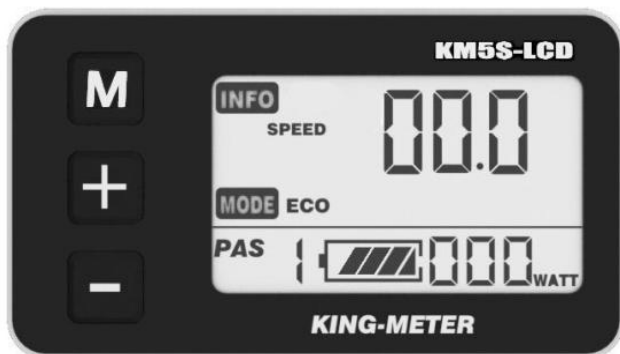


# **KING-METER**

## **USERS GUIDE**

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### **KM5S-LCD**



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English P32-64

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## **About the User Manual**

Dear users,

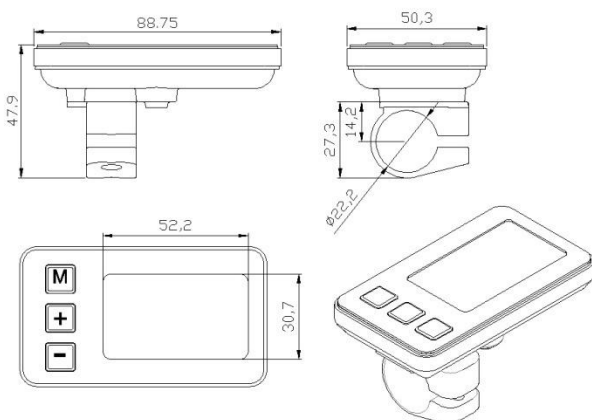
To ensure better performance of your e-bike, please read through the KM5S product introduction carefully before using. We will use the most concise words to inform you of all the details (including the hardware installation, setting and normal operation use of the display) when using our display. Meanwhile, the introduction will also help you to solve the possible confusion and malfunctions.

## Appearance and Size

### Material and Color

KM5S products are made of PC. Under the temperature of  $-20$  to  $60^{\circ}\text{C}$ , the shell material can ensure normal usage and good mechanical performance.

Real product and dimension figure (unit: mm)



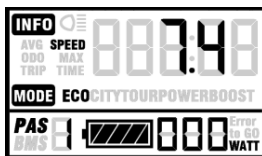
## Function Summary and Button Definition

### Function Summary

KM5S provides a wide range of functions and indicators to fit the users' needs. The indicated contents are as following.







- ◆ Battery Indicator
- ◆ Motor Power Ratio
- ◆ Speed Display (including running speed, max speed and average speed)
- ◆ Trip distance and total distance
- ◆ Trip time display of single
- ◆ Cruise control
- ◆ Headlight On/Off
- ◆ Error Code Indicator
- ◆ Various Parameters Setting (like wheel size, speed -limited, battery level bar, PAS level, controller limited current, max speed, password enable, and so on.)
- ◆ Recover Default Setting

### Monitor Area



Monitor Area

## Button Definition

KM5S has three buttons. They are   . In the following introduction,  is named as “**MODE**”.  is named as “**UP**” and  is named as “**DOWN**”.

## Operation Cautions

Be care of the safety use. Don't attempt to release the connector when battery is on power.



Try to avoid hitting.



Don't split the waterproof sticker to avoid affecting the waterproof performance.



Don't modify system parameters to avoid parameters disorder.



Make the display repaired when error code appears.



## Installation Instruction

Fix the display onto the handlebar and adjust to an appropriate visual angle. Tighten all the connectors.

