DZ47 instrument
Technical Specification

Product name: Intelligent LCD instrument

Product model number: DZ 47

	sign one's name	date
authorized strength		
examine and verify		
ratify		

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A product introduction

1 Product name and model number

Intelligent LCD instrument, model: DZ 47

2 Product profile

- ✧ Calm atmosphere, detachable installation bracket design
- ✧ High-brightness 2-inch segment code LCD screen.2
- ✧ Excellent outdoor design IPX-5 grade waterproofing capability
- ✧ Waterproof head serial port communication interface, convenient maintenance service
- ✧ Automatic headlights can be turned on

3 Scope of use

Suitable for electric assisted bicycles that meet EN15194 regulations

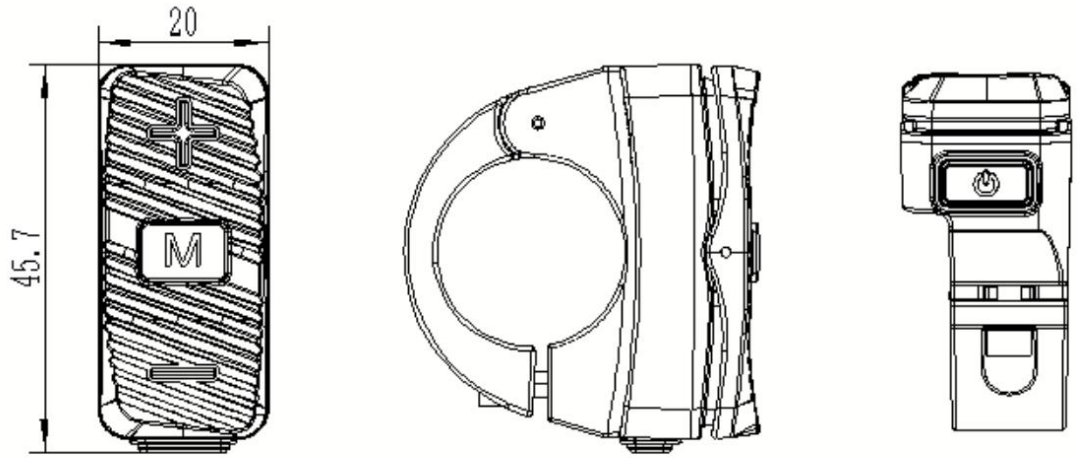
4 Appearance and size

The product shell material is ABS, and the panel is a glass window

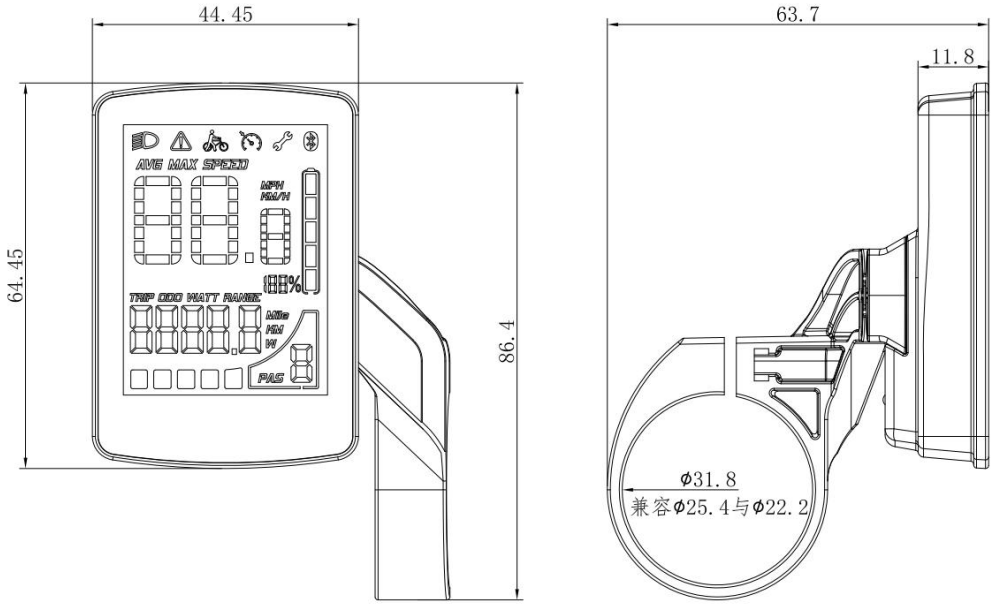


4.1 Size of the key profile

(Optional model switch)



4.2 Instrument external dimensions



5. Instrument encoding rules

DZ47
48V/27.5
22120501440001

Label diagram, generally posted on the back of the product.

Printing rules: divided into three parts

Part 1: Product model number. Example: DZ 47

Part II: Voltage grade / wheel diameter information. Example: 48V / 27.5

Part 3: Serial number: 14 digits, composed of order code + product serial number. Order code 12 bits, MO2212050144, after 10 bits information + serial number (4 digits), the whole SN information from 0001 to 9999.

