KEY-DISP

The eBike Display

Users Manual

KD716

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Product Name and Model

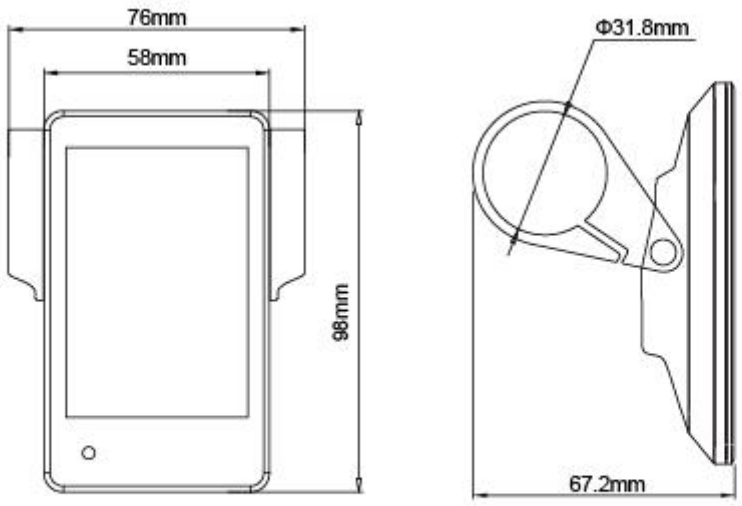
Intelligent LCD display of E-bike; model:KD716.

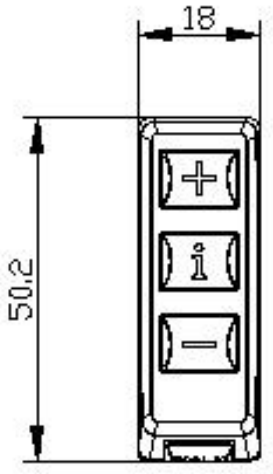
Specifications

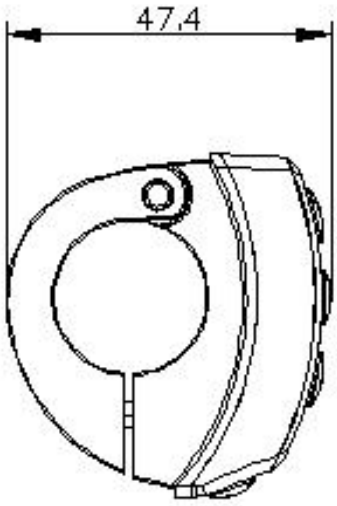
- ●Rated voltage: 24V/36V/48V
- ●Rated working current: 10mA
- ●Max. working current: 30mA
- ●Off leakage current: <1uA
- ●The supply controller working current: 50mA
- ●Operating temperature: -20℃~ 60℃
- ●Storage temperature: -30℃~ 70℃

Appearance and Size

Display appearance and dimension figure (unit: mm)







Function Summary

◆Function Summary

KD716 can provide a lot of functions to fit the users' needs. The indicating contents are as follows:

- ●Smart battery indicator
- ●Assistance-level indication
- ●Speed indication (incl. Running speed, Max. speed and Ave. speed)
- ●Odometer and trip distance
- ●The push-assistance function
- ●Trip time indication
- ●Backlight On/Off

●Error code indication

●Motor-output indicator

●Motor-output indication (optional)

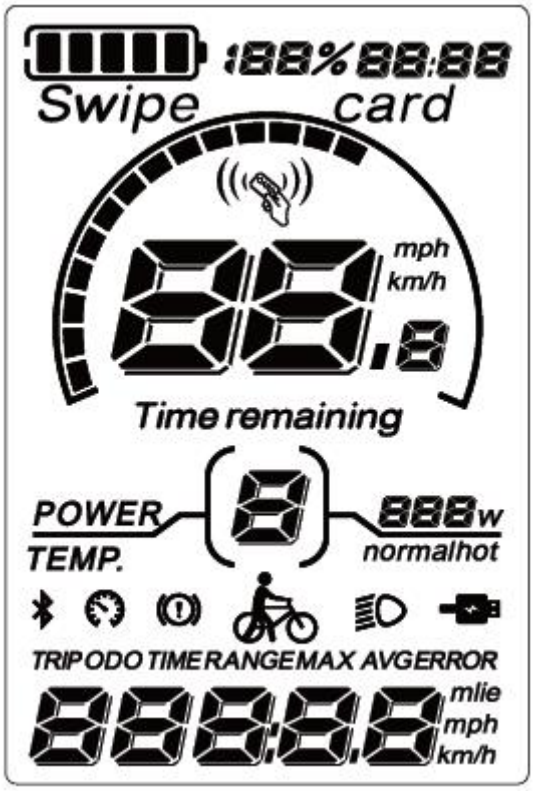
●Pedaling frequency indication (optional)

●The remaining range indication (optional)

●Various parameters settings (e.g., wheel size, speed-limited, battery level bar, assistance level, controller limited current, max speed, password enable, etc.)

●Recover default settings

◆Functional Area Distribution



Functional Area Distribution

General Operation

◆Switching the E-bike System On/Off

Briefly press the power button to switch on the E-bike system, to hold the power button for 2s, the E-bike system will be switched off.

