
KING-METER

USERS GUIDE

Digital II –LCD



English

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Preface

Dear users,

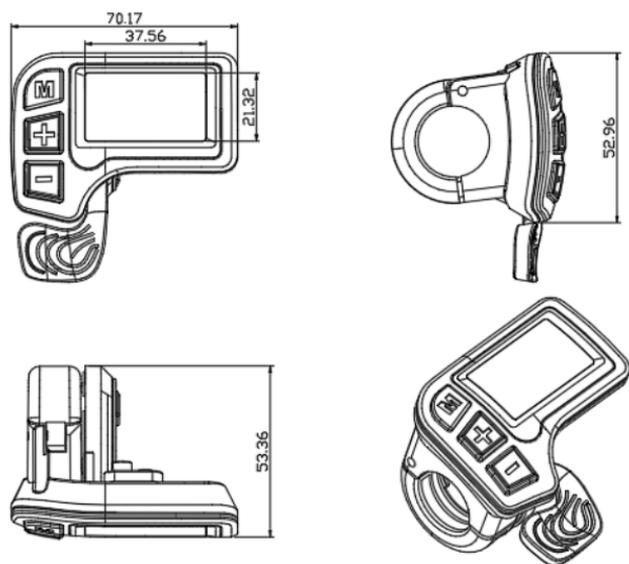
To ensure better performance of your e-bike, please read through the Digital II-LCD product introduction carefully before using it. We will use the brief words to inform you of all the details (including hardware installation, setting and normal use of the display) when using our display. Meanwhile,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

Appearance and Size

Material and Color

Digital II-LCD housing material: PC. And the color of housing is black. Working temperature scope: -20°C — $+60^{\circ}\text{C}$, the shell material can ensure normal use and good mechanical performance of the products

Display Size and Installation Size (Unit: mm)



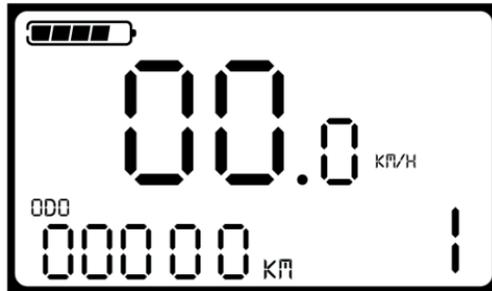
Function Summary and Button Definition

Function Summary

Digital II-LCD offers plenty of functions and showing to meet your requirements.

- ◆ Battery indicator
- ◆ Speed (Including real time speed, Max speed and Average speed)
- ◆ Distance (Including single Trip distance, ODO)
- ◆ Trip time
- ◆ Walk assist
- ◆ Turn on Backlight
- ◆ Error code
- ◆ Multiple parameter setting
- ◆ Recover default parameter setting

Normal Display Area



Digital II-LCD Normal display interface

Button Definition

The display with three buttons as below diagram, in the following

introduction,  is named as **MODE**,  is named as

UP,  is named as **DOWN**.

Operation Cautions

Be careful during use, do not plug in and out the connector of display when electrified.



Avoid collision.



Please do not tear off the stickers to avoid water infusion.



Please do not modify system parameters to avoid parameter disorder.



Make the display repaired immediately when not working properly.

Installation Instruction

Fix the display on the handlebar, adjust the angel. Plug the two connectors from display and controller when off power supply.

Standard Operation

Power On/Off

Hold **MODE** button to start display and supply power to the controller, E-bike start to work. When at working state, press and hold **MODE** to shut off E-bike power. In the off state, the display no longer uses the battery's power supply; leakage current is less than 1uA.



If do not use E-bike for more than 10 minutes, the display will turn off automatically.

Display Interface

After turning on display, it shows real time speed. Shortly press **MODE** to switch speed information, showing as real time speed (unit Km/h)→average speed (unit Km/h)→Max Speed (unit Km/h)→real time speed.



After turning on display, it shows ODO distance (unit KM) .Press and hold **MODE** and **DOWN** together to switch the information, showing as ODO (unit KM) →single trip distance (unit KM) →single trip time →ODO (unit KM).



Walk Assist

Press and hold **DOWN** to start walk assist status. The bike will keep at an even speed output 6km/h. Release the button to exit walk assist status. The screen shows walk mode flashing symbol.



Walk Assist Interface



Walk assist can only be working when you push the bike and please do not start this function when riding.