Example: 22120501440001

Two product description

1 Specifications and parameters

① Power supply: DC 24V / 36V / 48V

② Rated current: 42 mA / 36V

③ Shutdown leakage current: <1 uA;

④ Screen size: 2-inch LCD (VA).2

⑤ Communication mode: support UART and CAN bus

⑥ Used temperature: -20° C ~ 60° C

⑦ Storage temperature: -25° C ~ 70° C

⑧ Protection level: IP X 5

2 Functional overview

① Four keys, convenient operation

② Support boot password, cruise speed, automatic headlights

③ Metric / British switching options

④ Mileage display: subtotal mileage (TRIP), total mileage (ODO)

⑤ Speed display: real-time speed (SPEED), maximum speed (MAX), average speed (AVG)

⑥ Gear control: Default 0-5 (maximum 9, number of gears optional)

⑦ Six-level power indication: 1-5 power, and undervoltage prompt

⑧ Headlamp indicator: Headlamp switch status indicator (controller support is required)

⑨ Motor power display: real-time display of motor output power (segment display and numerical display)

⑩ 6km / h to facilitate the implementation of the function

⑪ System maintenance instructions: prompt the maintenance information according to the cycling distance and the charging cycle times

⑫ Connecting the communication interface for easy system maintenance and parameter setting

⑬ Fault code indication

3 Installation method

① According to the diameter of the pipe, select the corresponding installation bracket and rubber clip ring (applicable pipe specifications: Φ 22.2, Φ 25.4, Φ 31.8), open the instrument lock clamp, and then trap the rubber clamp into the correct position of the lock clamp.

② The instrument mounting bracket and the rubber ring are then set in the middle of the cross to adjust the instrument Angle to make it easier to see the instrument screen when riding. After determining the angle, tighten the screws. Lock-tight moment: 0.8N.m

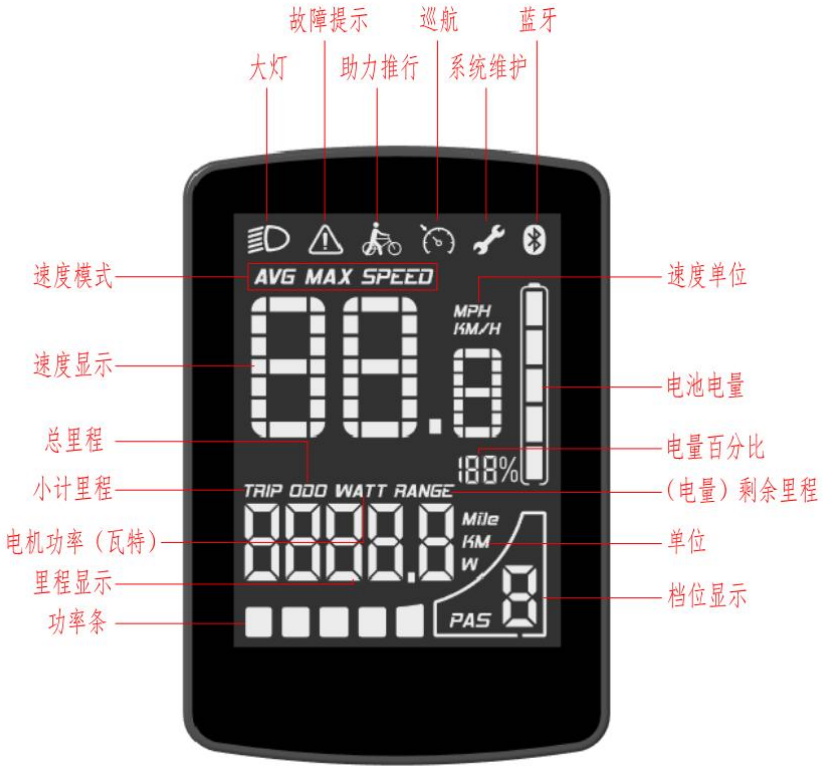
③ Open the control switch lock ring and set it in the appropriate position on the left side of the switch, adjust the switch Angle to make the switch easier to see and operate when riding (applicable for the handle pipe with outer diameter Φ 22.2)

④ Secure and tighten the handle fixing screw with the M 3 inner hexagon wrench. Lock-tight moment: 0.8N.m

⑤ Connect the instrument connector with the controller connector according to the mark.

Note: Instrument damage caused by excessive torque is not covered by the warranty.