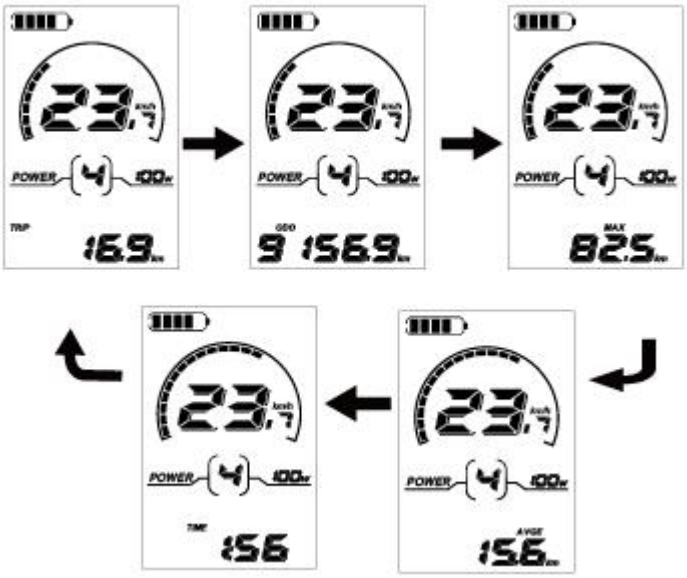
When switching off the E-bike system the leakage current is less than 1 uA.

■ **When parking the E-bike for more than 10 minutes, the E-bike system switches off automatically.**

◆Display Interface

After switching on the E-bike system, the display will show Speed and Total Distance. Pressing the “i” button will show more riding data as belows: Running Trip Distance (Km)

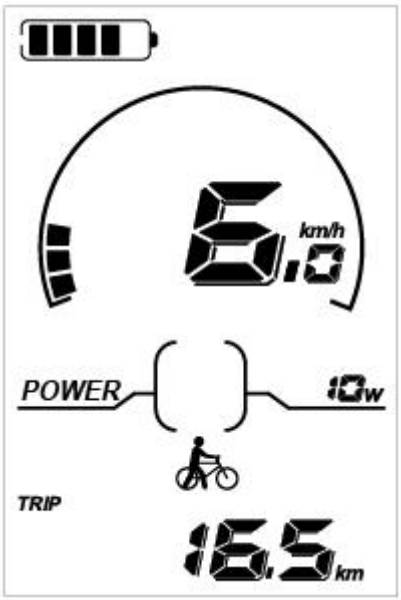
→Total Distance (Km) → Max. Speed (Km/h) →Ave. Speed (Km/h)→Trip Time (Min.) .
→Trip Distance (Km)



◆Switching Push-assistance Mode On/Off

To activate the push-assistance function, hold the "-" button always. The E-bike's drive is activated at a uniform speed of 6 Km/h.

The push-assistance function is switched off as soon as you release the "-" button on the operating unit.



Push-assistance Mode

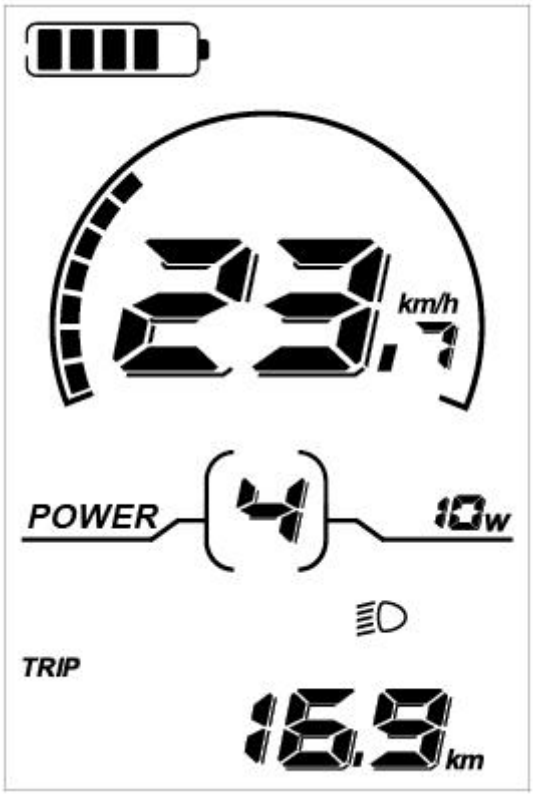
■ **Push-assistance function may only be used when pushing the E-bike. Danger of injury when the wheels of the E-bike do not have ground contact while use the push- assistance function.**

◆Switching the Lighting On/Off

To switch on the lighting (headlights, taillights and display backlight), briefly press the

“ ” button. In the same way to press the “ ” button, the lighting can be switched off.

If the headlights or taillights is independent of the switch, the “ ” button can only be used as a backlight switch.



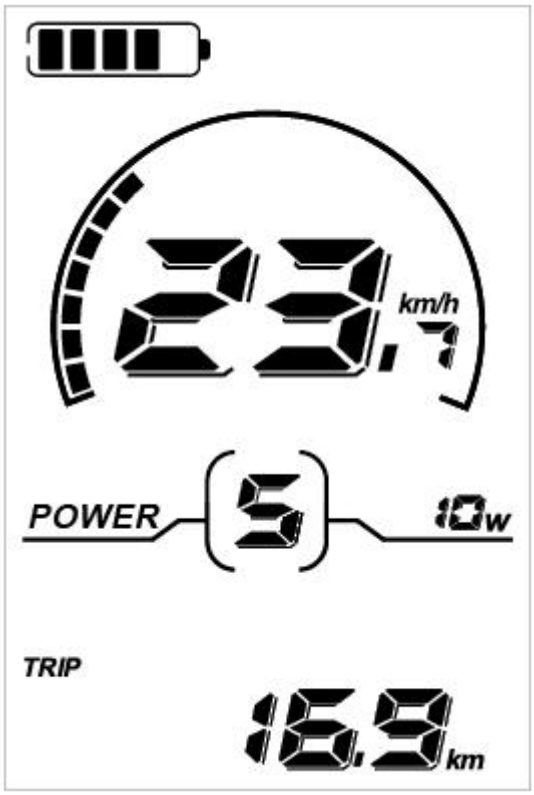
Switching the Lighting Mode On/Off Interface

◆Assistance Level Selection

The level of assistance of the E-bike drive when pedaling can be adjusted via the display. The assistance level can be changed anytime, even during riding.

