Qingdao Magene Intelligence Technology Co., Ltd.

User Manual

eBike LCD Display
Model： DY21

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1. Product Introduction

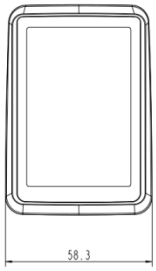
- Category：eBike LCD Display
- Model：DY21
- Appearance：

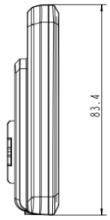
- Specification：

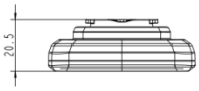
Rated Voltage（DCV）	36/48V
Working Temp(℃)	-20~50
Storage Temp(℃)	-25~55
Waterproof Level	IPX6
Display Type	LCD 3”
Assist Level（Riding Mode）	A（AUTO），1（ECO），2（CITY），3（TOUR），4（SPORT），5（TURBO）
Walk Assistance	Available
Light On/Off Function	Available
Button/Function Tone	Available
Backlight	Manual
Charging	Type-C
Communication	CAN、BLE
Upgrading	OTA
Data Display	Speed, Max Speed, Avg Speed, Trip, Trip Time, ODO, Assist Level, Assist bar, Battery Capacity, Range, energy consumption, Error Code, Dual Battery Icon, BLE Icon, Light Icon, Walk Assist Icon etc

2. Dimension

- Display

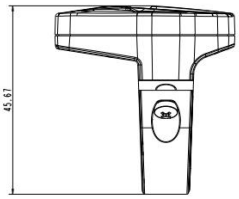


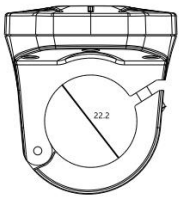


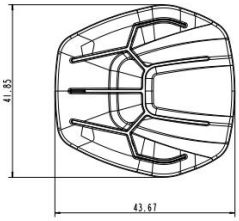


Display size: 83.4*58.3*20.5mm

- Controlling Button

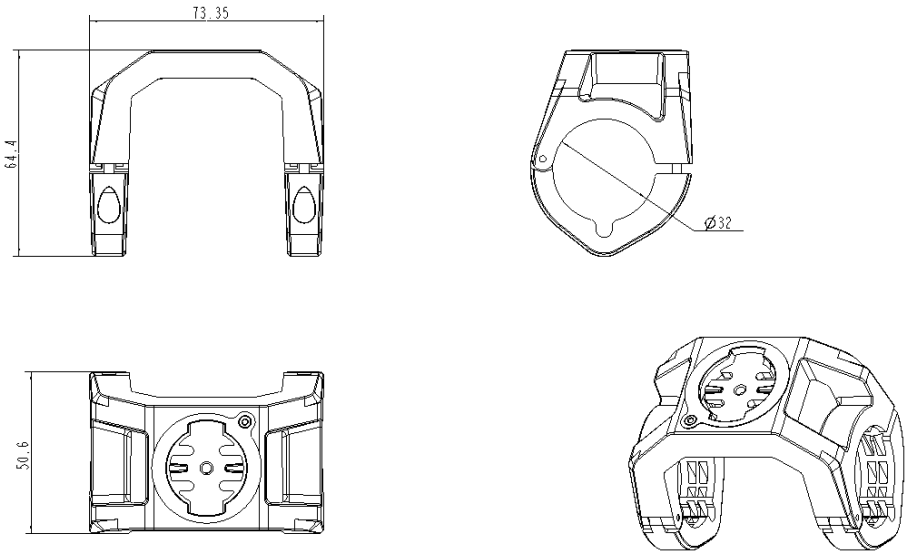






Controlling button size: 43.67*41.85*45.67mm， adapted handlebar diameter: 22.2mm

- Display Support

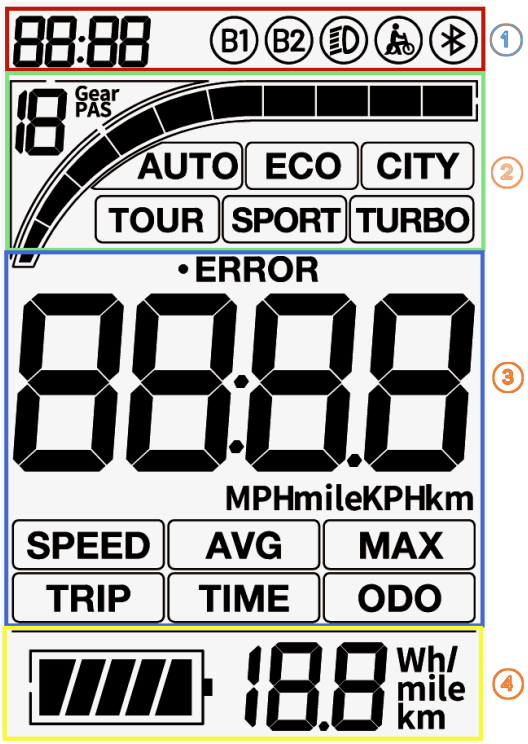


Display support Size: 73.35*50.6*64.4mm，adapted handlebar diameter: 31.8mm（22.2mm is also available with rubber cover）