4 Display interface



① Headlights: display when the headlights are on; when the headlights are off or without this function, the icon is not displayed;

② Fault prompt: when the system fails, no fault;

③ Help implementation: help implementation display, the rest of the state is not shown;

④ Cruise mode: display after the constant-speed cruise control function is enabled;

⑤ When the system needs maintenance, (if the mileage exceeds the set value or the battery cycle number reaches the set value, the customer does not required);

⑥ Bluetooth connection: instrument display when Bluetooth is connected to the mobile phone; (whether with Bluetooth function);

⑦ Speed mode: SPEED indicates the speed indicates the current speed, AVG SPEED indicates the average speed, MAX SPEED indicates the speed indicates the maximum speed;

⑧ Speed display: boot state, display speed value, two digits including one

decimal place;

⑨ Speed unit: display speed unit, KM / H km / h, MPH mph;

⑩ Battery power: five battery levels and undervoltage indication;

⑪ Power percentage: displays the current battery percentage value;

⑫ Total mileage: total mileage, Mile or KM;

⑬ Subtotal mileage: Display subtotal mileage; per Mile or KM;

⑭ Motor power (watt): motor power value display (unit: watt);

⑮ (Electricity) residual mileage: residual mileage display; Mile or KM;

⑯ Mileage display: display the mileage value, the subtotal mileage is accurate to one decimal point, the total mileage is accurate to the single digit;

⑰ Units: subtotal mileage, total mileage, motor power, remaining mileage units, Mile for miles, KM for km, W for watt;

⑱ Power bar: five paragraphs of real-time display, motor power bar;

⑲ Gear display: displays the current power gear.

5 Key definition



Open key:⏻, mode key:M, adjustment key:+, regulation key:−

6 Normal operation

6.1 Turn on / off

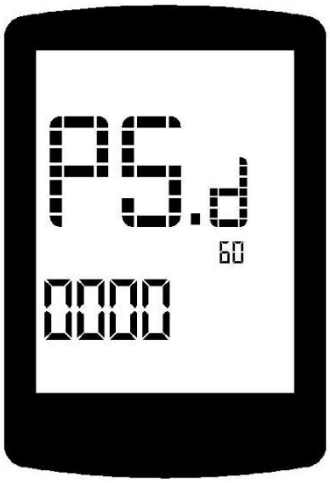
Normal boot:

Maintain the normal connection between the instrument and the controller, with the instrument shutdown state long button ⏻(1 second), the instrument displays the opening interface, then enter the cycling interface and start working; in the startup state long button⏻ (1 second), the instrument closes. If the rider does not operate the meter for 5 minutes after startup (speed is 0), the meter will automatically turn off.

With startup password:

Maintain the normal connection between the instrument and the controller, long button⏻ (1 second), the instrument enters the boot password interface, which is in the beating state, press the first password number to change, short press, confirm the first password number, and start the instrument correctly; if the password is wrong, the password shall be entered within 1 minute, otherwise the instrument is closed, and the long button for 30 seconds can reset the boot password to "7096"). Enter the password (1 second) during the long button, and the meter is off. If the rider does not operate the meter for 5 minutes after startup (speed is 0), the meter will automatically turn off.＋—MM⏻

The display interface is as follows:



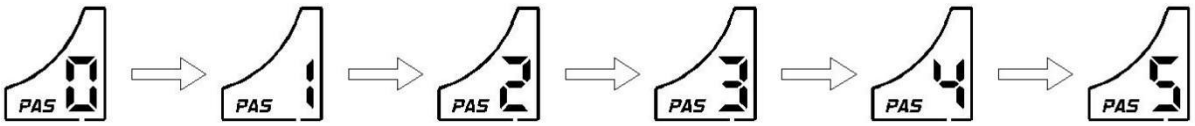
Boot up the password interface



Reset the boot password successfully

6.2 Power-assist gear switch

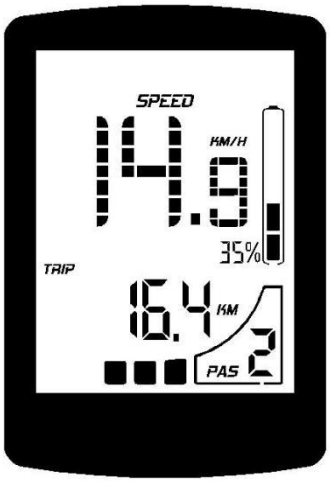
+—Press or, switch the power gear, change the power mode, (default) there are 6 modes: 0 / 1 / 2 / 3 / 4 / 5, (number of open gear) default 0 gear under the instrument boot state, display 0 gear is no power file.(The power gear selection interface is shown below)



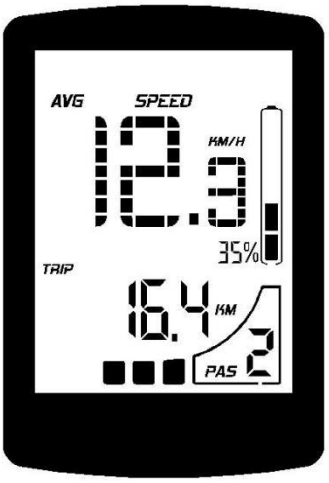
6.3 Display the information switch

MUnder the startup state, you can switch the display information of subtotal mileage and total mileage, and the cycle display is: current speed / subtotal mileage (TRIP) -> current speed / total mileage (ODO).