The default assistance level ranges from level “0” to level “5”.The output power is zero on Level “0”. Level “1” is the minimum power. Level “5” is the maximum power.

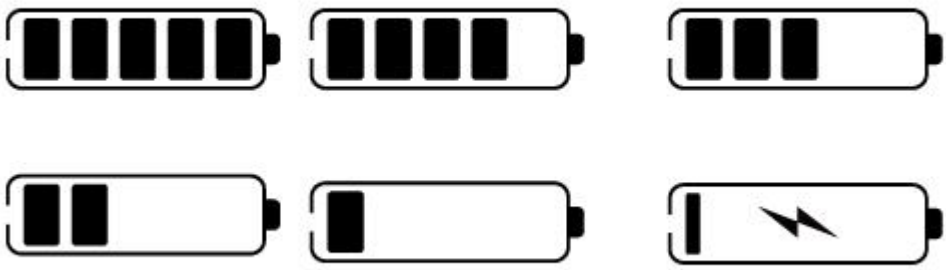
To increase the assistance level, press the “+” button until the desired assistance level is displayed; to decrease the assistance level, press the “-” button. The default value is level “1”.



Assistance Level “5”

◆Battery Indicator

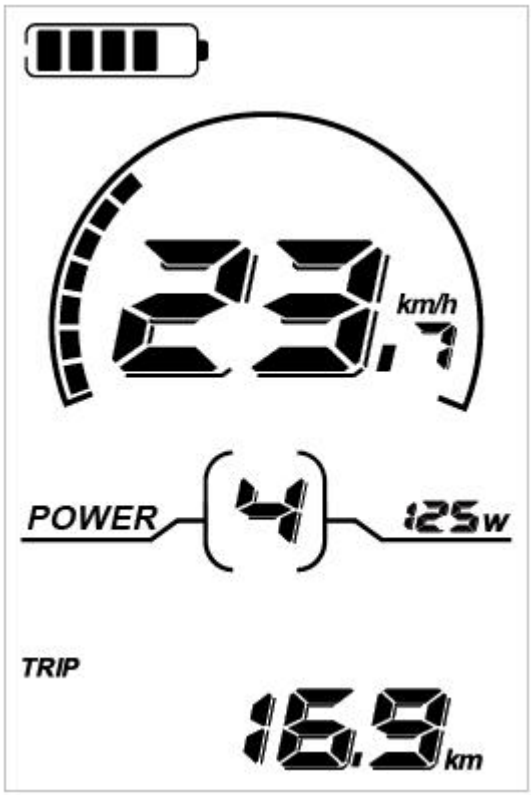
The five battery bars represent the capacity of the battery. Each bar of the battery pack symbol is equivalent to a capacity of approx. 20%. When the battery is in low voltage, battery frame will flash to notice that the battery needs to be recharged immediately.



Battery Indicator

◆Motor Power Indicator

The power of the motor can be read via the interface.

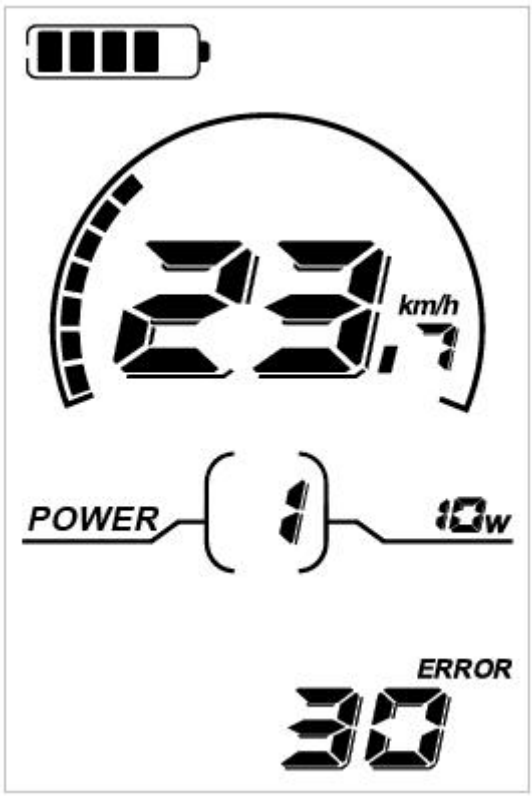


Motor Power Indication

◆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 in text indication area.

Here is the detail message of the error code in **Attached list 1**.



Error Code Indication

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

General Settings

To access general settings menu, hold both the “+” button and the “-” button for 2s.

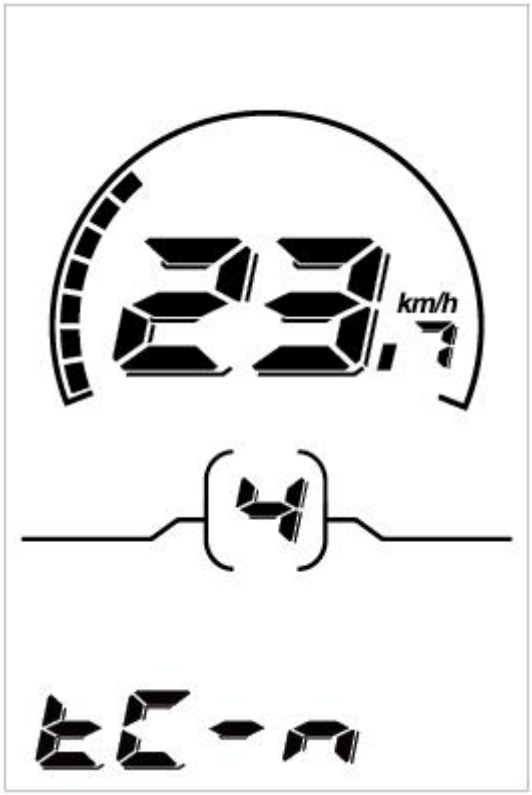
■ **All the Settings are operated in the case of parking the E-bike.**

◆Trip Distance Clearance

TC represents trip distance clearance setting.

