KEY-DISP

The eBike Display

User Manual

KD831

Product name and Model

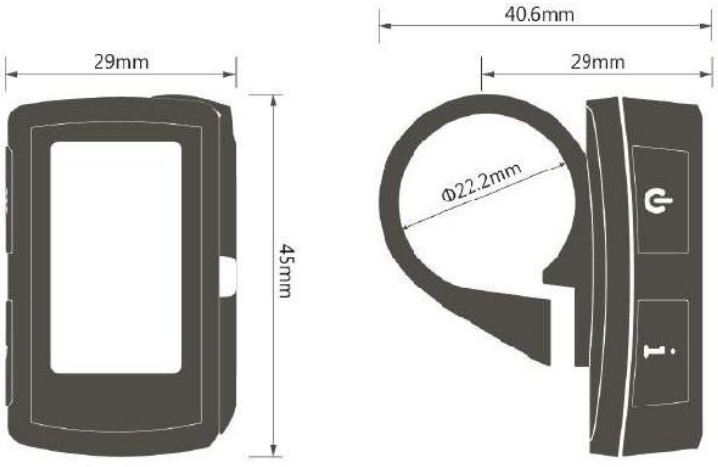
Electric Bicycle Intelligent Display,
Model: KD831.

Specifications

- ●24V/36V /48V Power Supply
- ●Rated current: 10mA
- ●The maximum working current: 30mA
- ●Off-state leakage current: <1μA
- ●Working temperature: -20 ~ 60 ℃
- ●Storage temperature: -30 ~ 70 ℃

Appearance and Size

Display appearance and dimensional drawing (unit: mm)



Function and Button Definition

◆Function Summary

KD831 has a lot of functions to meet the riders' needs. The indication elements are

- Intelligent Battery SOC indicator
- Assist level adjustment and indication
- Speed indication
- Motor-output indicator
- Trip time
- Trip distance and Total distance
- The push-assistance function and indicator
- Lighting control and indicator
- Error Code indication

◆Button Definition

There are four buttons, *power button, mode button and plus & minus buttons* on KD831 display. In this manual, we use words **ON/OFF, i, +, -** to represent these four buttons. The top edge and the bottom edge of the display will be working as "plus" button and "minus" button. The touch feeling is like a rocker switch.

Install Instructions

KD831 can be mounted on the left side of handlebar close to its grip. Adjust the angle for a good screen view. Cut off the power before connecting the corresponding connectors between display and controller.

General Operation

◆Switching the E-bike system On/Off

To switch on the E-bike system, hold the **ON/OFF** button for 2s.
To switch off the E-bike system, hold the **ON/OFF** button for 2s.
When E-bike system is switched off, the leakage current is less than 1 μA.

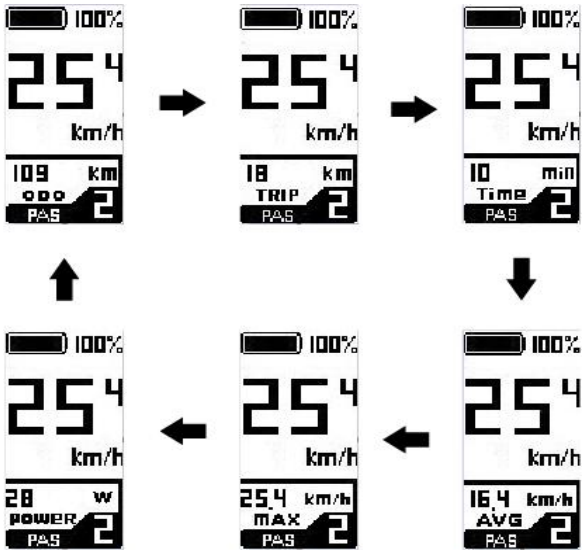
* if sticky button for **ON/OFF** or **push assist** (**-** button in KD831 serves as push assist function button) or overvoltage or short-circuit MOS tube happens, the corresponding error code will be indicated on the display. Please refer to **attached list 1** for more details. If user operates the display improperly such as over pressing the on/off button or pressing on/off button and – button simultaneously, turn off the display and restart it.