Turn on Backlight

Press and hold **UP** for 2 seconds to turn on the backlight of display, the e-bike headlight will be powered on at the same time. To turn on LCD backlight when lack of light or riding at night. Hold **UP** for 2 seconds again, LCD backlight turns off.



Backlight and headlight interface

PAS level Selection

Press **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 interface

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.



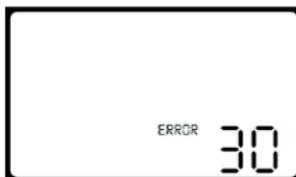
Battery voltage



Flashing at low voltage

Error code

When the e-bike's electronic system is wrongly working, display will show the error code. Please find the Appendix 1 for detail.



Error Code Interface

The error interface can exit only when the fault is eliminated, the E-bike will not continue to drive after the failure.

Users Setting

Preparation before Starting up

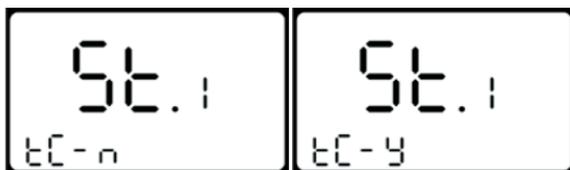
Make sure all connectors tightened and the cables without damage, power on the e-bike.

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

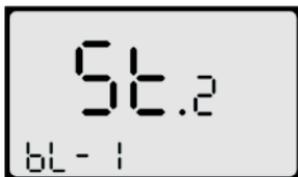
TC means trip distance clearance. Press **UP** or **DOWN** to choose **Y** or **N**, **Y** means to clear the trip distance.



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

Backlight Brightness

BL means backlight. There are level 1, 2,3. Level 1 is the lowest brightness, Level 3 is highest brightness. The default level is 1. Press **UP** or **DOWN** to modify the backlight brightness.



Exit Setting

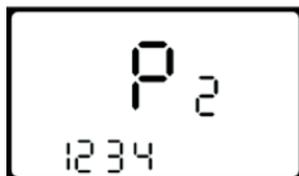
Shortly press **MODE** to confirm the input and enter into next setting. Hold **MODE** to save the modification and exit the general setting.

Password Setting

Hold both **UP** and **DOWN** for 2 seconds to enter normal setting interface. Then hold both **UP** and **MODE** for 2 seconds to enter power-on password setting.

On the screen shows “P 2”, this requests to input power-on password. **UP** and **DOWN** is to change the number, and **MODE** is to select digit one by one. After the 4 digits inputted, press **MODE** to confirm. In case password correct, enter the Power-on password enable interface, otherwise stays at the password

interface. The factory default password is : 1234.



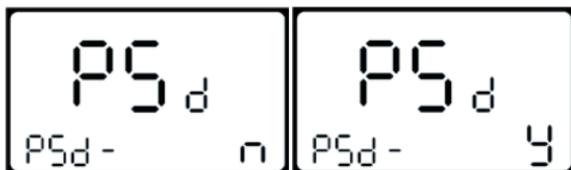
Power-on password interface

Password Enable

Press **UP/DOWN** to select **Y** or **N**, and press **MODE** to confirm and enter Password modify interface.

y = Power-on Password Enable

n = Power-on Password Disable



Password enable interface

Password Modification

PS means password. **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 and exit the setting state.



Password modification interface

Using Parameter Setting

Hold both **UP** and **DOWN** for 2 seconds to enter normal setting interface. Then hold both **DOWN** and **MODE** for 2 seconds to enter Using parameter setting.

On the screen shows "P 1", this requests to input permission password. **UP** and **DOWN** is to change the number, and **MODE** is to select digit one by one, finally press **MODE** to confirm. In case password correct, enter the Power-on password enable setting interface, otherwise stays at the password interface. Hold **MODE** to exit. The permission password is : 0512.



Using parameter setting interface

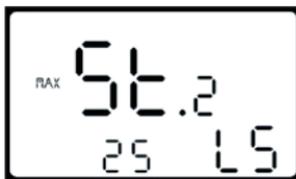
Wheel Diameter Setting

LD means wheel diameter. The set values are 16inch, 18 inch, 20 inch, 22 inch, 24 inch, 26inch, 700C, 28inch. Press **UP** and **DOWN** to select the corresponding wheel diameter of E-bike to ensure the accuracy of display speed and mileage. Press **MODE** to confirm and enter into Speed limit setting.