To clear trip distance, press the “+” button or the “-” button until the Y is displayed.

To store a changed setting, press the “i” button and then access backlight contrast settings.



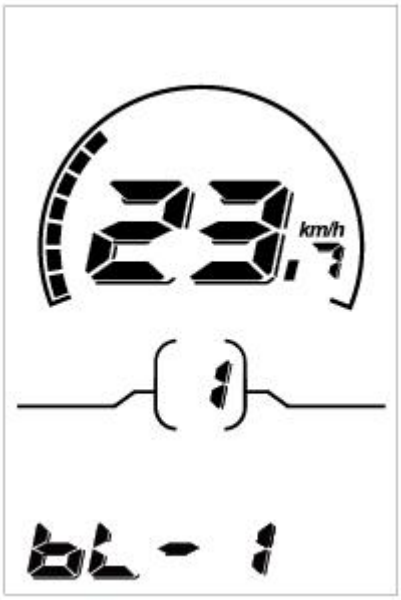
Trip Distance Clearance Settings Interface

◆Backlight Contrast Settings

bL represents backlight contrast settings. Level “1” is the low brightness, Level “2” is the middle brightness, Level “3” is high brightness. The default level is “1”.

To modify the backlight brightness, press the “+” button or the “-” button to choose the desired setting item.

To store a changed setting, press the “i” button and then access the unit Conversion Settings.



Backlight Brightness Settings Interface

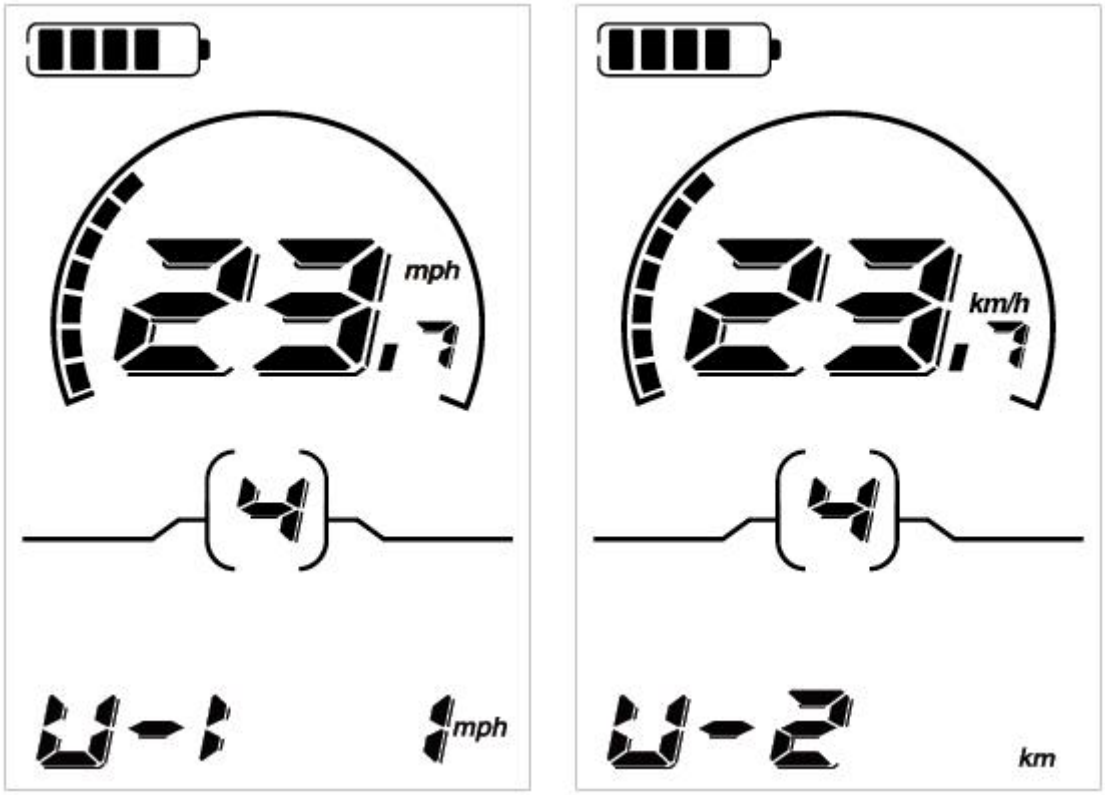
◆Unit km/mi Conversion

U represents unit settings, “1” is mile and “2” is kilometer. The default value is “2”.

To convert unit, press the “+” button or the “-” button to choose the desired setting item, and then press the “i” button to confirm.

To store a changed setting, press the “i” button and then access trip distance clearance settings.

To store a changed setting, hold the “i” button for 2s and then exit general settings.



Mile and Kilometer Conversion Settings Interface

General Parameter Settings

To access general parameter Settings interface, hold both the “+” and the “-” button for 2s.