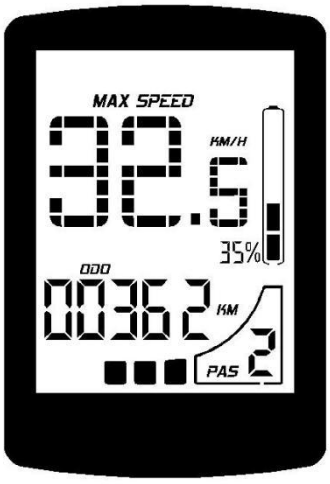
The mode switching interface is shown below:



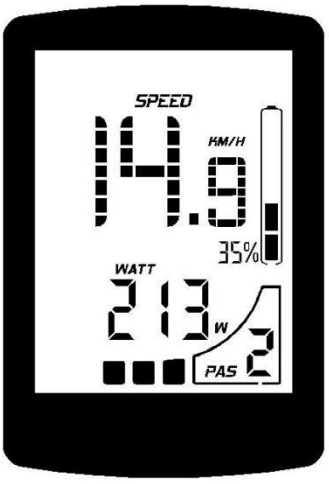
Current speed / sub-total mileage (TRIP) / power



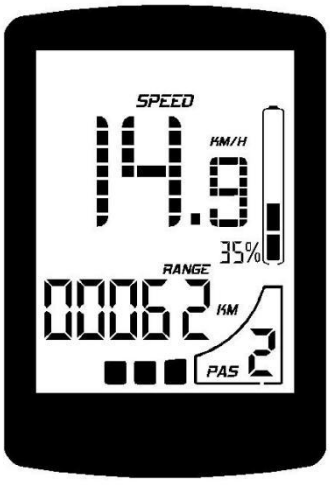
Average speed / subtotal mileage (TRIP) / power bar



Maximum speed / total mileage (ODO) / power bar



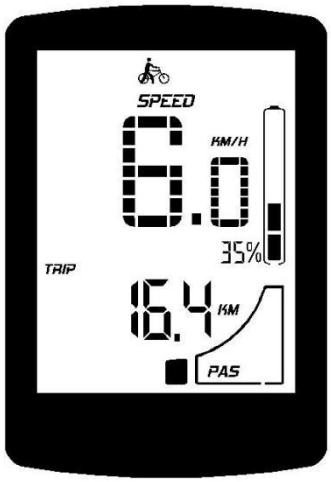
Current Speed / Motor Power (WATT) / power bar



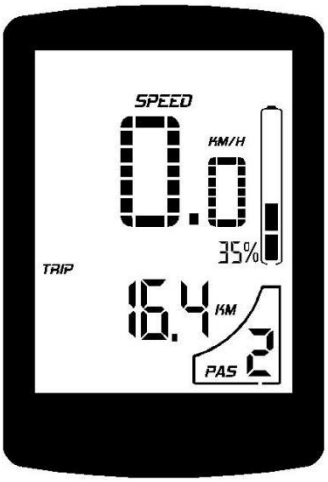
Current speed / remaining mileage (RANGE) / power bar

6.4 Help the implementation mode

—🚲—Long press, 2 seconds later, enter the power implementation state, display, release, that is, exit the power implementation mode, return to the normal display interface. The interface of assisted implementation mode switching is as shown below (only in the implementation state):



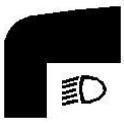
Help implement the model



normal mode

6.5 Headlamp switch

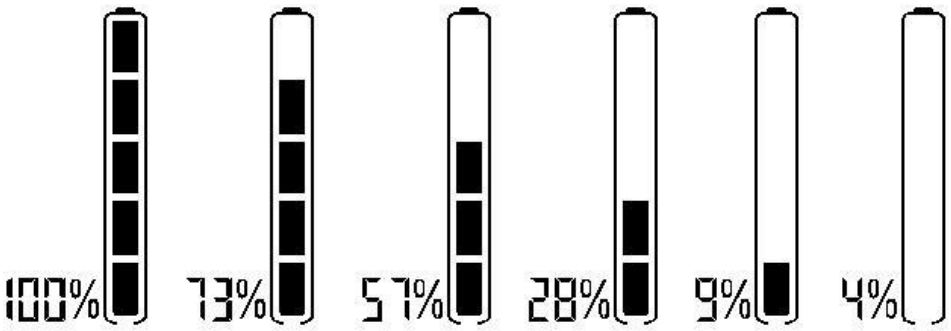
＋After 1 second, the headlight is on (requiring controller support), the instrument display interface, the headlight indicator icon is on; press the long button again. After 1 second, the headlight is off and the headlight indicator icon is off.＋



6.6 Electric quantity display

When the battery level is normal, the 5 LCD of the battery is displayed according to the time level and the outer frame is lit. When the battery is exhausted, the 5

LCD of the battery is completely out and the outer frame flashes, which needs to be charged immediately. The battery level is shown below:



Battery level (C) shows the corresponding table (power indication can be adjusted according to demand)

order number	On the Instrument (SOC)	The instrument shows	Voltage (24V)	Voltage (36V)	Voltage (48V)
1	C≤5%	The outer frame of the battery flashes	U≤23.1	U≤33	U≤42.9
2	5%<C<20%	A grid of electricity	23.1<U<24.5	33<U<34.7	42.9<U<45.1
3	20%≤C<40%	Two grid of electricity	24.5≤U<25.1	34.7≤U<35.8	45.1≤U<46.5
4	40%≤C<60%	Three grid of electricity	25.1≤U<25.6	35.8≤U<36.7	46.5≤U<47.5
5	60%≤C<80%	Four grid of electricity	25.6≤U<27	36.7≤U<38.5	47.5≤U<50.1
6	C≥80%	Five grid of electricity	U≥27	U≥38.5	U≥50.1

7 User Settings

Set items: unit setting, automatic shutdown time setting, automatic brightness adjustment setting, automatic headlight setting, startup password enabling setting, startup password setting, * wheel diameter information, speed limit mode setting, * speed limit information, * battery information

(Type * for the display items, the user setting option is not provided by default)

7.1 Enter the Settings

- ✧ MWithin 10 seconds, long press (3 seconds), the system enters the user setting state, under which the relevant parameters can be viewed and set;
- ✧ Long press (3 seconds) to exit and save the setting state;
- ✧ In the user setting state, if the operation is not performed for 10 seconds, the instrument does not save the setting and return to the normal cycling state;
- ✧ — Under the user setting state, short press to switch the next setting interface, short press to switch the previous setting interface;+
- ✧ In the user setting state, short press to enter the current setting item.M

7.2 Unit setting

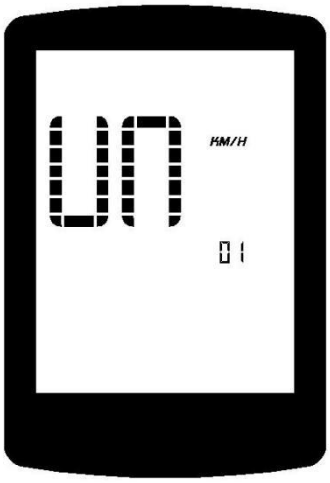
M+—MUnder the unit Settings interface, press to enter unit Settings, press / select units, press to confirm save and return to the unit Settings interface.

UN: Representative unit setting;

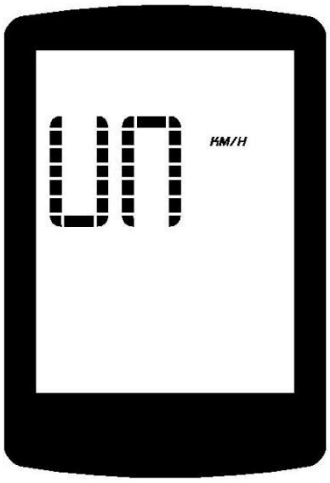
KM / H: means that subtotal mileage and total mileage are KM, and speed is KM / H;

MPH: means subtotal mileage, total mileage in Mile, speed in MPH;

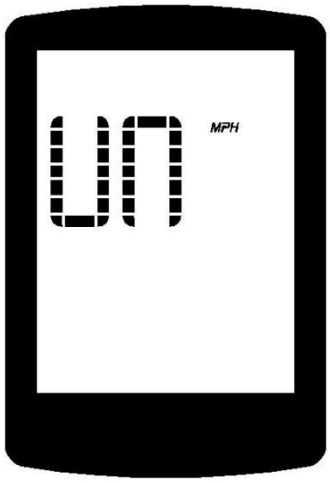
The display interface is as follows:



Unit setting interface



Short press M to enter the unit Settings (KM / H)



Unit settings (MPH)

7.3 Automatic shutdown time setting

M+—MUnder the automatic shutdown time setting interface, press to enter the automatic shutdown time setting, press / select the automatic shutdown time, press to confirm to save and return to the automatic shutdown time setting interface.

OFF: represents the automatic shutdown time setting

0: Cancel the automatic shutdown;

1:1 minute of automatic shutdown time;

2:2 minutes of automatic shutdown time;

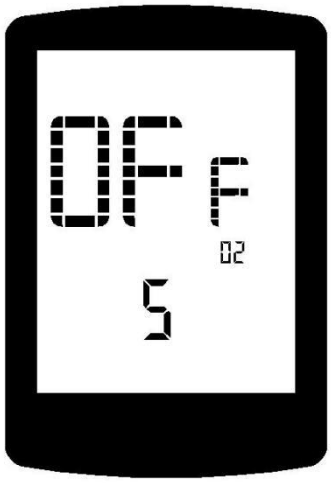
3:3 minutes of automatic shutdown time;

5:5 minutes of automatic shutdown time;

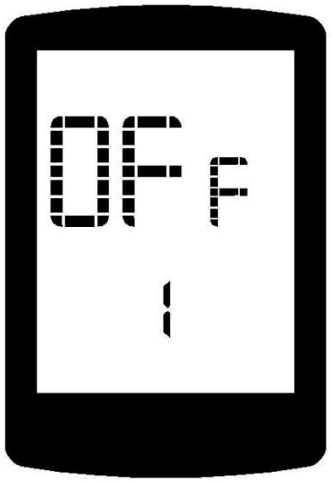
8:8 minutes of automatic shutdown time;

