

the eBike Display

User Manuals

<u>KD986</u>

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Product name and model

Ebike intelligent color LCD display, model: KD986

Specifications

●48V power supply

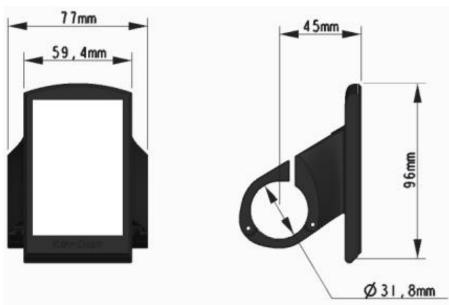
•display nominal current: 40mA •display maximum current: 200mA •off-state leakage current: $<1\mu$ A •operating temperature: -20 \sim 60 $^{\circ}$ C

•storage temperature: $-30{\sim}70^{\circ}{\rm C}$

Appearance & size

Display appearance and size (unit: mm)





Functional Summary

KD986 can provide a lot of functions to fit your needs. The indicating contents are as follows:

- Battery indicator
- Motor power indicator
- PAS level adjustment and indicator
- •Speed (incl. real speed, Max. speed and Avg. speed)
- •Distance (Trip and ODO)
- 6km/h push assistance
- Riding time
- Backlight
- •Error code
- USB connection
- BLE connection
- •Various Parameters Settings (e.g., wheel size, speed-limit, battery voltage segmented values setting, PAS level parameters etc.)

General operations

◆Key definition

Key K5, 5 buttons, ON/OFF, info, +, light, -/Walk boost. Key K6, 6 buttons, ON/OFF, info, +/light, -/Walk boost, <(left) and >(right).

♦Key options

Hold ON/OFF, + and - for 2s to enter the interface for key options. Press +/- to choose the desired key mode. Press ON/OFF button to save a changed setting and exit to home screen.





Key options

♦ON/OFF

Press "ON/OFF" button for 2 seconds, the display will turn on and the whole system will start to work. When display is on, long press the "ON/OFF" button to turn off the power of the e-bike. When display is off, display no longer uses battery power and the off-leakage current is less than 1 μ A. (**K5 and K6 are the same for button operations**)

■ When parking the E-bike for more than 5 minutes, the E-bike system switches off automatically

◆Display interface

After switching on the E-bike system, the display will show Current speed, Dual drive mode and Trip Distance(KM), ODO (KM) as default. Pressing the "i" button to switch between following items:

ODO (Km) \rightarrow Max. Speed (Km/h) \rightarrow Avg. Speed (Km/h) \rightarrow Riding Time (Min.) (K5 and K6 are the same for button operations)



Display interface

♦ Walk boost

Keep holding - button, after 2 s, the ebike is activated to the walk boost mode and ebike moves at a uniform speed of 6km/h and screen shows icon " . when you release - button, ebike stops power output immediately and gets back to the status before walk boost is activated. (**K5 and K6 are the same for button operations**)



Walk boost

♦Light control

Key K5, press for 2s to turn on the light and display backlight brightness

lowers down. Press again for 2 s to turn off the light and display backlight brightness recovers.

Key K6, hold + for 2s to turn on the light and display backlight brightness lowers down. Press + again for 2s to turn off the light and display backlight brightness recovers.



Bike light on

◆PAS level selection

Short press the "+" or "-" button to switch the pas level of the bike and change the output power of the motor. The default output power ranges from level 0 to level 5. PAS level 0 stops power output, PAS level 1 is the minimum power, PAS level 5 is the maximum power. As shown in the figure below, it is PAS level 1. (**K5 and K6 are the same for button operations**)



PAS level selection

◆Motor power output

The motor power can be known from display. Shown as in below figure.



Motor power

♦ Motor modes

Press i button for more than 2 s and you choose Dual/fron/rear, 3 drive modes. Dual mode is the default. **(K5 and K6 are the same for button operations)**



Dual drive



front drive



rear drive

♦USB connection

When USB device is connected to display, the connection icon is as follows:



USB connection

♦BLE connection

When display connected with smartphone app, "Key-Disp". The connection icon is as follows:



BLE connection

♦Err code

When an err appears, display shows err codes. Please refer to attached lis for definition details.