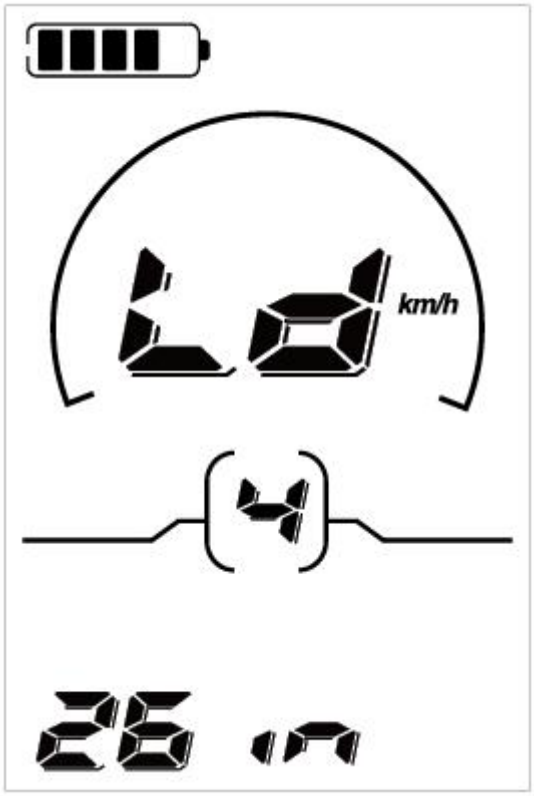
To access Wheel Diameter Settings, then hold both the “-” and the “i” button for 2s again.

◆Wheel Diameter Settings

Ld represents wheel diameter settings. Electable values include 16, 18, 20, 22, 24,26, 700C and 28.

To change basic settings, press the “+” or the “-” button to increase or decrease until the desired value is displayed.

To store a changed setting, press the “i” button. Then access the speed-limit settings interface. The default value is 26 inch.



Wheel Diameter Settings Interface

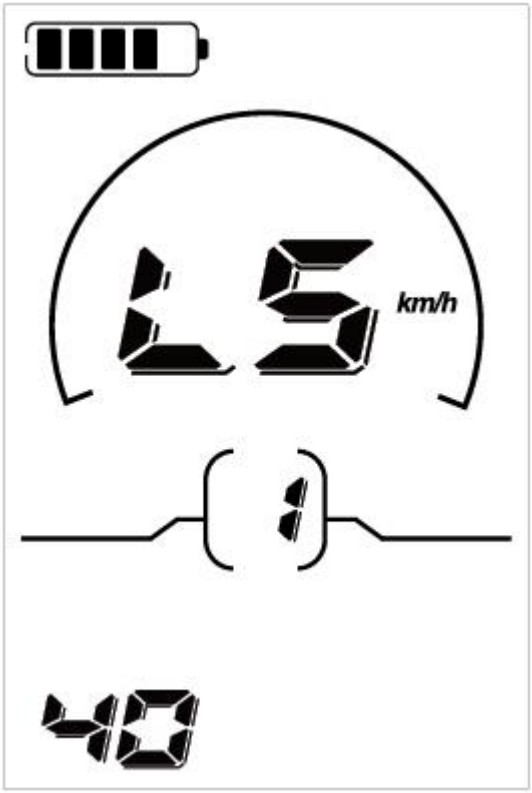
◆Speed-limit Settings

LS represents the limit speed settings. When the current speed is faster than speed limit, the E-bike system will switch off automatically. Speed limit range is 12Km/h to 40Km/h.

The default value is 25Km/h.

To change basic settings, press the “+” or the “-” button to increase or decrease until the desired value is displayed.

To store a changed setting and exit General Parameter Settings, hold the “i” button for 2s.



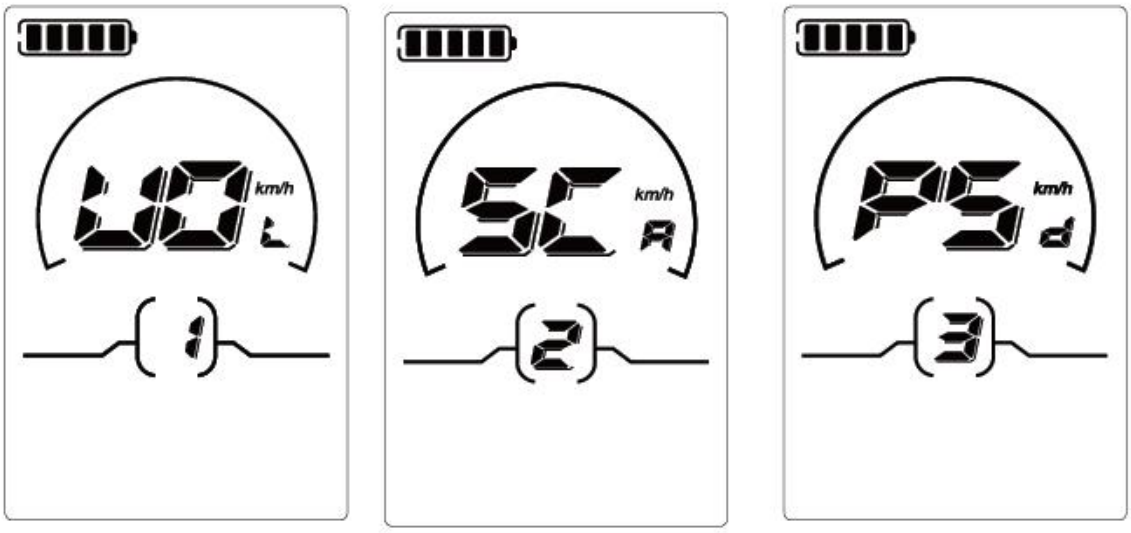
Limit Speed Settings Interface

Personalized Parameter Settings

Personalized Parameter Settings can match variety requirements in use. In order to meet the individual requirements of the customer, set the personalized settings, **the Key Display work under different protocols, support the settings of different optional items.** There are 8 settings items, such as Battery Power Bar Settings, Power Assistant Level Settings, Over- current Cut Settings, Power Assistant Sensor Settings, Speed Sensor Settings, Throttle Function Settings, System Settings and Power-on Password Settings.

To access Personalized Parameter Settings items option page, hold both the “+” and the “-” button for 2s, then hold both the “+” and the “-” button for 2s again.

To access the corresponding settings page, press the “+” or the “-” button to increase or decrease until the desired item is displayed, and then press the “i” button to confirm.