- Pin Connection Definition

Category	No.	Color	Definition
Pin Connection	1	Red	Battery
	2	Black	GND
	3	Yellow	CANL
	4	Green	CANH
	5	Blue	IO

3. Display Introduction



① Status Area

Including：APP Icon，Dual Battery Icon，Light Icon，Walk Assist Icon，BLE Icon

- APP Icon ：it can show “-APP”
- Dual Battery Icon ：The icon appears and disappears along with dual battery switching operation
- Light Icon ：The icon appears and disappears along with light/Backlight on/off operation
- Walk Assist Icon ：The icon appears and disappears along with walk assistance operation
- BLE Icon ：It always appears on the screen when display is power on, it means BLE is on working

② Riding Mode Area

Including：6 Riding Modes，Assist Bar，Assist Level（PAS）

- 6 riding Modes ：AUTO，ECO，CITY，TOUR，SPORT，TURBO（It doesn’t show “OFF” mode），It switches along with assist level and riding modes switching operation
- Assist Bar ：10 segments，it switches dynamically along with assist level、riding modes switching operation and Throttle mode operation
- Assist Level（PAS）：Assist level including one digit and PAS icon, digit includes 0,A,1,2,3,4,5, the assist level and riding modes OFF（It doesn’t appear on the display），AUTO，ECO，CITY，TOUR，SPORT，TURBO are in one-to-one correspondence, the assist level（PAS） switches along with assist level and riding modes switching operation
- Correspondence:

Riding Modes	PSA Value	Assist Bar Segment
OFF（It doesn't show on the display）	0	0
AUTO	A	0~10
ECO	1	2
CITY	2	4
TOUR	3	6
SPORT	4	8
TURBO	5	10

③ Riding Data Area

Including：SPEED，AVG SPEED，MAX SPEED，TRIP，TRIP TIME，ODO，ERROR Code

- SPEED 

：Current Speed, It switches along with riding data switching operation, SPEED is default data showing on the display when the display is power on
- AVG SPEED 

：Average Speed in one trip， it switches along with riding data switching operation
- MAX SPEED 

：Max Speed in one trip， it switches along with riding data switching operation
- TRIP 

：Trip distance, the trip distance starts when the display is power on and ends when the display is power off，it switches along with riding data switching operation
- TRIP TIME 

：The trip time starts when the display is power on and ends when the display is power off，it switches along with riding data switching operation
- ODO 

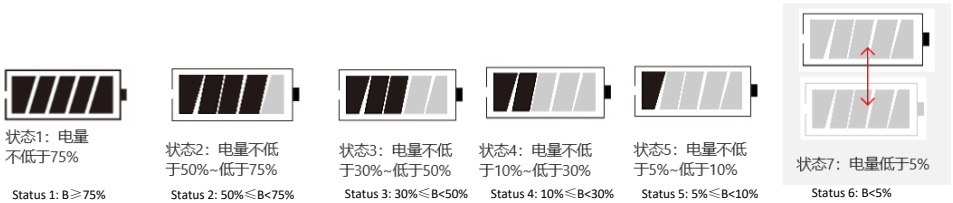
：Total riding distance，it switches along with riding data switching operation
- ERROR Code 

：It includes three digits and Error icon

④ Battery Area

Including：Battery Capacity，Range（km）

- Battery Capacity：5 segments，it shows as following：



- Range（km） 

：It shows the distance cyclist can still ride

4. Controlling Button Introduction

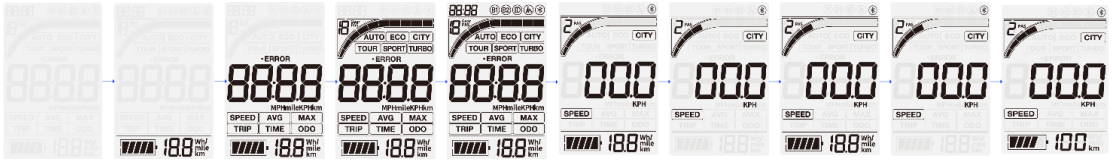
Including：5 buttons， “+”， “-”， “\<”， “/>”， “M/⏻”

Operation：One button short pressing，One button long pressing，multiple buttons short pressing