## Normal Operation

### Power On/Off

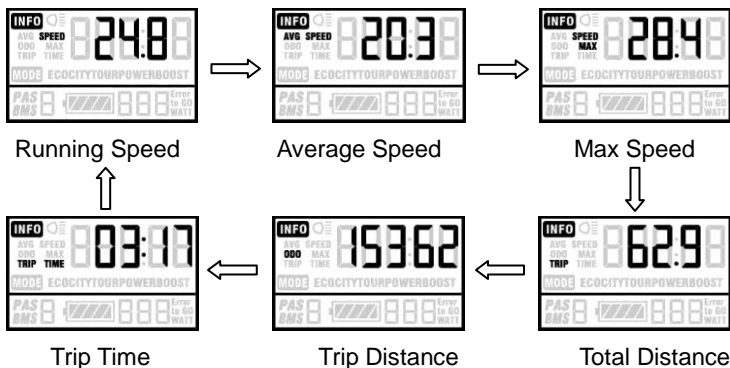
Hold **Mode** button for 2 seconds then the display will power on, and the display will the power on the controller. With display on, hold **MODE** to turn off power supply of the e-bike. With the display off, the display and controller shut down. The leakage current is less than 1 uA.



**When parking e-bike for more than 10 minutes, the display shut down automatically.**

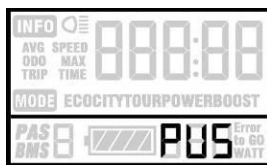
### Display Interface

After starting up the display, default show is running speed. Press MODE to change the indicated information in sequence as below: Running Speed (Km/h) → Average Speed (Km/h) → Max Speed (Km/h) → Trip Distance (km) → Total Distance (km) → Travel Time → Running Speed (Km/h).



## Push Cruise Control

Hold **DOWN** for 2 seconds to enter the mode of power assistant walk. The e-bike will go on at a uniform speed of 6 Km/h. PUS shows on the screen.



Push Cruise Control



**“Push Cruise Control” function can only be used as pushing the e-bike by hands. Please don’t use this function when riding.**

## Turn on/off Backlight

Hold **UP** 2 seconds to turn on the backlight of the display, the headlight will be power on at the same time. Hold **UP** for 2 seconds again, backlight turned off.



Turn On/Off Backlight

## PAS Level Selection

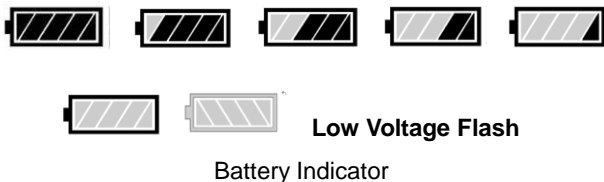
Hold **UP** or **DOWN** to change the output power of the motor. The power ranges from level 1 to level 5. Level 1 is the minimum power. Level 5 is the maximum power. The default value is level 1.



PAS Level

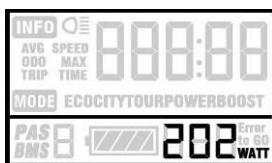
## Battery Indicator

The 5 battery bars represent the capacity of the battery. When the battery is in low voltage, battery frame will flash to notice that the battery needs to be recharged immediately.



## Motor Power Monitor

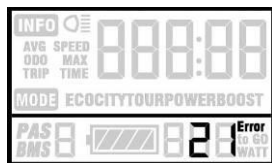
Motor power showed as below:



Motor Output Power

## Error Code Information

If there is something wrong with the electronic control system, the error code will appear automatically. Here is the detail information of the error code in Table 1 attached.



Error Code



**Make the display repaired when error code appears.**

## User Setting

### Preparation before Starting

Make sure all connectors tightened and the cables without damage.

### General Setting

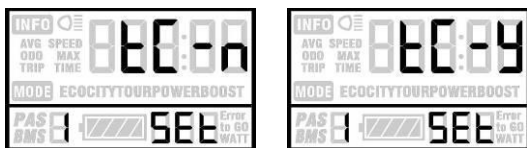
Press **MODE** button to start the display, then hold both **UP** and **DOWN** for 2 seconds to enter the setting menu.

#### *Trip Distance and Trip Time Clearance*

TC means trip distance clearance. Press **UP** or **DOWN** to choose yes or no to clear the trip distance.