■In case of no use of bike for approx. 10 minutes, the display switches off automatically.

◆ Main menu interface(function display page)

After the E-bike system is switched on, the display shows current speed by default. Press **i** button to switch between indication functions below:

Current Speed (Km/h) → ODO(Km) → Trip Distance (Km)→Trip Time (Min) → Average Speed (Km/h) → Max Speed (Km/h) →Power(W).



Indication items cycle interface

◆push assist function

To activate the push-assistance function, press and hold the **-** button. After 2 seconds, the E-bike will go on at a uniform speed of 6 Km/h and "  " is shown on the screen at the same time. The push-assistance function is switched off as soon as you release the **-** button.

Push assist function

■Push-assist function may only be used when pushing the E-bike. Be aware of danger of injury when the wheels of E-bike do not have ground contact while using push-assistance function.

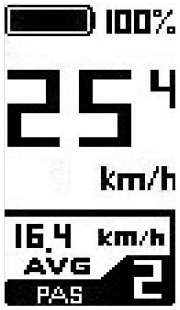
◆switch the bike light on/off

When light is off, after long pressing + button, display sends command to controller to turn on the light and the light icon is shown on the display screen. When light is on, after long pressing + button, display sends command to controller to turn off the light and light icon disappears.

Light on indication

◆assist level selection

Press +/- button to increase or decrease the assist level and change the motor output power. Level zero means no power assist output.



Assist level selection

◆motor power indication

The motor output power can be indicated by below interface.

Motor power indication

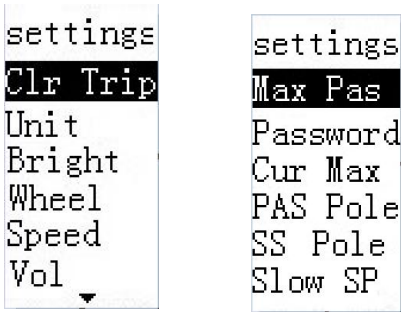
◆error code indication

The components of the E-bike system are continuously and automatically monitored. When an error is detected, the respective error code is indicated, refer to the detailed definition of the error codes in **Attached list 1**.

Error code interface

Settings

When speed is zero, at the main menu, **long press** i button to enter the setting interface. Press +/- buttons to choose the setting item. Press i to enter the corresponding setting or info page. Long press i button to exit the setting items interface and return to the main menu page. If there's no operations within 2 minutes, the display exit the setting page automatically.

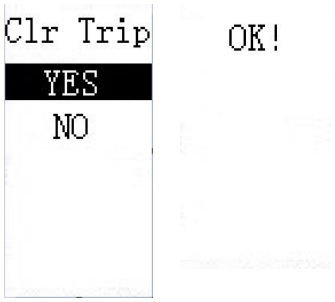


Setting items interface

◆**Trip Distance Clearance**

Clr Trip means trip clearance. Press the **+/-** button to choose YES or NO. The default value is NO.

To clear a trip, choose YES and press the i button to confirm. The screen says 'OK' and returns to the Settings interface.



Trip distance clearance

◆**Unit Mile/KM toggling**

Unit represents unit settings. The default value is Metric 'KM'

To toggle unit, press **+/-** until the desired unit is displayed.

To store a changed setting, press the **i** button to confirm. The screen says 'OK' and then returns to Settings interface.

Mile and Kilometer Toggling Interface

◆**Backlight Brightness Settings**

Bright represents backlight brightness settings. Level "1" is the low brightness, Level "3" is high brightness. The default level is "2".

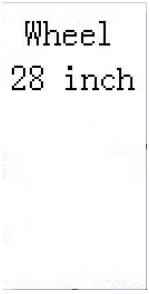
To change the backlight brightness, press the "+" button or the "-" button to choose the desired brightness.

To store a changed setting, press the "i" button. The screen says "OK" and returns to previous menu interface.