Speed Limit Setting

LS means limit speed. The maximum riding speed of factory default of display is 25km/h. Changing the value can set max.riding speed of E-bike, when E-bike exceeds set value, the controller will stop powering the motor to protect rider's safety.

The optional range of maximum speed setting is 12km/h-40km/h .Shortly press **UP** or **DOWN** to adjust limited speed parameters, press **MODE** to confirm and exit the setting.



Speed limit setting interface

Personalized Parameter Setting

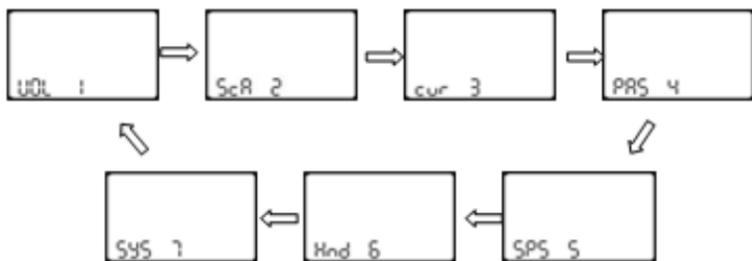
Personalized parameter setting can match variety requirements in use. Setting items are: Battery indicator setting, PAS level setting, Over-current cut, PAS sensor setting, Speed sensor setting and Throttle function setting(optional) and System setting. In total six items. For the details, please see the **Attached List 3**.

Personalized Setting Password Input

Hold both **UP** and **DOWN** for more than 2 seconds to enter normal setting, then hold both **UP** and **DOWN** again to enter into personalized parameter setting interface.

On the screen shows “**P 3**”, this requests to input permission password. **UP** and **DOWN** is to change the number, and **MODE** is to select digit one by one, finally press **MODE** to confirm. In case password correct, enter the Power-on password enable setting interface, otherwise stays at the password interface. Hold **MODE** to exit. The permission password is : 2962.

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



Option Select Page

Battery Indicator Setting

VOL means battery voltage. Each battery bar represents a voltage value. 5 voltage values **MUST BE** entered one by one. Take the first voltage for example, “1” on the screen means the first voltage, “28.0” means the first battery voltage value. Press **UP/DOWN** to select the value and **MODE** to confirm and enter into next voltage setting. After all 5 voltages set, hold **MODE** to confirm and turn back to personalized parameter setting interface.

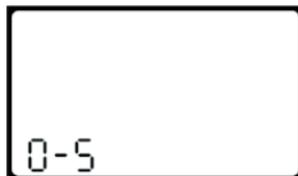


Battery indicator voltage setting interface

Pedal Assist Parameter Setting

Pedal Assist Level Option

SAC means pedal assist parameter setting. In Pedal assist 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, press **MODE** to confirm and enter into the Pedal assist ratio setting.



Pedal assistant level option interface

Pedal Assist Ratio Modification

To modify the value of Pedal assistant ratio will meet the different requirements.

Take the level 1 for example, “30-50 percent” is the recommended range, “40” is the present value (i.e. 40% output). Press **UP/DOWN** to select, shortly press **MODE** to confirm and enter into the next Pedal assistant ratio setting. After all inputted, hold **MODE** over 2 seconds to confirm the modification and turn back to personalized parameter setting interface. For the details, please see **Appendix 4**.



Pedal assistant ratio setting interface

Controller Over-Current Cut Setting

CUR means current. CUR value can be changed from 7.0A to 18.0A. Press **UP/DOWN** is to change the value of the current, and hold **MODE** to confirm the setting and turn back to personalized parameter setting interface. 15A is the default value of controller over-current cut.



Current setting interface

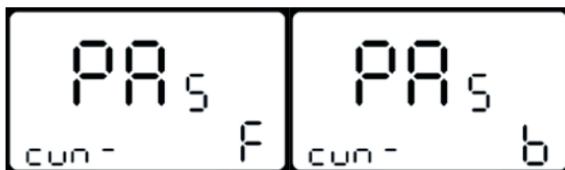


Depending on the hardware of controller, some controller may not reach the set value 18A.