Err interface

■When an error code is displayed, please repair the bike. Or else the e-bike will not be able to run normally.

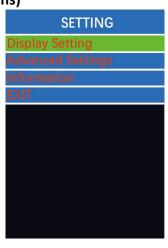
Setting

When display is on and bike is static. Hold + and - for 2s to enter setting page.

Please enter password 1212 by pressing +/- to change the values and press i to confirm and move to next digit. When password is input correctly, press i to enter setting page.

Setting includes Display setting, Advanced settings, Information (software info). (K5 and K6 are the same for setting operations)





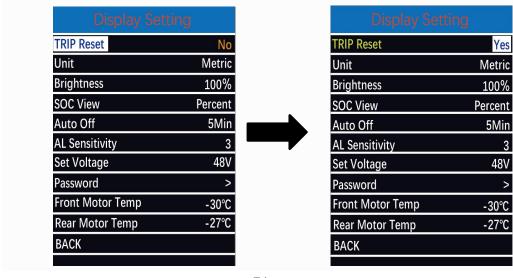
Setting

all settings must be done to a parked ebike with no speed

Display settings

♦Trip Reset

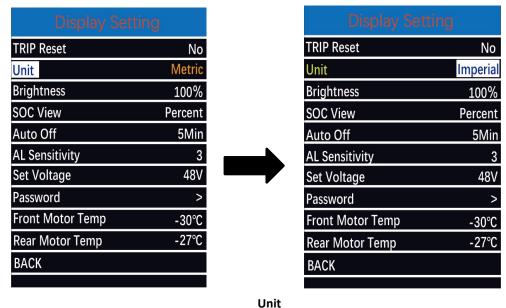
"TRIP Reset" is for clearing a trip distance. Press +/- to choose No (no clearing a trip distance) or Yes (clearing a trip distance). press i to save a changed setting. Or hold i button to exit to home scree or use "BACK" → to home screen. When display is off or ebike is powered off, the TRIP data will not be automatically cleared.



Trip reset

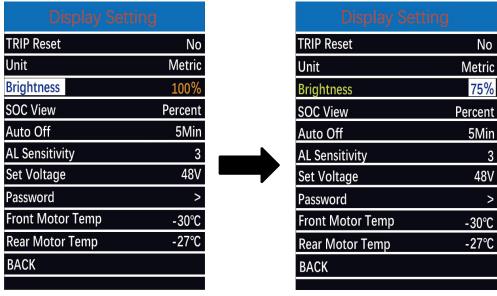
♦Unit

"Unit" is for toggling between Metric (km)/Imperial (mile). press +/- to choose the desired unit. The default is Metric (km). Press i to save a changed setting.



Brightness

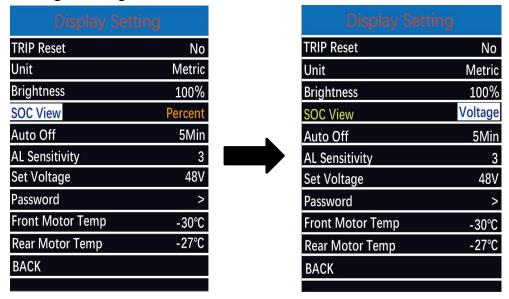
"Brightness" is the display backlight brightness setting. Press +/- to change the brightness. The range is 100%-75%-50%-30%-10%. 100% is the brightest and 10% is the minimum brightness. Press i to save a changed setting.



Brightness

◆ SOC View

"SOC View" is for the method for displaying the battery SOC. One is percent and the other is voltage value. Press +/- to choose your desired mode. Press i button to save a changed setting. The default is Percent.