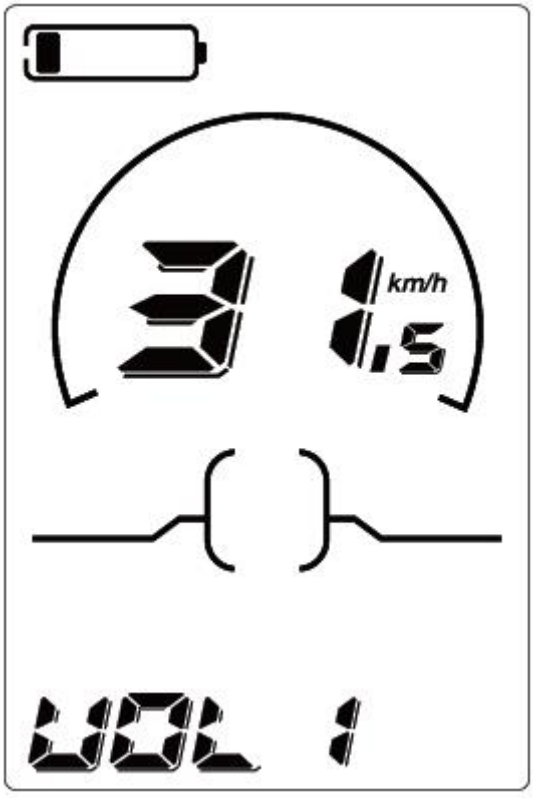
Options Selection Interface

◆Battery Power Bar Settings

VOL represents voltage settings. Each bar represents a voltage value. 5 bars voltage values must be entered one by one. For example, VOL 1 is first bar voltage value. The default value is 31.5V.

To set battery power bar, press the “+” or the “-” button to increase or decrease the number. To store a changed setting and access the second bar, press the “i” button.

By analogy, after 5 bars voltage values is entered, hold the “i” button to confirm and then return to the previous menu.



Battery Power Bar Settings

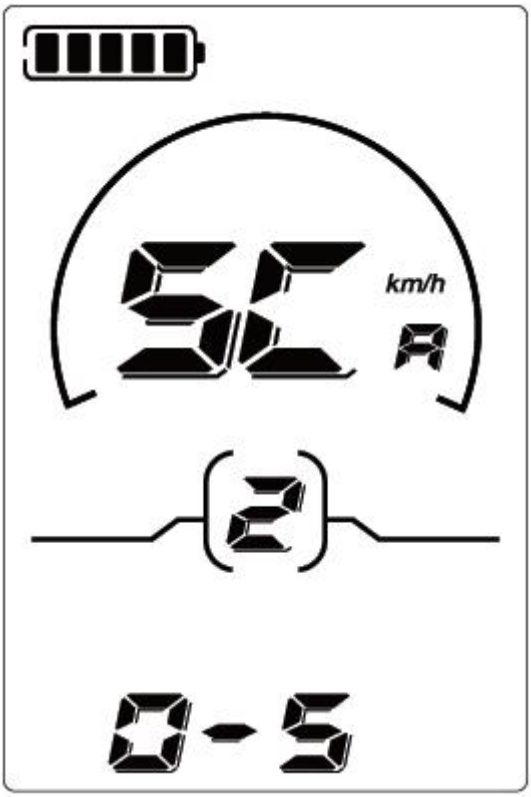
◆Assistance Level Settings (optional)

Assistance Level Option

In assistance level settings, there are 8 modes to select：0-3, 1-3, 0-5, 1-5, 0-7, 1-7, 0-9, 1-9. The default value is 0-5.

In assistance-level settings, there are 8 modes to select：0-3, 1-3, 0-5, 1-5, 0-7, 1-7, 0-9, 1-9. The default value is 0-5.

To change the mode of assistance-level, press the “+” or the “-” button to choose the desired mode, and then press the “i” button to confirm, then access the PAS ratio settings page automatically.



PAS Mode Option Interface

PAS Ratio Settings

To modify the value of PAS ratio, press the "+" button or "-" button to choose the desired value, and then press the "i" button to confirm

For example, the range is “45-55 percent” of “1” level, bottom value can be modified, and the default value is 50 percent.

To store the modified setting, press the “i” button and turn to the next PAS ratio settings.

After all PAS ratio inputted, hold the “i” button for 2s to confirm and then return to previous menu. Please refer to **Attached list 2**.

PAS Ratio Interface

◆Controller Over-current Cut Settings (optional)

CUR represents controller over-current cut settings. CUR value can be changed from 7.0A to 25.0A. The default value is 15A.

To change basic settings, press the “+” or the “-” button to increase or decrease the value of the current.

To store a changed setting, hold the “i” button and then return to previous menu.

CUR Settings Interface

◆Power Assistant Sensor Settings(optional)

The Direction of PAS Settings

PAS represents power assistant sensor settings. “run-F” means forward direction, while “run-b” means back direction. The default value is “run-F”.

To change The Direction of Power Assistant Sensor Settings, press the “+” or the “-” button to select F or b.

To store a changed setting, press the “i” button and then access settings mode of PAS sensitivity.

Direction of PAS Sensor Settings

The Sensitivity of PAS Settings

SCN represents the sensitivity of PAS settings. The sensitivity value is “2” to “9”. “2” is the strongest, “9” is the weakest. The default value is “2”.

To change the sensitivity of PAS settings, press the “+” or the “-” button to select sensitivity value.

To store a changed setting, press the “i” button and then access magnet disk settings mode.

The Sensitivity of PAS Settings

◆Magnet Quantity Settings

n represents magnet numbers of PAS disk. The default value is 6.

To change magnet numbers of PAS disk, press the “+” or the “-” button to select quantity corresponding to PAS disk.

To store a changed setting, hold the “i” button and then return to previous menu.