**Trip distance and trip time will be cleared at the same time.**

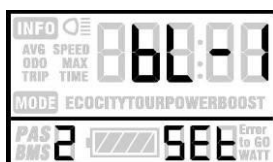


Trip Distance Clearance

## Backlight Contrast

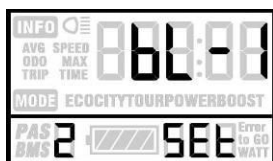
BL means backlight. Level 1 is the low brightness. Level 2 is the middle brightness. Level 3 is high brightness. The default level is 1. Bottom of the screen prompts SET2.

Press **UP** or **DOWN** to modify the backlight brightness. Hold **MODE** to confirm the modification and exit the general setting.



Backlight Brightness

Pressing **UP** and **DOWN** can change the backlight lighting. Long press **MODE** is to confirm and quit Setting Mode.



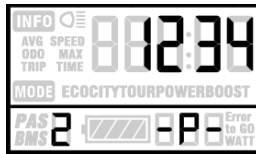
Backlight setting Interface

## Power-on Password Enable/Disable

The character “-P-” on the bottom of the screen means the page of password. Hold **UP** and **DOWN** both up to 2 seconds enter normal setting , while hold both **UP** and

**MODE** 2 seconds again will enter power-on password enable/disable page.

Press **UP/DOWN** to change the number .Press **MODE** to select digit one by one. After 4-digite of the correct password entered, press **MODE** to confirm then select password enable or disable.



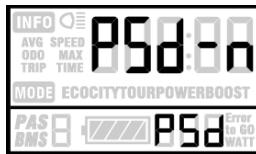
Password Entering Page

### ***Power-on Password Enable***

Press **UP/DOWN** to select **Y** or **N**, and press **MODE** to confirm. Power-on Password default disable.

**y** = Power-on Password Enable

**n** = Power-on Password Disable



Password Disable Page

## Power-on Password Modify

**UP** and **DOWN** is to change the number, and **MODE** is to select digit one by one, finally to hold **MODE** to confirm the modification.



Password Modify Page

## Normal Parameter Setting

Hold both **UP** and **DOWN** for 2 seconds to enter User setting .But hold both **DOWN** and **MODE** over 2 seconds is to enter password 0512 to modify the wheel size.

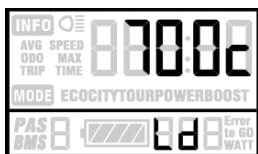


Password Inputting Page

## Wheel Diameter Setting



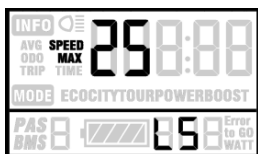
Press **UP** and **DOWN** to select the correct value to match the wheel diameter. Selectable values include: 16, 18, 20, 22, 24, 26, 700C, 28, 29. Default diameter is 26 inch. Ld means Wheel Diameter.



Wheel Diameter Setting Page

### ***Speed-limit Setting***

When the running speed is faster than MAX SPEED, the controller will cut off the motor power. MAX SPEED default setting is 25Km/h. LS means Limit Speed 12Km/h to 40Km/h is selectable. Press **UP/DOWN** to select the favorite value, then hold **MODE** over 2 seconds to confirm and quit the setting mode.



Limit Speed Setting Page

## Personalized Parameter Setting

Personalized Parameter Setting can match variety requirements in use. Settings items are : Battery Power Bar Setting, Pedal assistant level Setting, Over-current Cut , Pedal Assistant Sensor Setting, Speed Sensor Setting and Delay Time Setting. For the details, please see the **Attached List 2**.

## System Parameter Setting

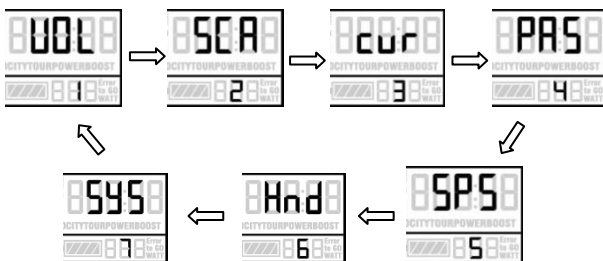
Hold **UP** and **DOWN** both over 2 seconds to enter normal setting, while hold **UP** and **DOWN** both again is to set up System Parameter, password 2962 must be entered.