5. Function Introduction

① Power On/Off

Power On：Long pressing “M/⏻” 2s when the display is power off



Power On Process

Power Off：Long pressing “M/⏻” 2s when the display is power on

Power Off Process

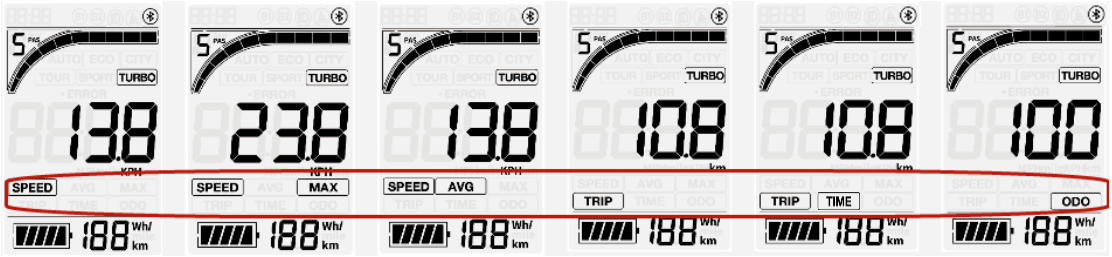
② Assist Level and Riding Modes Switching Operation

Display shows Assist level（PAS），short pressing“+”or“-” to switch assist level，riding modes，assist bar synchronously，the default assist level（riding mode）is 1（ECO）when display is power on

When there is no electronic shifting

③ Riding Data Switching Operation

Short pressing “M/⏻” to switch riding data clockwise and Cyclically



④ Light/Backlight On/Off Operation

Long pressing "/<" 2s to switch on light and backlight，display shows "" ， long pressing "/<" 2s again to switch off light and backlight，display doesn't show "" anymore

⑤ Walk Assistance Operation

Pressing "/>" 2s and hold it to start walk assistance mode，display shows "" ，then release "/>" to stop walk assistance mode，display doesn't show "" anymore

⑥ Dual Battery Switching Operation

When there are two batteries in the eBike system， this two batteries release power synchronously，display shows "B1" and "B2" ， battery capacity = B1 capacity + B2 capacity；Short pressing "+" and "-" synchronously to switch to B1 to release power，display shows "B1" ， battery capacity = B1 capacity；Short pressing"+"and"-"synchronously again to switch to B2 to release power，display shows"B2"，battery capacity = B2 capacity；Short pressing"+"and"-"synchronously again，then it switches to two batteries release power synchronously again；During this operation range value changes along with dual battery switching operation

⑦ Button/Function Tone

When controlling button operation and function is successful, there is “di” tone from the display

⑧ Phone Charging Function

When there is Type-C charging port on the bottom of the display，it can connect with phone with two sides Type-C cable，this can charge phone with maximum output voltage 5V and maximum output current 1A

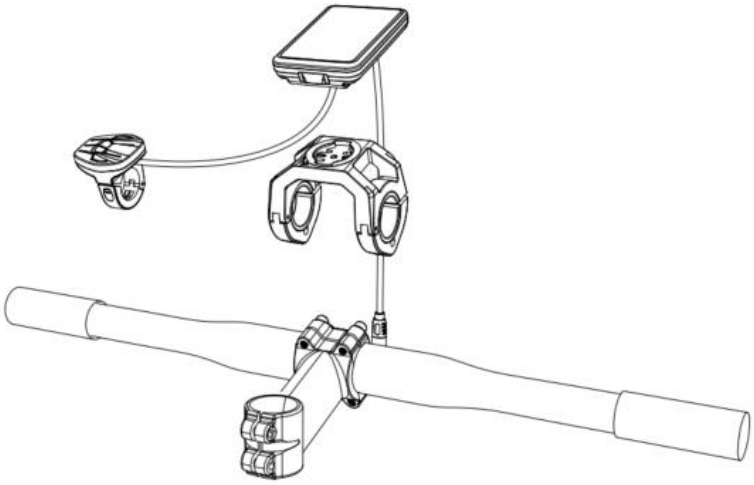
6. Error Code Definition

When there is fault in eBike system，display shows “ERROR + Code”，the display can go back to normal showing once the cyclist clicks any controlling button（Display still shows Error icon in the riding data area to mention the cyclist that the fault is still unsolved），The display will show entire normally once the fault is solved. If the cyclist can’t solve the fault by self， just go to dealer shop and do aftersales service