Pedal Assist Sensor Setting

The Direction of Pedal Assist Sensor Setting

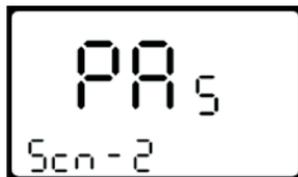
Run means the running direction of pedal assist sensor. “run-F” means forward direction, while “run-b” means backward direction. Press **UP/DOWN** to select F or b, and press **MODE** to confirm and turn to PAS sensitivity setting. The default direction is forward.



Direction of Pedal assistant sensor setting

The Sensitivity of PAS Sensor 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 Pedal assist sensor ratio setting. SCN default value is 2.



The Sensitivity of PAS sensor setting

PAS Sensor Proportion Parameter Setting

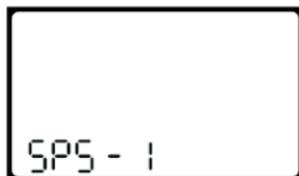
n means the proportion parameter of PAS. Press **UP/DOWN** to select the parameter, the more power, the more PAS feeling. Hold **MODE** to confirm and turn back to personalized parameter setting interface.



Proportion parameter of PAS

Speed Sensor Selection

SPS means Speed sensor. It can be set according the magnet head number on the e-bike wheel. Press **UP/DOWN** to select the quantity of magnet head (the range is from 1 to 9), and hold **MODE** to confirm and turn to personalized parameter setting interface. SPS default value is 1.



Speed Sensor Selection

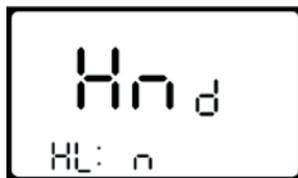
Throttle Function Setting (optional)

Throttle Walk Assist Enable/Disable(optional)

HL means throttle walk assist. **HL:N** means function disable ,**HL:Y** means function enable .

When **HL=Y**, use the throttle to realize walk assist state. Press **UP/DOWN** to select Y/N. If **N** is selected, press **MODE** to confirm and turn to throttle vector enable setting, otherwise there is no response.

Hold **MODE** to confirm the selection and turn back to personalized parameter setting interface. HL default value is N.

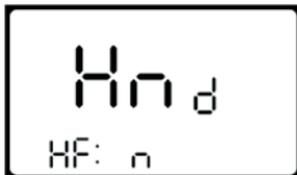


Throttle Enable/Disable setting

Throttle Vector Enable/Disable(optional)

HND means throttle. **HF: Y** means throttle vector enable , **HF: N** means throttle vector disable. If **HF: Y** is selected, when turning the throttle, the maximum output of the motor can only reach the speed of corresponding PAS level shown on the display; if **HF: N** is selected, it means when turning the throttle, speed is not limited by the PAS level shown on the display, it can reach the rated

maximum speed. Press **UP/DOWN** to select Y or N, and hold **MODE** to confirm the selection and turn back to personalized parameter setting interface.



Throttle Vector Enable/Disable interface

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** to confirm and enter the max speed limit setting. The default time is 3s.



Delay time of battery power interface

Max Speed Limit Setting

MAX SPD means max speed limitation. Set the max speed when

pressing **UP/DOWN** from 25-40 Km/h. Shortly press **MODE** to confirm and enter into Button walk mode enable setting. The default is 40Km/h.



Max speed limit setting interface

This setting parameter is the upper limit specified by the display manufacturer.

Button Walk Assist Enable Setting

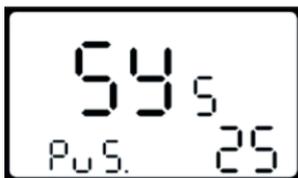
PUS means button pushing walk assist. Press **UP/DOWN** to choose **Y/N**. **Y** means enable, and hold **DOWN** to run at walk assist mode. **N** means disable. Shortly press **MODE** to confirm and enter into Push walk assist speed setting. The default value is Y.



Button Walk Assist Enable Setting

Walk Assist Speed Setting

PU means Push (walk assist speed setting). Set the value to adjust walk assist speed to meet rider's requirements. The scope is "20-35" by pressing **UP/DOWN**, shortly press **MODE** to confirm and enter into Slowly start up setting. Default value is 25(i.e. the output is 25%).



Interface of walk assist 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. Hold **MODE** to confirm and turn back to personalized parameter setting interface. The default value is 1.



Interface of slowly start up setting

Exit Setting

At the Personalized parameter setting state: shortly press **MODE** to confirm the input and enter into next setting; hold **MODE** for more than 2 seconds to save current parameter setting and exit the current setting; hold **DOWN** to cancel the current operation and exit without saving the current setting.