PAS Magnet Disk Settings

◆Speed Sensor (optional)

SPS represents speed sensor settings. The default value is 1

To change speed sensor settings, press the “+” or the “-” button to select the quantity of magnet head (the range is from 1 to 15).

To store a changed setting, hold the “i” button and then return to previous menu.

Speed Sensor Selection

◆Throttle Definition (optional)

Throttle Push-assistance Enable/Disable

HL represents throttle push-assistance function. HL-N represents throttle assistance push function is disabled. HL-y represents throttle assistance push function is enabled. The default value is N.

To change throttle push-assistance function, press the “+” or the “-” button to select Y.

To store a changed setting, press the “i” button.

Otherwise, to select N and then access Throttle Level Enable Settings.

Throttle Enable/Disable Interface

Throttle Level Enable/Disable

HF-y represents throttle level enabled, HF-N represents throttle level is disabled. The default value is N.

To change throttle level function, press the “+” or the “-” button to select Y or N and then press the “i” button to confirm, then access Throttle Enable Settings page.

To return to previous menu, hold the “i” button for 2s.

Throttle Level Enable or Disable Interface

System Settings (optional)

◆Delay Time Settings of Battery Power

DLy represents delay time of battery power settings. The default value is 3s.

To change delay time settings, press the “+” or the “-” button to select delay time 3s, 6s, 12s.

To store a changed setting, press the “i” button and then access the max speed limited.

Delay Time of Battery Power Interface

◆Max Speed Limited

LS represents max speed limited settings. The default value is 40Km/h.

To change Max speed limited setting, press the “+” or the “-” button to set the max speed from 25Km/h~40 Km/h.

To store a modified setting, press the “i” button and then access Button PAS Settings.

Interface of Max. Speed Limited Settings

■ **This setting is the priority version. The speed is the maximum set by manufacturer.**

◆Button Push-assistance Enable/Disable

PUS represents button push-assistance settings. Y represents button push is enabled, N represents button push is disabled. The default value is Y.

To change button push-assistance settings, press the “+” or the “-” button to choose Y or N.

To store a changed setting, press the “i” button and then access PAS speed settings.

Interface of Push-assistance

◆PAS Speed Settings

To change PAS speed settings, press the “+” or the “-” button to adjust from 20% to 35%.

To store a modified setting, press the “i” button and then access slowly start up. The default value is 25%.

Interface of PAS Speed Settings

◆Slowly Start Up Settings

SSP represents slowly start up The range is “1-4”, “4” is the slowest. The default value is “1”.

To change slowly start up settings, press the “+” or the “-” button to select the desired value.

To store a modified setting, press the “i” button and then turn to Delay time settings of

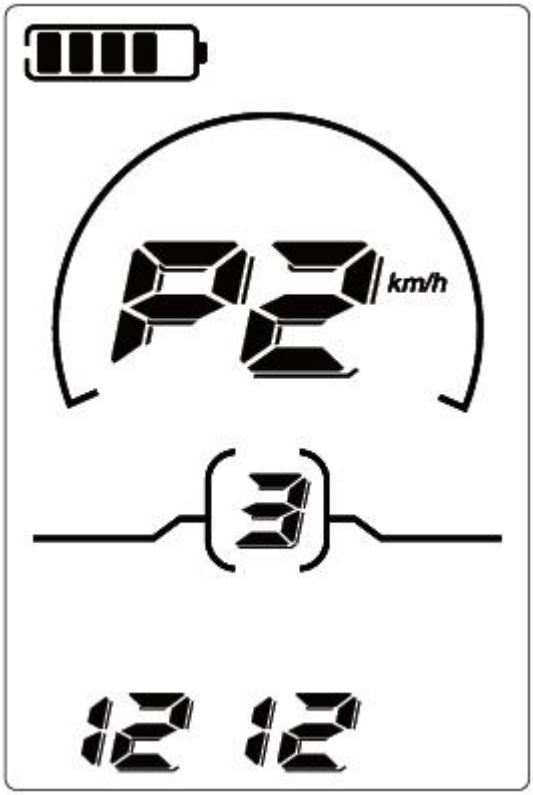
battery power page To return to previous menu, hold the “i” button for 2s.

Interface of Slowly Settings Up

◆Power-on Password Settings

P2, 0000 on the screen means power-on password settings. The password is 1212.

To access the power-on password settings, press the “+” or the “-” button to modify the value and then press the “i” button to confirm digit one by one until the correct 4-digit password is completed, and then press the “i” button to access power-on password enable settings interface, otherwise stay on the password input state.



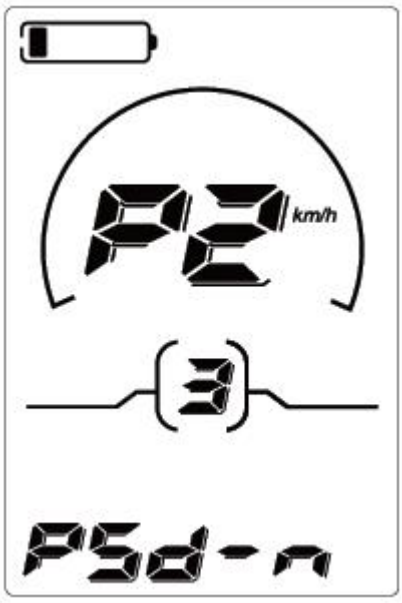
Power-on Password Entering Interface

◆Power-on Password Enable/Disable

To change power-on password enable/disable settings, press the “+” or the “-” button to select Y or N.

If it is Y, press the “i” button and then access power-on password modify interface, otherwise exit the power-on password settings interface. The default value is N.

Y is power-on password enable. N is power-on password disable.