**MODE** is to confirm and enter System Parameter Setting page, you can select the option which you want.



System Parameter Password Input

Press **UP/DOWN** to select, and press **MODE** to enter the corresponding setting page.



Option Select Page

## Battery Power Bar Setting

Each bar represents a voltage value. 5 voltage values **MUST BE** entered one by one.

Press **MODE** to confirm and **UP/DOWN** to select the value.

**VOL** = voltage

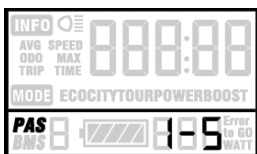


Battery Power Bar Setting

## Pedal Assistant Level Setting

### *Pedal Assistant Level Select*

In Pedal Assistant Level Setting , there are 8 modes to select : 0-3, 1-3, 0-5, 1-5, 0-7, 1-7, 0-9, 1-9. Press **UP/DOWN** to select the mode, and press **MODE** to confirm, then change the ratio of each PAS level.



PAS Mode Select Page

- 0-3 or 1-3: **PAS1** also shows ECO, **PAS2** also shows TOUR,  
**PAS3** also shows BOOST.
- 0-5 or 1-5: **PAS1** also shows ECO, **PAS2** also shows CITY,  
**PAS3** also shows TOUR, **PAS4** also shows POWER,  
**PAS5** also shows BOOST.
- 0-7 or 1-7: **PAS1** also shows ECO, **PAS2** also shows ECO,  
**PAS3** also shows CITY, **PAS4** also shows CITY,  
**PAS5** also shows TOUR, **PAS6** also shows POWER,  
**PAS7** also shows BOOST.
- 0-9 or 1-9: **PAS1** or **2** also shows ECO, **PAS3** or **4** also shows CITY,  
**PAS5** or **6** also shows TOUR, **PAS7** or **8** also shows  
POWER,  
**PAS9** also shows BOOST.

## PAS Ratio Modify

To modify the value of PAS ratio will meet the different requirements.

Take the 1 level for example, “45-55 percent” is the range value, bottom value can be modified, and the default is 50 percent. **MODE** is used to confirm and turn to the next PAS ratio setting. After all PAS ratio inputted, please hold **MODE** over 2 seconds to confirm the modification and turn to controller Over-current Cut setting (**MODE** back to pedal assistant level select page). For the details, please see **Attached List 4**.



PAS Ratio Page

## Controller Over-Current Cut Setting

CUR means current. CUR value can be changed from 7.0A to 22.0A. Press **UP/DOWN** is to change the value of the current, and hold **MODE** to confirm the setting and turn to PAS sensor setting. 15A is the default value of controller over-current cut.



**According to the different controller, the value might not be able to be 22A.**

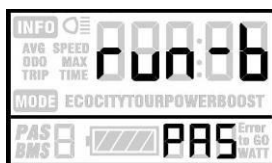
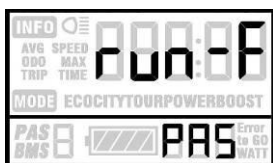


CUR Setting Page

## Pedal Assistant Sensor Setting

### *The Direction of Pedal Assistant Sensor Setting*

PAS means Pedal Assistant System. “run-F” means forward direction, while “run-b” means back direction. Press **UP/DOWN** to select F or b, and press **MODE** to confirm and turn to PAS sensitivity setting. The default direction is forward.



Direction of PAS Sensor Setting

### *The Sensitivity of PAS Setting*

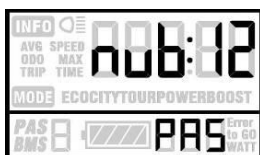
SCN means the sensitivity of PAS, and 2 to 9 can be selected. 2 is strongest, 9 is the weakest. **UP/DOWN** is to select sensitivity value, and **MODE** is to confirm selection and turn to magnet disk setting. SCN default value is 2.