10:10 minutes of automatic shutdown time;

The display interface is as follows:



Automatic shutdown time setting interface



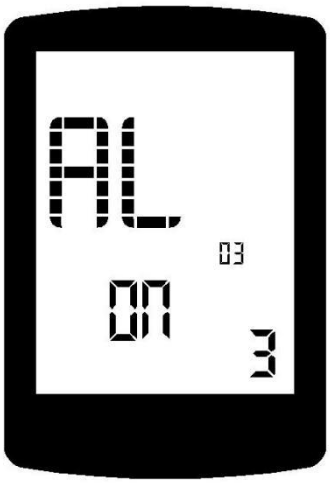
Short press M to enter the automatic shutdown time setting (1 minute)

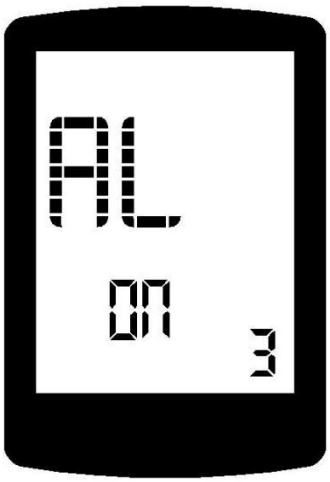
7.4 Automatic brightness adjustment setting (optional fixed brightness)

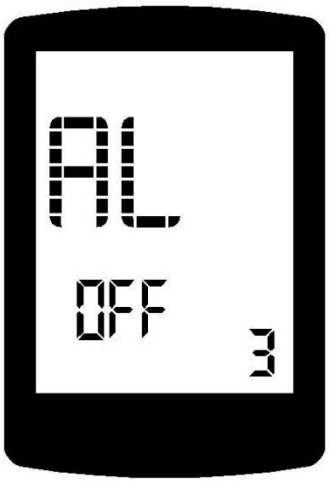
M+—Under the automatic brightness adjustment setting interface, short press to enter the automatic brightness adjustment setting, press / select to open and close the automatic brightness adjustment and other brightness (five fixed brightness, increase from low to high), short press to save and return to the automatic brightness adjustment setting interface.M

AL: Represents the automatic brightness adjustment setting

The display interface is shown as follows:







Automatic brightness adjustment and setting interface	Short press M to enter the automatic brightness setting (open)	Automatic brightness setting (off and fixed brightness gear 3)

7.5 Automatic headlight Settings

M+—MUnder the automatic headlight setting screen, press to enter the automatic headlight setting, press / select to on / off, press to confirm to save and return to the automatic headlight setting screen.

LS: represents the automatic headlight setting

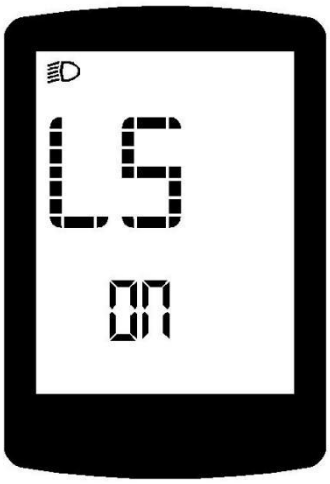
ON: Automatic headlights are turned on;

OFF: Automatic headlights are turned off;

The display interface is shown as follows:



Automatic headlight setting interface



Short press M to enter the automatic headlight setting (turn on)



Automatic Headlamp Settings (turn-off)

7.6 Power-on password-enabled setting

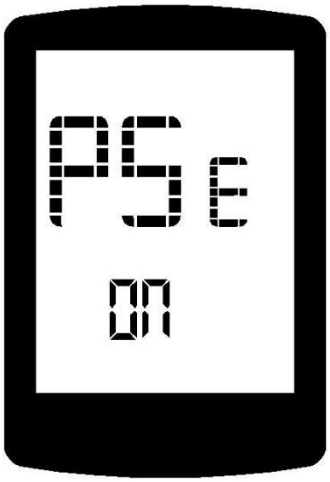
M+—MUnder the boot password enabling setting interface, press to enter the boot password enabling setting, press / select to open / close the boot password, press to confirm to save and return to the boot password enabling setting interface.

PSE: represents the boot password enabled setting

The display interface is as follows:



Boot password enabling setting interface



Short press M to enter the boot password setting (open)



Booon password setting (off)

7.7 Boot-on password setting

MPower-on password setting, under the interface, short press to enter the old password input interface.