SOC View

◆Auto off

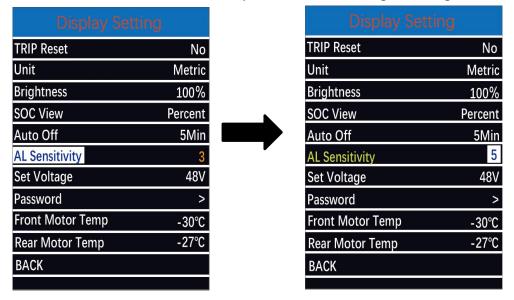
"Auto off" is for turning off the display in a certain time duration. To set the duration, press +/- to choose from OFF, 1-9 mins. The default set is 5 mins. Press i to save a changed setting.



Auto off

♦AL sensitivity

"AL Sensitivity" for setting the sensitivity for the light sensor. Press +/- to choose from 5-1 or OFF. The default is 3. press i to save a changed setting.



AL sensitivity

♦Set voltage

"

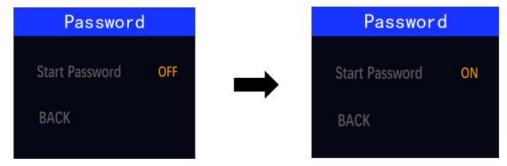
Set voltage is for setting the battery voltage segmented values. The display only supports 48V. Press i to switch between voltage segments. For example, 40 volt is the first the segment and you can change the value by pressing +/-. press i to confirm and move to the next segment. After all 5 segments are completed, long press i to confirm and save the settings.

Display Sett	ting	Display Sett	ting	Display S	etting
TRIP Reset	No	TRIP Reset	No	TRIP Reset	No
Unit	Metric	Unit	Metric	Unit	Metric
Brightness	100%	Brightness	100%	Brightness	100%
SOC View	Percent	SOC View	Percent	SOC View	Percent
Auto Off	5Min	Auto Off	5Min	Auto Off	5Min
AL Sensitivity	3	AL Sensitivity	3	A 1 - 40.0V	3
Set Voltage	48V	Set Voltage	48V	S 2 - 44.5V	48V
Password	>	Password	>	P. 3 - 46.5V	>
Front Motor Temp	-30°C	Front Motor Temp	-30°C	4 - 47.5V 5 - 49.0V	-30°C
Rear Motor Temp	-27°C	Rear Motor Temp	-27℃	Real Wotor Temp	-27°C
ВАСК		BACK		BACK	

Set voltage

◆ Password

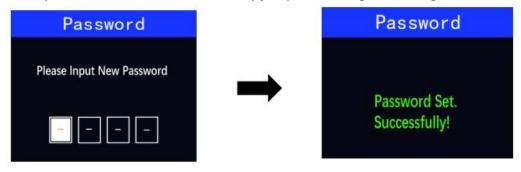
Press +/- to select **Password** and press i to enter the setting. Press i again to choose **Start Password**. Press +/- to switch between OFF and ON. See below,



Password

Password enable

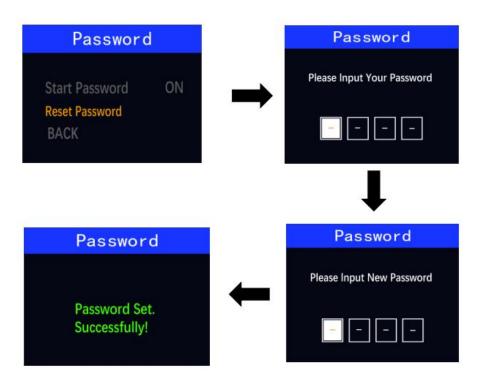
After selecting "ON" in the "Start PassWord" interface, short press the "i" to confirm. The interface prompts for password input, short press the "+" or "-" to enter numbers, short press the "i" key to move to next digit, and after entering the 4-digit password, short press the "i" key to confirm; The interface prompts to enter the password again. After two consistent inputs, the system prompts that the password has been set successfully. If the two inputs are not consistent, you need to repeat the first step of entering a new password and confirm. After the password is set successfully, the interface will automatically jump to the original setting interface



Password enable

Password Reset

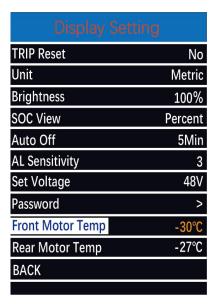
After password is started, the "Password" interface will add a "Reset Password" option. Short press "+" or "-" to select "Reset Password", and then short press "i" again to confirm. At this time, the interface will prompt for the current password. If the password is entered correctly, the interface will prompt for a new password. After the password is successfully modified, in 2S, the interface will automatically jump to the original setting interface.