The Sensitivity of PAS Setting

### ***Proportion parameters Setting Of PAS***

N means the proportion parameter of PAS. Press **UP/DOWN** to select the parameter, the more power, the more PAS feeling.



Proportion parameter of PAS

### **Speed Sensor Selection**

SPS means Speed Sensor. Press **UP/DOWN** to select the quantity of magnet head (the range is from 1 to 9), and press **MODE** to confirm and turn to Throttle Definition page. SPS default value is 1.



Speed Sensor Selection

## Throttle Definition

### ***Throttle Enable/Disable***

HL means throttle load, HL:N means function disable ,HL:Y means function enable .

When HL=Y, throttle can control the function. Press **UP/DOWN** to select Y, and press **MODE** to confirm the selection, otherwise select N to turn to Throttle Vector Enable Setting.

HL default value is N.

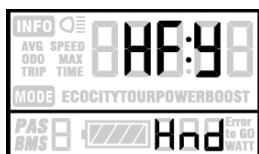


Throttle Enable/Disable Page

### ***Throttle Level Enable/Disable***

HND means throttle. **HF: Y** means throttle vector enable , **HF: N** means throttle vector disable. When **HF=Y**, turn throttle to change the running speed. Press **UP/DOWN** to select Y or N, and hold **MODE** to confirm the selection and quitting. Press **MODE** to confirm and turn to throttle definition page.





Throttle Level Enable/Disable Page

## System Setting

### *Delay time setting of battery power*

DLY means delay time of battery power. Choose delay time 3/6/12s through pressing **UP/DOWN**, then shortly press **MODE**, and enter the max speed limited. The default time is 3s.



Delay time of battery power interface

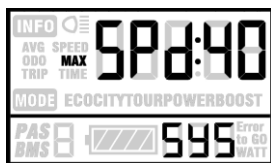
### *Max speed limited*

MAX SPD means max speed limited. Set the max speed when pressing **UP/DOWN** from 25-40 Km/h. Long time to press **MODE**, then exit setting. The default is 40Km/h.



The standard speed limit setting is based on this setting, not more than this setting value.

This setting is the priority version



Interface of max speed limited setting

### ***Button PAS Setting***

PUS means pushing. Press **UP/DOWN** to choose Y/N. Short press MODE, Y means enable, N means disable. Short press MODE to confirm and enter into PAS speed setting. The default value is Y.

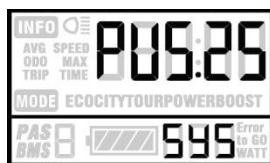


Interface of PAS pushing

### ***PAS Speed Setting***

Through setting PAS to adjust push speed to meet rider's requirements.

The scope is “20%-35%”by pressing **UP/DOWN**, short press **MODE** to enter into slowly start up. Default value is 25%.



Interface of PAS speed setting

### ***Slowly Start up Setting***

SSP means slowly start up. The scope is 1-4, 4 means the slowest. Press **UP/DOWN** to choose. Long press **MODE** to confirm and exit setting. The default value is 1.



Interface of slowly setting up

## Exit setting

In the setting state, short press MODE (less than 2s) is to confirm the input. Long press MODE (more than 2s) is for saving the setting, then quit the setting state. Long press DOWN (more than 2s), is to cancel the operating but not saving setting data.

**If there is not any operating in one minute, display will exit the setting state.**



## Recover default setting

DEF means recover default. Both press **UP+MODE** to enter recover default setting. Pressing **UP**, **DOWN** to convert Y or N. N means do not need to recover default setting; Y means entering into password setting. Otherwise, display will exit. The default state is N.

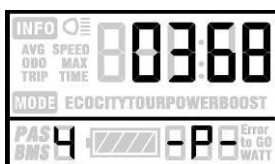


Restore Default Setting Interface

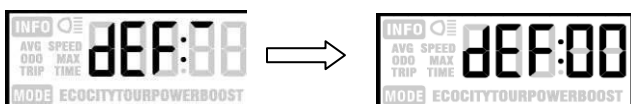
Input password: 0368. Short press **MODE**, **UP/DOWN** can increase or reduce the number. After inputting 4

passwords, short press **MODE** to confirm. The interface is as below. When display showed DEF:00, it means recovering default state, then exiting.