PSP: old password input interface (the number "1" on the right indicates the current first password);

PSN: New password input interface (the number "1" on the right indicates the current first password);

PSA: New password confirmation interface (the number "1" on the right indicates the current first password entered);

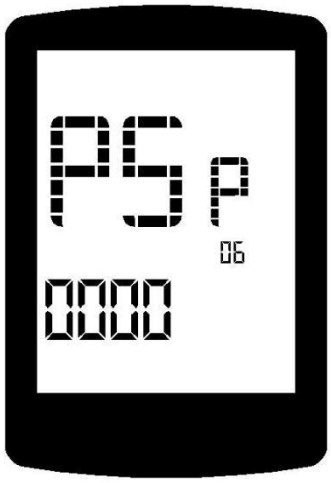
+—MUnder the old password input interface, the first password number is in a beating state, indicating that the position is an adjustable password number, press /, the first password number change, confirm the first password number, confirm the old password, automatically enter the new password input interface; if the old password, the old password is wrong, enter the old password again (the old password input error automatically return to the boot password setting interface after 3 times);

Under the new password input interface, confirm the new password in turn, and automatically enter the new password confirmation interface;

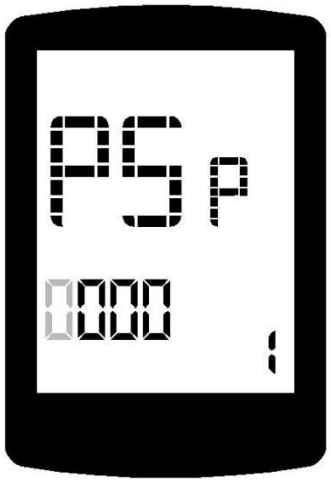
Under the new password confirmation interface, enter the new password and the password is returned to the startup password setting interface (the new password setting is completed and saved); if the password is inconsistent with the first new password input, enter the first new password again (return the old password input interface after 3 errors, the old password shall be entered again, and the new password is not saved);

After entering the password setting interface, long press (3 seconds) at any interface to return to the boot password setting interface.M

The display interface is as follows:



Boot on password setting interface



Short press M to enter the old password input interface



New password entry interface



New password confirmation interface

7.8 Wheel diameter information

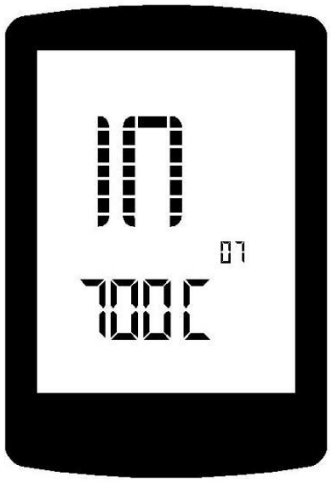
M+—M Under the wheel diameter information interface, press the entry wheel diameter, select the wheel diameter by /, press to confirm the save and return to the wheel diameter information interface.

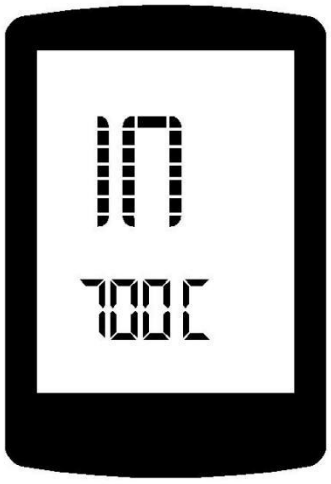
IN: Representative wheel diameter information.

700C: means that the current instrument is suitable for 700C wheel diameter vehicles.

The wheel diameter can be set: 16inch, 18inch, 20inch, 22inch, 24inch, 26inch, 700 inch, 28inch, 29inch

The display interface is as follows:





Wheel diameter information interface　　Short press M into the wheel diameter setting

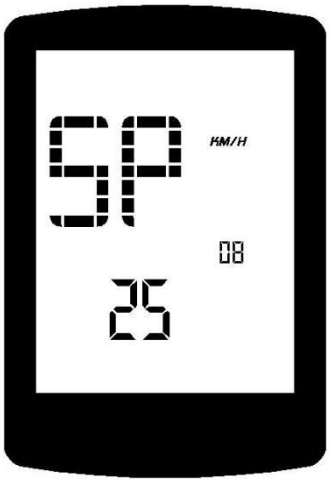
7.9 Speed limit information

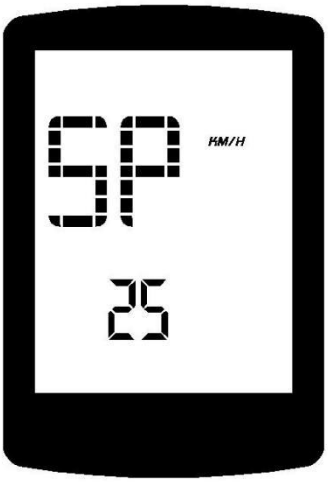
Under the speed limit information interface, press to enter the speed limit setting, press / switch, speed limit value, press to confirm and save and return to the speed limit information interface.M+—M

SP: Speed limit information

25KM: top speed of 25KM / H;

The display interface is as follows:





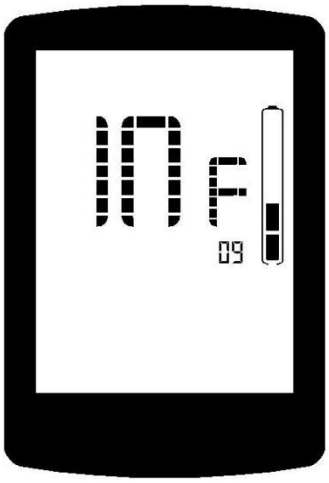
Speed limit information interface　　Short press M to enter the speed limit setting