Backlight settings

◆**wheel size setting**

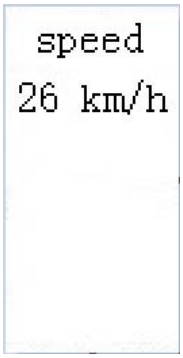
Wheel refers to wheel diameter settings. Press i to enter the setting page. According to new EU norms, WD value is not settable. Press i button and screen says OK and returns to the setting page.



Wheel size setting

◆ **speed limit info**

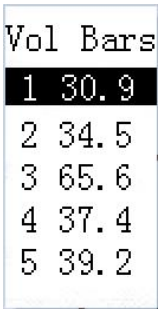
Speed means speed limit. Press i button to enter the speed limit info page. According to new EU norms, the speed limit value is not settable. It is only for your information. Press i and screen says OK and returns to the setting page.



Speed limit info

◆**Battery power bars settings (voltage segments)**

Vol Bars refers to battery power bars settings. Press i button to enter the setting page. Press +/- to change the values for each power bar. And press i to confirm and move the next power bar settings. After 5 values are completely set, press i button to save the setting and screen says OK and return to the setting page.

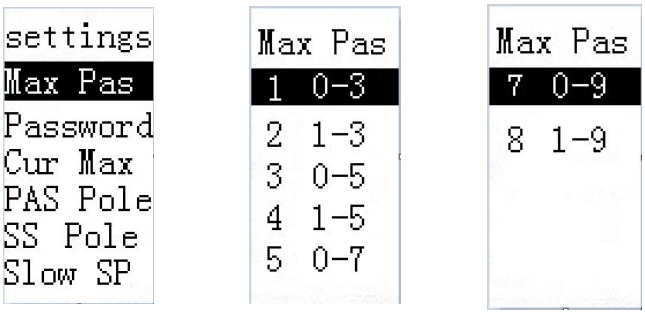


Battery power bars settings

◆**Assist level**

Assist level mode selection

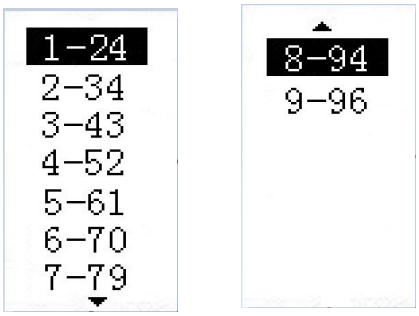
Max Pas refers to PAS parameters settings. Press i button to enter the setting page. 8 assist level modes are 0-3、1-3、0-5、1-5、0-7、1-7、0-9、1-9. Press +/- to choose the desired mode and press i button access to the corresponding assist level ratio info interface.



Assist level mode selection

PAS level ratio info

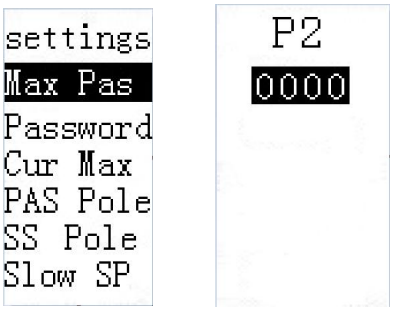
PAS level ratio refers to the power assist that can be engaged by a certain level. According to new EU norms, the value is not settable. **Long press** i button to return to the setting page. The PAS level ratio defaults are in the **attached list 2.**



PAS level ratio info

◆power-on password settings

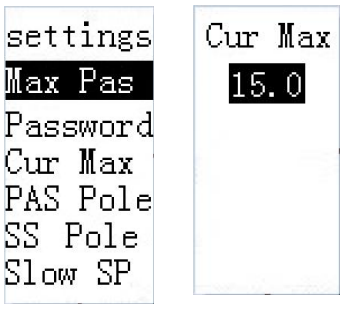
Password means power-on password settings. Press i button to enter “P2” interface and correctly input the current 4-digit password to get to the power-on password setting page. The default password is “1212” if not specified by the customer. At password setting interface, the first item is “password disable”, the second item is “password enable” and the third item is “change password”. Press +/- button to choose your desired item and press i to confirm(operation for changing a password is identical to inputting a password). The screen returns to the setting page after operation is done.



