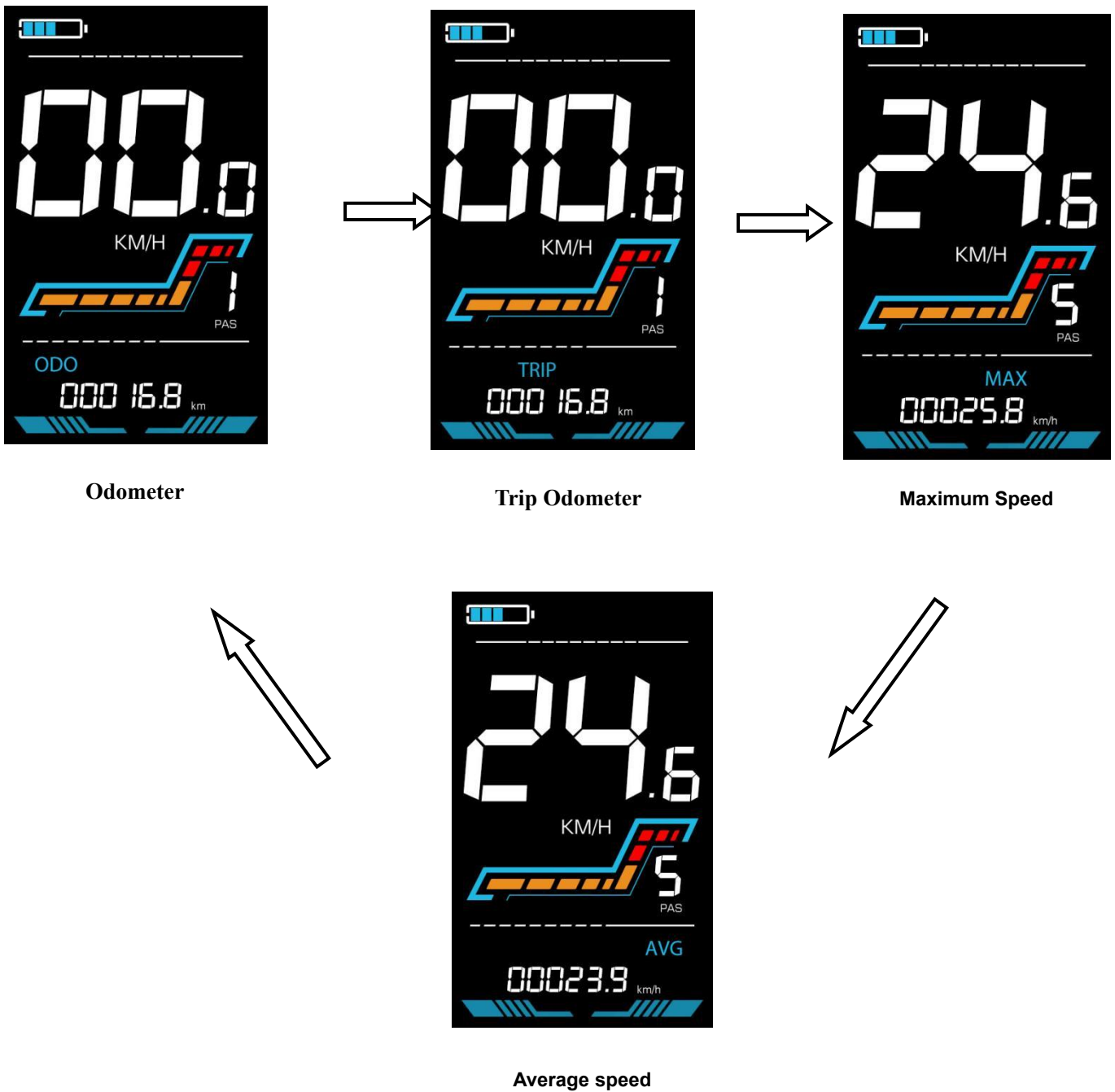


Figure 5-1 Display Interface Switching

### 5.3 Walk boost mode



Long Press and hold  the electric bicycle enters the walk boost mode. The electric bicycle will walk at a fixed speed of 6 km per hour and the display shows . Release the button to stop the power output immediately and restore to the state before walk boost.



Figure 5-2 Helping to implement the display screen

**⚠** The walk boost mode can only be used when pushing the electric bicycle, please do not use it while riding.

### 5.4 Turning on/off lights



Press the  to make the controller turn on the lights and the display backlight becomes dim. 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.