In the recovery default, battery power, ODO and trip cannot be recovered, but starting up password can be recovered.



Input recovery password interface



Start

Complete

Recover default interface

## **FAQ**

Q: Why the display is not able to start up?

A: Check the connector between display and controller.

Q: How to deal with the error code?

A: Fix it to the maintenance place immediately.

## **Barcode**

The barcode is built up as follows:



KM5S=Name

000001=Sequence No.

12=Year of Production

06=Week of Production

3=Battery Voltage

1=sample (0=mass production)

01=hardware version No.

801=software version No.

## **Quality assurance and warranty scope**

### **I 、 Warranty**

- 1、 Any quality problems in normal case and during guarantee period, our company will be responsible for the warranty.
- 2、 The warranty time is 24 months when display out of the factory.

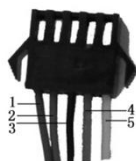
### **II 、 Other items**

The following items do not belong to our warranty scope.

- 1、 It can not be demolished.
- 2、 The damage is caused by wrong installation or operation.
- 3、 Shell is broken when display is out of the factory.
- 4、 Wire is broken.
- 5、 The fault or damage is caused by the force majeure (such as fire, earthquake, etc,) or natural disasters like lightning, etc.
- 6、 Beyond Warranty period.

## Connection layout

### Connector line sequence



Display-side Connector



Display-side adapter



Switch wiring

Line sequence table

Line sequence	Color	Function
1	Red (VCC)	+
2	Blue(K)	Lock
3	Black(GND)	-
4	Green(RX)	RX
5	Yellow(TX)	TX



**Some wire use the water-proof connector, users are not able to see the inside color.**



## **Version changes**

This operating instruction is a general-purpose version (V1.0). Some of the version for the display software will be different from the specification, which should depend on the actual use version.











### Attached list 1: Error code definition

Error Code	Definition
21	Current Abnormality
22	Throttle Abnormality
23	Motor Abnormality
24	Motor Hall Signal Abnormality
25	Brake Abnormality
30	Communication Abnormality

### Attached list 2: Password table

No	OSD	Password	Setting
1		0512	Using parameter setting password(settled)
2		<b>Default</b> 1234	Starting up password
3		2962	Personality setting password(settled)
4		0368	Recovery setting password(settled)

### Attached list 3: Personality Parameter setting

No	Setting	Display	Details
1	Battery power	000	Five battery power value 
2	Assistance	50A	Power assist level option 
			Assistance proportion 
3	Current-limiting	200	Limit current 
4	Power assist sensor	PAS	PAS direction 
			PAS sensitivity 
			PAS magnet No 
5	Speed sensor	SPS	Speed sensor magnet No 
6	Throttle	H80	Throttle-changing 
			Throttle 

**Continue list 3:**

No	Items	Display	Setting
7	System setting	595	Time of battery power delay 804:33
			Max speed 598.40

**Attached list 4: Power assist table**

Level Level Item	1	2	3	4	5	6	7	8	9
0-3/ 1-3	50%	74%	92%	—	—	—	—	—	—
0-5/ 1-5	50%	61%	73%	85%	96%	—	—	—	—
0-7/ 1-7	40%	50%	60%	70%	80%	90%	96%	—	—
0-9/ 1-9	25%	34%	43%	52%	61%	70%	79%	88%	96%

### Attached list 5: symbol definition

No	Symbol	Definition
1	SEE	Setting
2	PSD/PP	Password
3	DEL	Power delayed time
4	DEF	Recover default
5	EE	Trip and time to clear
6	BE	Backlight
7	HF	Throttle-changing
8	HE	Throttle power assist walk
9	ES	Speed limit
10	ED	Wheel diameter
11	?	Question mark
12	←	Backward
13	→	Forward
14	Y	Yes
15	N	No

**KING-METER**