Password change

♦ Front motor temp

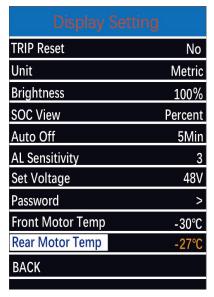
"Front Motor Temp" for checking the front motor temperature and the value can not be changed.



Front motor temp

♦Rear motor temp

"Rear Motor Temp" for checking the rear motor temperature and the value can not be changed.



Rear motor temp

Advanced settings

◆Assist levels

"Assist levels" is for setting the assist level modes. 8 options: "0-3, 1-3, 0-5, 1-5, 0-7, 1-7, 0 -9, 1-9". press +/- to choose your desired mode. Press i to confirm a changed setting.



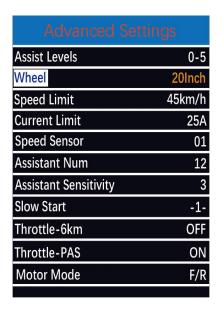


Advanced Settings		
Assist Levels	0-5	
Wheel	20Inch	
Speed Limit	45km/h	
Current Limit	25A	
Speed Sensor	01	
Assistant Num	12	
Assistant Sensitivity	3	
Slow Start	-1-	
Throttle-6km	OFF	
Throttle-PAS	ON	
Motor Mode	F/R	

Assist levels

♦Wheel

Wheel is for setting the wheel sizes. Press +/- to set the wheel sizes and the optional sizes are "16Inch、18 Inch、20 Inch、22 Inch、24 Inch、26 Inch、700C、28Inch". the default is 20 inch. Press i to save a changed setting.





0-5

25A

01

12

3

-1-

OFF

ON

F/R

22Inch

45km/h

Wheel

◆Speed limit

"Speed Limit" is for setting the speed limit. Press+/- to change the speed limit value. The optional value is 17-45 km/h. the default is 45km/h. press i to save a changed setting.

Advanced Set	ttings
Assist Levels	0-5
Wheel	20Inch
Speed Limit	45km/h
Current Limit	25A
Speed Sensor	01
Assistant Num	12
Assistant Sensitivity	3
Slow Start	-1-
Throttle-6km	OFF
Throttle-PAS	ON
Motor Mode	F/R

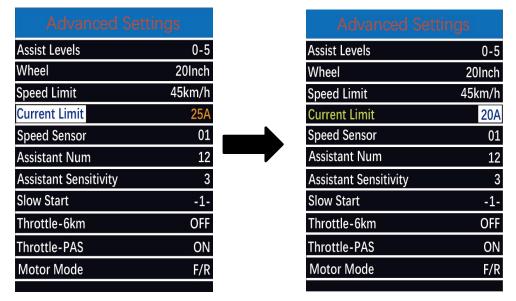


Advanced Sett	ings
Assist Levels	0-5
Wheel	20Inch
Speed Limit	35km/h
Current Limit	25A
Speed Sensor	01
Assistant Num	12
Assistant Sensitivity	3
Slow Start	-1-
Throttle-6km	OFF
Throttle-PAS	ON
Motor Mode	F/R

Speed limit

◆Current limit

"Current Limit" is for setting the top current, press +/- to choose your desired value. The range is "7-30A", the default is "25A". Press i to save a changed setting.



Current limit

♦Speed sensor

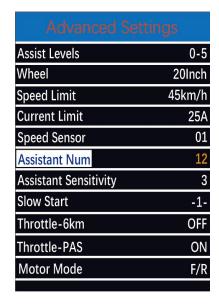
Speed sensor is to set the magnet numbers on the wheel spoke for the speed sensor. Press +/- to choose from 01 to 12. press i to confirm and save a changed set. The default setting is 01.