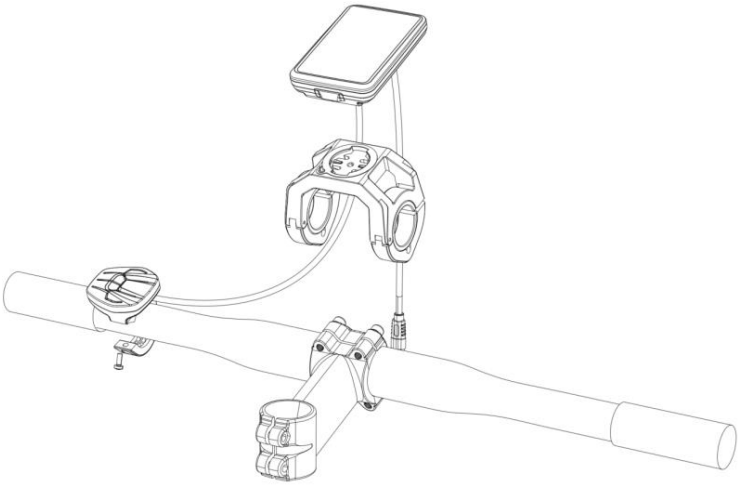
Error Code	Fault	Solution
102	Under Voltage	Checking the battery and charge it
103	Phase current over current	If this fault always appear, just check eBike controller or motor, it may be broken
105	Lack phase of motor	① Checking the cable and connector between eBike controller and motor, the cable maybe broken or connector become less crowded ② eBike motor or controller is broken, it needs change eBike motor or controller
106	Short circuit of motor	① Checking the cable and connector between eBike controller and motor, the cable maybe broken or connector become less crowded ② eBike motor or controller is broken, it needs change eBike motor or controller
107	Lock rotor of motor	Over load or exceeding the uphill ability when the cyclist riding, it can recover when removing load or riding within the requirements of uphill ability
108	Hall anomaly	① Checking the cable and connector between eBike controller and motor, the cable maybe broken or connector become less crowded, ② Hall sensor is broken, it needs change motor
109	Controller over heat	Over load or exceeding the uphill ability when the cyclist riding, it can recover when removing load or riding within the requirements of uphill ability
110	Throttle anomaly	① Checking the cable and connector between eBike controller and throttle, the cable maybe broken or connector become less crowded, ② Throttle is broken, it needs change throttle

111	Communication fault(Digit torque sensor)	① Checking the cable and connector between eBike controller and torque sensor, the cable maybe broken or connector become less crowded ② eBike controller or torque sensor is broken, it needs change eBike controller or torque sensor
115	Temp sensor fault of controller	Sensor is broken, it needs change controller
001	Communication fault (Display)	① Checking the cable and connector between eBike controller and display, the cable maybe broken or connector become less crowded ② eBike controller or display is broken, it needs change eBike controller or display
002	Storage fault (Display)	Display is broken, it needs change display
003	“M|⏻” long pressing fault(20s)	① It can recover to normal once loose button if it is manual default Display fault, it needs change display

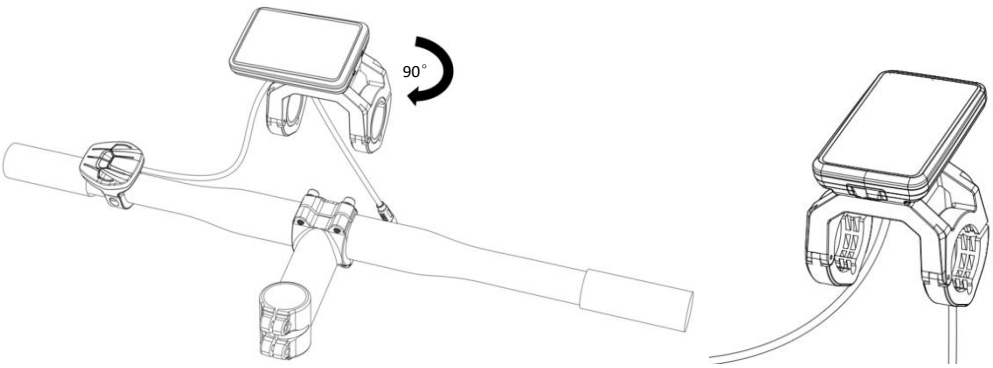
7. Mounting Instruction



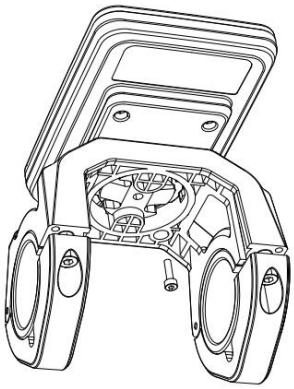
① Mounting controlling button，showing as following:



② Put display on the support and rotate 90° clockwise，showing as following



③ The screw hole of support and display should be alignment，and firm display and support by inserting screw，showing as following



④ Firm display with handle bar by screws，the cable between display and controlling button can be firmed by the support，showing as following