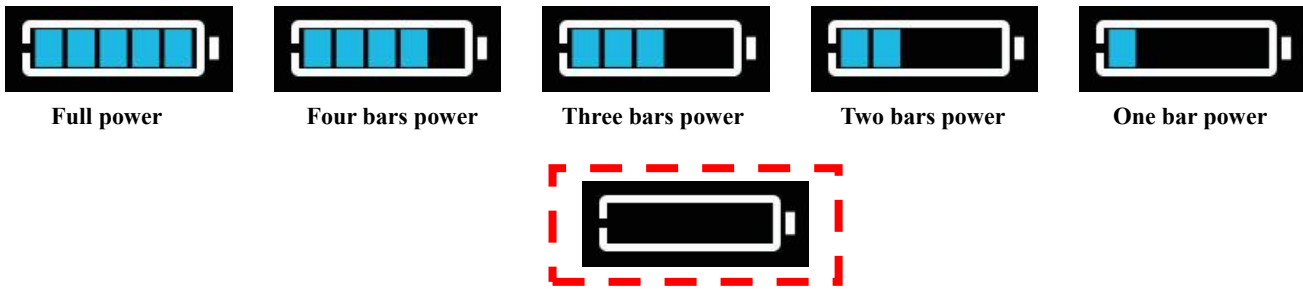




Figure 5-4 PAS level display interface

**5.6 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.



Empty power flashing  
Figure 5-5 Battery Level Display Interface

**5.7 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 5-6 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 **i** to enter the parameter changing state.

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

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

(5) Long Press **i** 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

P1 is the metric and imperial setting, 00 for metric and 01 for imperial.

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

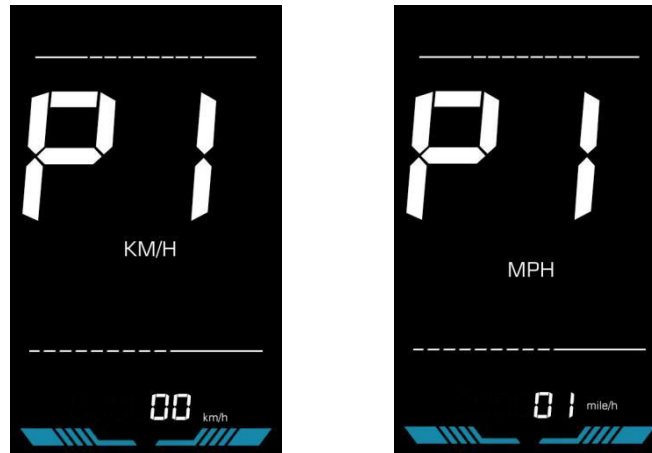


Figure 6-1 Metric and Imperial Units Setting Interface

### 6.2 Speed Limit Setting

P6 is the speed limit setting. The adjustable speed limit range is: 1~100km/h. (The maximum adjustable speed limit varies by different protocols)

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



Figure 6-2 Speed limit setting interface

### 6.3 Drive mode setting

P8 is the drive mode setting. The available drive modes are: 00→Pedal assist only, 01→Electric only, 02→Both Pedal assist and electric.

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



Figure 6-3 Drive mode setting interface

## 7. Shortcut operation

### 7.1 Restore factory 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 Settings Interface

### 7.2 Trip odometer reset operation

The display can record trip odometer and odometer. Trip odometer is not automatically reset after turning off. The trip odometer needs to be reset manually. The odometer can not be reset.

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.

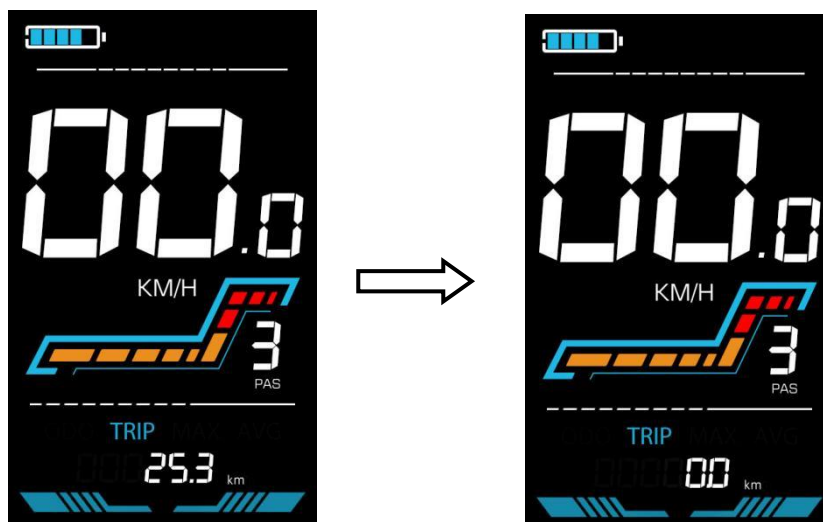


Figure 7-2 Trip Odometer Reset Interface

**Schedule 1: Error Code Definition**

YL-01, YL-02 Error codes				
Error code	Definition		Error code	Definition
E001	Controller failure		E004	Throttle failure
E002	Communication failure		E005	Brake failure
E003	Hall failure		E006	Motor phase failure
YL-05, KDS, YL-J 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