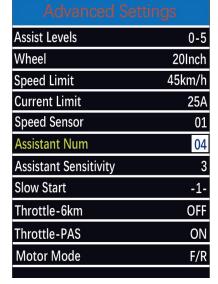


Speed sensor

♦ Assistant Num

Assistant Num is to set the magnet numbers for the PAS sensor. Press +/- to choose from 04-09, 12, 24, 32. press i to confirm and save the settings. The default is 12.

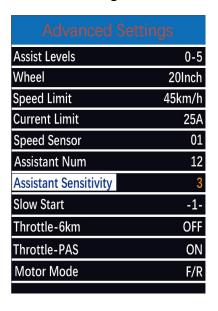




Assistant Num

◆ Assistant Sensitivity

"Assistant Sensitivity", press +/- to change the values for assistant sensitivity. the settable range is 0-5. the default is 3. press i to confirm a changed setting.



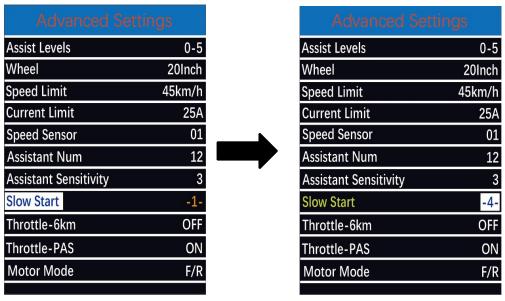


Advanced Set	
Assist Levels	0-5
Wheel	20Inch
Speed Limit	45km/h
Current Limit	25A
Speed Sensor	01
Assistant Num	12
Assistant Sensitivity	5
Slow Start	-1-
Throttle-6km	OFF
Throttle-PAS	ON
Motor Mode	F/R

Assistant sensitivity

♦Slowly start

"Slowly start up", When pressing the pedal, it takes some time before receiving assistance. Select the desired value by pressing the "+" or "-" button, '4' is the slowest, and display defaults to '1' for slow start.



Slow start

♦throttle-6km

Throttle enable is for setting walk boost by throttle. Press +/- to choose ON (enable) / OFF (disable). the default value is OFF. Press i button to confirm a changed setting.

Advanced Set	tings	Advanced Set	ttings
Assist Levels	0-5	Assist Levels	0-
Wheel	20Inch	Wheel	20Inc
Speed Limit	45km/h	Speed Limit	45km/
Current Limit	25A	Current Limit	25
Speed Sensor	01	Speed Sensor	C
Assistant Num	12	Assistant Num	1
Assistant Sensitivity	3	Assistant Sensitivity	
Slow Start	-1-	Slow Start	-1
Throttle-6km	OFF	Throttle-6km	6KM/
Throttle-PAS	ON	Throttle-PAS	0
Motor Mode	F/R	Motor Mode	F/

throttle- 6km

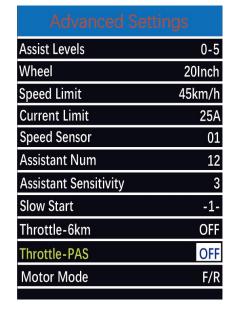
◆Throttle-PAS

Press +/- to choose **ON (enable)** or **OFF (disable)**. the default is NO (disable). press i button to save a changed setting.

If **ON**, means throttle speed is limited by current assist level.

If **OFF**, means throttle speed is not limited by current pedal assist level. Full speed throttle.

Advanced Set	
Assist Levels	0-5
Wheel	20Inch
Speed Limit	45km/h
Current Limit	25A
Speed Sensor	01
Assistant Num	12
Assistant Sensitivity	3
Slow Start	-1-
Throttle-6km	OFF
Throttle-PAS	ON
Motor Mode	F/R



Throttle PAS

♦ Motor mode

"Motor Mode" is for setting the motor drive modes. Press+/- to choose from "F/R(dual drive), F(front drive), R(rear drive)", the default is "F/R (dual drive)".