Power-on password settings

◆ Current limit

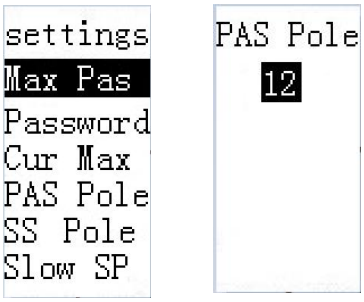
Cur Max means current limit. Press i button to enter the info page. According to new EU norms, current limit is not settable and it is only for your information. Press i and screen says OK and returns to the setting page.



Current limit info

◆**PAS sensor magnet numbers**

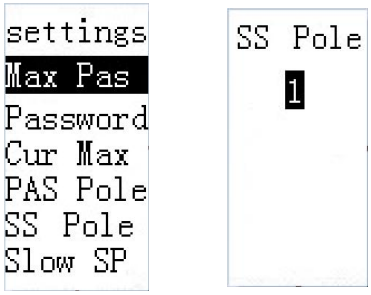
PAS Pole means the number of magnets in the PAS sensor. Press i button to enter the info page. According to new EU norms, PAS is not settable and it is only for your information. Press i and screen says OK and returns to the setting page.



PAS info

◆**Speed Sensor magnet numbers**

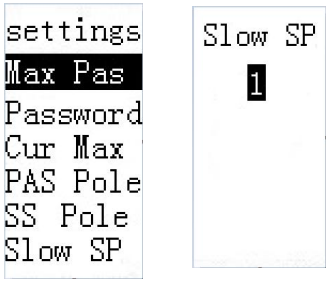
SS Pole refers to the number of magnets in the speed sensor. Press i button to enter the info page. According to new EU norms, SPS is not settable and it is only for your information. Press i and screen says OK and returns to the setting page.



SPS info

◆**Slowly Start Up**

Slow SP means slowly start up. Press i button to enter the info page. According to new EU norms, SSP is not settable and it is only for your information. Press i and screen says OK and returns to the setting page.



SSP info

Factory settings

When speed is zero, at the main menu interface, long press the i button and + button to enter the factory settings page. Choose “Yes” to restore to factory settings. The screen says OK and return to main menu page.

Factory settings

Quality Assurance and Warranty Scope

Ⅰ *Warranty*

1).The warranty will be valid only for products used in normal usage and conditions.

2).The warranty is valid for 24 months after the shipment or delivery to the customer.

Ⅱ *Others*

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.

Operation Cautions

●Be cautious. Don't attempt to disconnect the connector when battery is on power.

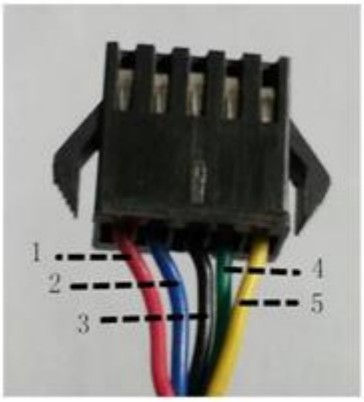
●Try to avoid hitting.

●Do not modify system parameters to avoid parameters disorder.

●Make the display repaired when error code appears.

wire connection layout

Standard connector wire sequence



Controller end

Display end

Mating connector to display end

Standard wire sequence table

Wire no.	Wire color(standard)	Function
1	Red(VCC)	Display power
2	Blue(K)	Controller power wire
3	Black(GND)	Display GND
4	Green(RX)	Display-RX
5	Yellow(TX)	Display-TX

■Some products have pin wire connection with waterproof connectors and users can not see the wire color inside the harness.

Attached list 1: Error code definition

Error code	Definition
21	Current fault
22	Throttle fault
23	Motor absence-phase fault
24	Motor hall fault
25	Brake fault
30	Communication failure
31	Short-circuited MOS tube
32	Sticky ON/OFF button
33	Sticky push-assist button
34	Over-voltage

Attached list 2: PAS level ratio defaults

Level / PAS range Selection	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%