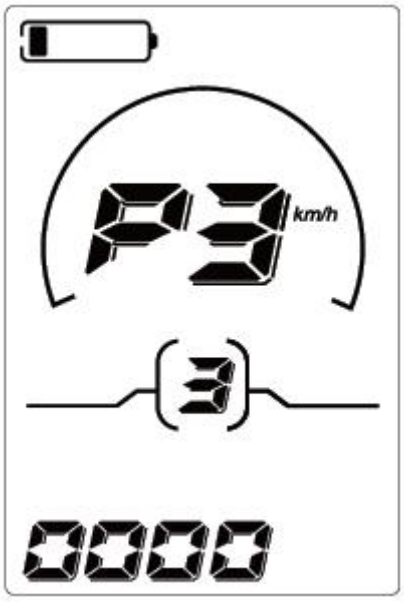
Power-on Password Disable Interface

◆Power-on Password Modify

When the display shows P3, 0000, to set new power-on password, press the “+” or the “-” button to modify the value and then press the “i” button to confirm digit one by one until the new 4-digit password is completed.

To store the new power-on password, hold the “i” button for 2s and then exit settings.

When switching the E-bike system on next time, the display will show P1,0000, please input the new password to power on.



Power-on Password Modify Interface

◆Exit Settings

In the settings state, press the “i” button is to confirm the input. Hold the “i” button is to store the settings, and then exit the current settings. Hold the “-” button is to cancel the operating but not storing settings data, and then return to previous menu.

■ **If there is not any operations in one minute, the display will exit the settings state.**

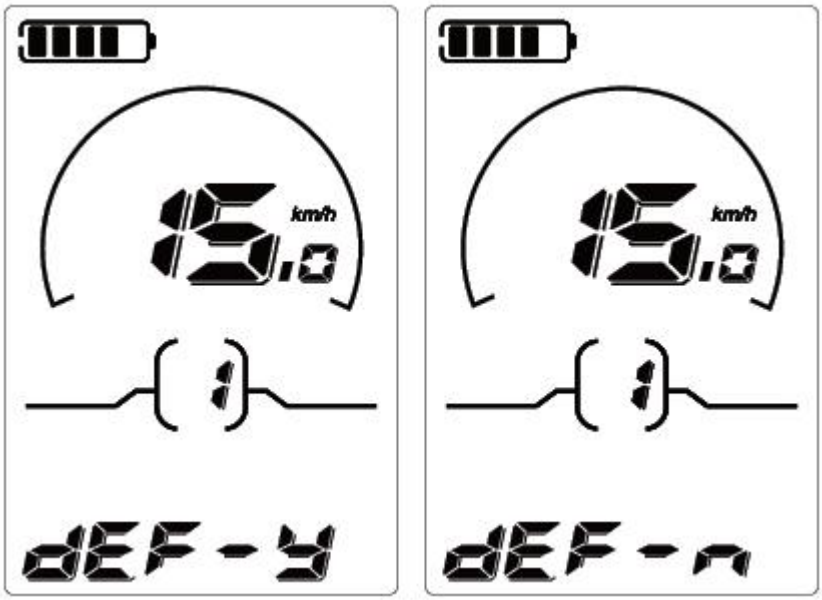
Recover Default Settings

dEF represents recover default settings. The default value is N.

To access recover default settings, hold both the “+” and the “i” button for 2s.

Press the “+” or the “-” button to choose Y or N again. N means that do not recover default settings. Y means that recovers default settings.

When it is Y, hold the “i” button for 2s to recover default settings; the display shows DEF-00 at the same time, and then return to general display state.



Recover Default Settings Interface

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 items 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.

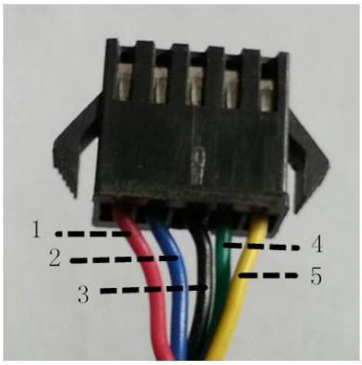
（4）Wire of the display is broken.

（5）Beyond Warranty period.

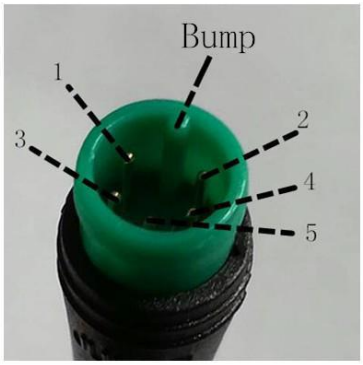
（6）The fault or damage of the display is caused by the force majeure (e.g., Fire, Earthquake, etc.).

Connection Layout

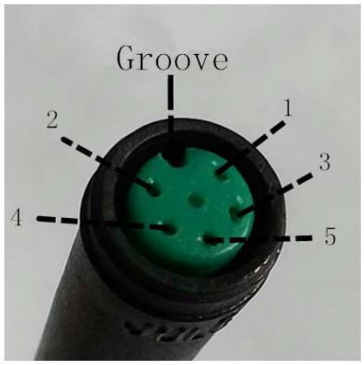
Connector line sequence



Display-side Connector



Display-side adapter



Switch wiring

Line sequence table

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

■ **Some wire use the water-proof connector, users can not see the inside color.**

Operation Cautions

Be careful of safe use.Don't attempt to release 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.

■ **This operating instruction is a general-purpose version. 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	Definition
21	Current Abnormality
22	Throttle Abnormality
23	Motor Abnormality
24	Motor Hall Signal Abnormality
25	Brake Abnormality
30	Communication Abnormality

Attached list 2：Power assist table

el Lev									
0-3/1-3	5	7	9						
0-5/1-5	5	6	7	8	9				
0-7/1-7	4	5	6	7	8	9	9		
0-9/1-9	2	3	4	5	6	7	7	8	9