Advanced Set	tings
Assist Levels	0-5
Wheel	20Inch
Speed Limit	45km/h
Current Limit	25A
Speed Sensor	01
Assistant Num	12
Assistant Sensitivity	3
Slow Start	-1-
Throttle-6km	OFF
Throttle-PAS	ON
Motor Mode	F/R



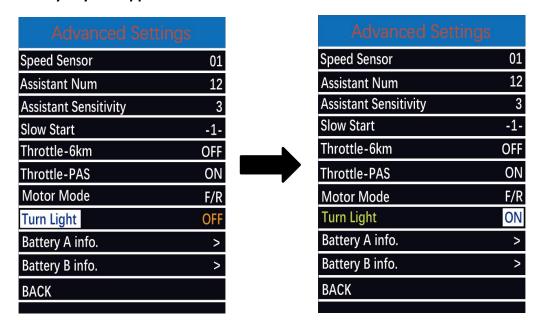
Advanced Set	
Assist Levels	0-5
Wheel	20Inch
Speed Limit	45km/h
Current Limit	25A
Speed Sensor	01
Assistant Num	12
Assistant Sensitivity	3
Slow Start	-1-
Throttle-6km	OFF
Throttle-PAS	ON
Motor Mode	R

Motor Mode

◆Turn light

"Turn Light" is for turn signal setting. Press+/- to choose ON(enable) or OFF(disable). the default is "OFF (disable)". press i button to save a changed setting.

Note: Only Key K6 supports this function.



Turn light

Left signal

Press "<" button on Key K6 to activate "left turn signal" and screen shows icon
. when making a left turn, the icon gives 60 flashes in 1 minute. Press "<" again to turn "left turn signal" off.



Left signal is on

Right signal

Press ">" button to turn on "right turn signal" and screen shows icon ... when making a right turn, the icon gives 60 flashes in 1 minute. Press ">" again to turn "right turn signal off".

Press < and > successively and both signals can be displayed on the screen.



Right turn is on



both turns are on

♦Battery A info.

"Battery A info." for checking battery A status. Press i to enter and press - to choose Next Page to move next pages. All together 5 pages.



Battery A info

◆Battery B info

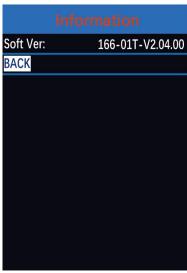
"Battery B info." for checking battery B status. Press i to enter and press - to choose Next Page to move next pages. All together 5 pages.



Battery B info

Information (software info)

"Information" is for checking the software information. Long press i to exit or press BACK to exit



Information

Note: the software version is only Key-Disp's internal tracking purpose.

Quality assurance and warranty scope

I Warranty

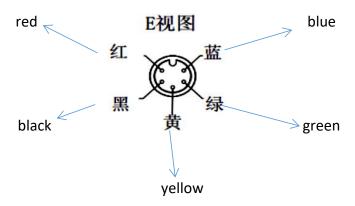
- (1) The warranty will be valid only for products used in normal usage conditions.
- (2) The warranty is valid for 24 months after the shipment or delivery to customers

II The following cases do not belong to our warranty scope.

- 1. The display is demolished.
- 2. The damage of the display is caused by wrong installation or operation.
- 3. Shell of the display is broken when the display is out of the factory.
- 4. Wire of the display is broken.
- 5. The fault or damage of the display is caused by the force majeure (e.g., fire, earthquake, etc.).
 - 6. Beyond Warranty period.

Connection layout

Standard connector pinout



Pinout table

Serial	Colors	Functions
1	red (VCC)	Display power wire
2	Blue (K)	KP wire
3	black (GND)	GND
4	green (RX)	Data- receive
5	yellow (TX)	Data- transmit

■ Some displays have wire connection with water-proof connectors, users can not see the color of lead wires in the harness.

Warnings:

- ◆ Use the display with caution. Don't attempt to release or link the connector when battery is on.
 - ◆Try to avoid hitting the display.
 - ◆ Don't modify system parameters to avoid parameter disorder.
 - ◆ Make the display repaired when error code appears.

Attached list 1: Error code definition

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