7.10, and the battery information

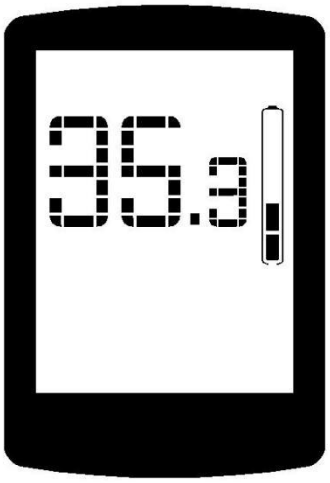
Under the battery information interface, if the system contains battery communication, more abundant battery information can be displayed except the battery voltage, then short press to enter the battery information selection, press / switch the battery information option, short press to confirm and return to the battery information interface;M+—M

INF: Battery information; 35.3: battery voltage 35.3V; CYC: battery charging cycle times; 362: battery cycle 362 times

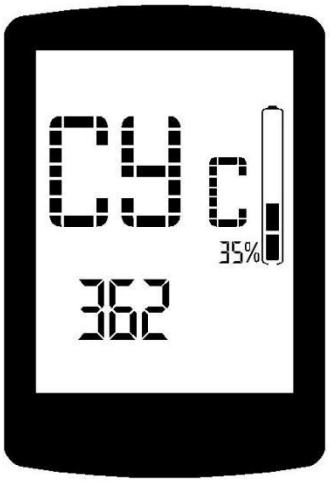
The display interface is shown as follows:



Battery information interface



Short press M to enter the battery voltage information



Battery cycle number information

8 Data zero

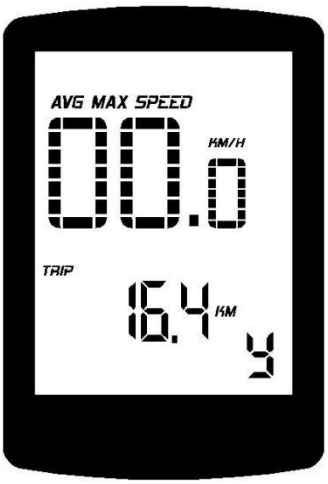
M+—MM After 10 seconds and speed is zero, long press (3 seconds), enter the data reset interface (default selection is "n"), press / select "y", confirm selection, clear subtotal mileage (TRIP), average speed (AVG) and maximum speed (MAX), and return to data reset interface; select "n", confirm selection, and directly return to data reset interface, not clear data; if not operated within 5 seconds, return to data reset interface and not clear data.

Normal shutdown and power loss do not clear the above data.

The display interface is as follows:



Data reset interface (default "n")



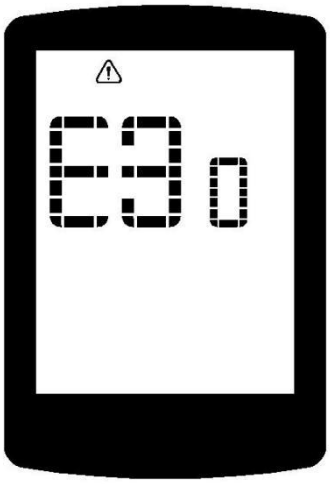
Data reset interface (select "y")

9 Fault information

9.1 Fault display

The instrument can provide warning to the vehicle fault. When the fault is detected, the instrument interface displays the fault code ERROR 30; the other error code is only displayed by the controller definition instrument, and can refer to the communication protocol document for details.

The interface is displayed as follows:



Error code "30"

9.2 Default code definition

The fault code is obtained from the controller instruction. Generally, the controller defines the meaning of the error code. The meter only defines the Uncommunication ERROR 30.

Fault code	Troubleshooting	Investigation and analysis
E30	Communication failure, the instrument cannot receive the data from the controller or the data received is the wrong data.	1: Check whether the TX and RX communication lines are correctly connected. 2: Check whether the wiring harness and connector are loose or broken. 3: Check whether the instrument communication protocol is matched.

10 Wiring definition

Table 1 Table of standard connector lines

Standard line order	Standard line color	function
1	red (VCC)	Instrument power cord
2	blue (KP)	Power supply control cable for the controller
3	black (GND)	Instrument ground line
4	hispid arthraxon (RX)	Data receiving line of the instrument
5	yellow (TX)	Data transmission line of the meter

Note: Actual line order definition is confirmed according to customer requirements.

Three matters needing attention

- ✧ In the process of use, pay attention to the safety of use, do not plug the instrument under power;
- ✧ Try to avoid use in harsh environment, heavy rain, heavy snow, exposure.
- ✧ When the instrument cannot be used normally, it should be repaired as soon as possible.

This operation description is a general version. Some instructions of the actual software may differ from the specification depending on the actual
The version used.