If there is no operation in one minute, display will automatically exit the setting state.

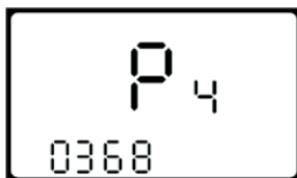
Recover Default Setting

DEF means recover default. Hold both **UP** and **MODE** for more than 2 seconds to enter the default setting interface. Pressing **UP/DOWN** to select Y or N. **Y** means to recover default setting. And permission password is required to recover default setting.



The permission password is:0368. Shortly press **MODE** to shift digits, press UP/DOWN to change the input value. After all 4digits

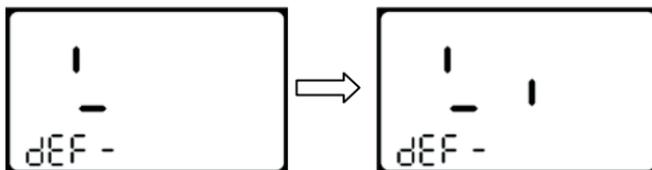
password inputted, press **MODE** to confirm. After recovering successfully, the display will automatically exit.



Input recovery password interface



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



FAQ and Questions

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: Send it to the maintenance place immediately.

Quality Warranty and Coverage

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 after display out of the factory.

II . Other items

The following items do not belong to our warranty scope.

1. The shell is disassembled.
2. The connector is broken.
3. Shell is broken or scratched after the display delivered out of factory.
4. Lead wire is broken or scratched.
5. Failure or damage caused by force majeure (such as fire, earthquake, etc.) or natural disasters like lighting, etc.
6. Beyond Warranty period.

Circuit Block Diagram

Table 1 : Standard connector cable sequence (display without throttle)

Standard sequence	Wire color	Definition
1	red (VCC)	Power+
2	blue(K)	Power of controller
3	black(GND)	GND
4	green(RX)	Receiving data
5	yellow(TX)	Transmitting data

Notes: some displays are with waterproof cables, wires hidden inside the wire cover.

Table 2: Standard connector cable sequence (display with throttle)

Standard sequence	Wire color	Definition
1	red (VCC)	Power+
2	blue(K)	Power of controller
3	black(GND))	Gnd
4	green(RX)	Receiving data
5	yellow(TX)	Transmitting data
6	white(ZB)	Throttle signal data

Software Version

This operating instruction is general-purpose software (version V1.0). Some version of the e-bike LCD may have slightly difference, which should depend on the actual use version.

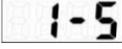
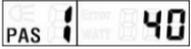
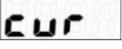
Appendix 1: Error Code

Code number	Definition
21	Abnormal current
22	Throttle fault
23	Motor phase problem
24	Motor Hall defect
25	Brake Failed
30	Abnormal Communication

Appendix 2: Password Table

No.	Display	Password	Setting
1		0512	Using parameter setting password (fixed)
2		Default 1234	Starting up password (changeable)
3		2962	Personalized parameter setting password (fixed)
4		0368	Recovery setting password (fixed)

Appendix 3: Personalized Parameter Setting

No.	Setting	Display	Details
1	Battery power		Five battery power value 
2	PAS level		PAS level option 
			PAS level proportion 
3	Current-limit		Limit current 
4	PAS sensor		PAS sensor direction 
			PAS sensor sensitivity 
			
5	Speed sensor		Speed sensor magnet No. 

Continue Appendix 3:

No.	Setting	Display	Details
6	Throttle function	Hnd	Throttle walk assist enable setting HL-n
			Throttle vector enable setting HF-n
7	System setting	545	Time delay of battery dy:3
			Max speed setting SP:40
			Button walk assist enable setting PU54
			Walk assist speed setting PU:25
			Slowly startup setting SSP.1

Appendix 4: Pedal Assist Proportion default value

Level Item \ Level	1	2	3	4	5	6	7	8	9
0-3/ 1-3	47%	72%	92%	—	—	—	—	—	—
0-5/ 1-5	15%	33%	50%	66%	100%	—	—	—	—
0-7/ 1-7	35%	46%	57%	68%	79%	90%	97%	—	—
0-9/ 1-9	25%	34%	43%	52%	61%	70%	79%	88%	96%

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